



SILIGURI INSTITUTE OF TECHNOLOGY

Department of Information Technology
Report on Industrial Training on Data Structure with C

Training Details:

Training on Data Structure with C

Resource Organization: ARDENT

Training Date: 17th August 2020 to 31st August 2020

Venue: ONLINE MODE

Student: 3rd Year IT (6th Semester)

Students Enrolled: 28

Students Completed Successfully: 28

Pass Out Year: 2021

Feedback Analysis: Attached

Student List: Attached

Introduction:

Data Structures is a concept a means of storing a collection of data. Computer Science is a concern with study of methods for effectively using a computer to solve problems. These can be solved by algorithms and data structures. Data Structures tells you what way the data as to store in computer memory and how to access the data efficiently. Many Applications are designed by data structures stack applications like page visited history in a web-browser, chain of method calls in the Java virtual machine or C++ Run-time environment etc. Queue Application Like Waiting Lines, Multi-programming etc. For many applications the choice of proper data structure is the only major decision involving the implementation. Majorly the database designing and internal implementation is done only by using Data Structures techniques through C programming language.

Training Objective:

This Course main objective for the student to understand Analysis and Designing of the Algorithms and how the different data structures are used for efficient accessing of the data and Manipulation of the data at the end of the session we can able to know different Kinds of data structures and we can able to provide different algorithms for time and space complexity.

Training Outcome:

After completed the training student will able to

- ❖ Understand the concept of data structures and its relevance in computer science.
- ❖ Familiarize with selected linear and nonlinear data structures.
- ❖ Enhance skill in programming in C.

Training Methodology:

- Hands on practice approach to training, behavioral model of training would be practiced.
- During the training, the Trainee would implement a project related to respective modules.

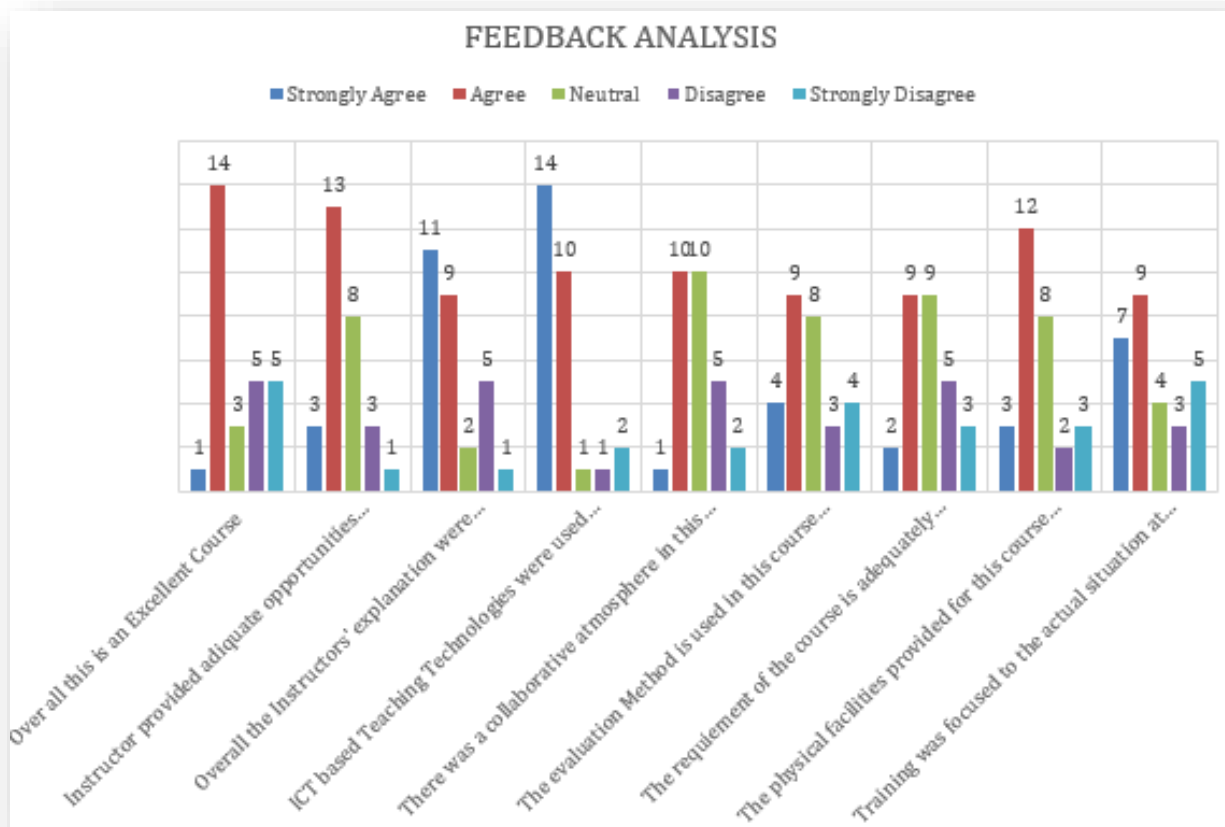
- Commitment to Individual growth and constant evaluation.
- Implementation of programming techniques through a Project using C language.

Summary:

The following points can be noted from the program.

- ❖ At the beginning of the training trainer has clearly described the basic Introduction Data structure and c - programming skill and its application in industries in different areas.
- ❖ Students had done many programming by themselves during the trainings.
- ❖ During the training some students raised their queries and the trainer had explained all the quarries of the students.
- ❖ At the end of the training an online exam was conducted.
- ❖ As per the feedback received from the students’ end, the entire session was really fruitful
- ❖ and enjoyable and the students have learned many things about C Programming skill.

Feedback analysis for the training:



Student List:

SN	ROLLNO	NAME	Remarks
1	11900217001	TONMAY DUTTA	Successfully Completed
2	11900217002	SOUYAMA DEBNATH	Successfully Completed
3	11900217003	SOUBHIK DUTTA	Successfully Completed
4	11900217004	SHINJINI SANYAL	Successfully Completed
5	11900217006	ROHIT KUMAR BARMAN	Successfully Completed
6	11900217008	RAJANI KANTA ROUTH	Successfully Completed
7	11900217009	PRINCE KUMAR	Successfully Completed
8	11900217010	PAYEL DAS	Successfully Completed
9	11900217011	NIKITA BARA	Successfully Completed
10	11900217012	NANCY KUMARI PRASAD	Successfully Completed
11	11900217013	MD AHTESHAMUL HUSSAIN	Successfully Completed
12	11900217014	MANJIT SINGH	Successfully Completed
13	11900217015	LAKSHMINARAYAN GHOSH	Successfully Completed
14	11900217016	KISHAN BISWAKARMA	Successfully Completed
15	11900217017	JYOTIRMAY DEB	Successfully Completed
16	11900217018	INDRA NATH MUKHERJEE	Successfully Completed
17	11900217019	HIMADRI BHATTACHARYA	Successfully Completed
18	11900217020	DIPAK BARMAN	Successfully Completed
19	11900217021	CHAYAN KARMAKAR	Successfully Completed
20	11900217022	BISWAJIT SHARMA	Successfully Completed
21	11900217023	BIKRAM BARMAN	Successfully Completed
22	11900217024	BIDISHA DAS	Successfully Completed
23	11900217025	BAISHALI SAHA	Successfully Completed
24	11900217026	AYAN DUTTA	Successfully Completed
25	11900217027	ARPAN BHAKTA	Successfully Completed
26	11900217028	ANUSHKA KUMARI	Successfully Completed
27	11900217029	ADITYA HALDER	Successfully Completed
28	11900217030	ADARSH RAI	Successfully Completed



SILIGURI INSTITUTE OF TECHNOLOGY

DEPARTMENT OF INFORMATION TECHNOLOGY

Report on Industrial Training on ML With Python

Training Details:

Training on Machine Learning with PYTHON

Resource Organization: ARDENT

Training Date: 16th September 2019 to 20th September 2019

Venue: ONLINE MODE

Student: 3rd Year IT (6th Semester)

Students Enrolled: 60

Students Completed Successfully: 60

Pass Out Year: 2020

Feedback Analysis: Attached

Student List: Attached

Introduction:

Artificial Intelligence (AI), Machine Learning (ML) and Data Science (DS) are the pillars of the fourth industrial revolution. ML is an application of AI which allows computers to automatically learn from data without being explicitly programmed. Python has been designed with the provision for creating Machine Learning algorithms. Python is preferred as the best and robust platform for Machine Learning systems. Python also has numerous libraries for machine learning, data manipulation and analysis as well as a very active development community that continuously updates and creates new packages. It has been adopted by a wide variety of industries and applications including Data Science, Machine Learning, Data Analytics, Predictive Analytics, Business Intelligence and Web Analytics. This workshop aims to explore Python Programming right from installation, fundamentals to Machine Learning algorithms.

The Training session covered the basic algorithm that helps us to build and apply prediction functions with an emphasis on practical applications. **Training Objectives**

Main objectives of training were to learn:

- How to determine and measure program complexity,
- Python Programming
- ML Library Scikit, Numpy , Matplotlib, Pandas , Theano , TensorFlow
- Statistical Math for the Algorithms.
- Learning to solve statistics and mathematical concepts.
- Supervised and Unsupervised Learning
- Classification and Regression
- ML Algorithms
- Machine Learning Programming and Use Cases.

The outcomes of this workshop are:

- Understand the components of a Machine Learning algorithm.
- Apply Machine Learning tools to build and evaluate predictors

- How Machine Learning uses computer algorithms to search for patterns in data
- How to uncover hidden themes in large collections of documents using topic modeling
- How to prepare data, deal with missing data and create custom data analysis solutions for different industries
- Familiarity with Python installation, syntax and design

Why Python Is a Perfect Language for Machine Learning?

1. **A great library ecosystem** - A great choice of libraries is one of the main reasons Python is the most popular programming language used for AI. A library is a module or a group of modules published by different sources which include a pre-written piece of code that allows users to reach some functionality or perform different actions. Python libraries provide base level items so developers don't have to code them from the very beginning every time. ML requires continuous data processing, and Python's libraries let us access, handle and transform data. These are some of the most wide spread libraries we can use for ML and AI:
 - Scikit-learn for handling basic ML algorithms like clustering, linear and logistic regressions, regression, classification, and others.
 - Pandas for high-level data structures and analysis. It allows merging and filtering of data, as well as gathering it from other external sources like Excel, for instance.
 - Keras for deep learning. It allows fast calculations and prototyping, as it uses the GPU in addition to the CPU of the computer.
 - TensorFlow for working with deep learning by setting up, training, and utilizing artificial neural networks with massive datasets.
 - Matplotlib for creating 2D plots, histograms, charts, and other forms of visualization.
 - NLTK for working with computational linguistics, natural language recognition, and processing.
 - Scikit-image for image processing.
 - PyBrain for neural networks, unsupervised and reinforcement learning.
 - Caffe for deep learning that allows switching between the CPU and the GPU
 - StatsModels for statistical algorithms and data exploration.

In the PyPI repository, we can discover and compare more python libraries.

2. **A low entry barrier** - Working in the ML and AI industry means dealing with a bunch of data that we need to process in the most convenient and effective way. The low entry barrier allows more data scientists to quickly pick up Python and start using it for AI development without wasting too much effort into learning the language.

In addition to this, there's a lot of documentation available, and Python's community is always there to help out and give advice

3. **Flexibility**- Python for machine learning is a great choice, as this language is very flexible:
 - It offers an option to choose either to use OOPs or scripting.
 - There's also no need to recompile the source code, developers can implement any changes and quickly see the results.
 - Programmers can combine Python and other languages to reach their goals.
4. **Good Visualization Options**- For AI developers, it's important to highlight that in artificial intelligence, deep learning, and machine learning, it's vital to be able to represent data in a human-readable format. Libraries like Matplotlib allow data scientists to build charts, histograms, and plots for better data comprehension, effective presentation, and visualization. Different application programming interfaces also simplify the visualization process and make it easier to create clear reports.
5. **Community Support**- It's always very helpful when there's strong community support built around the programming language. Python is an open-source language which means that there's a bunch of resources

open for programmers starting from beginners and ending with pros. A lot of Python documentation is available online as well as in Python communities and forums, where programmers and machine learning developers discuss errors, solve problems, and help each other out. Python programming language is absolutely free as is the variety of useful libraries and tools.

6. **Growing Popularity**-As a result of the advantages discussed above, Python is becoming more and more popular among data scientists. According to Stack Overflow, the popularity of Python is predicted to grow until 2020, at least. This means it's easier to search for developers and replace team players if required. Also, the cost of their work maybe not as high as when using a less popular programming language Data Preprocessing, Analysis & Visualization Machine Learning algorithms don't work so well with processing raw data. Before we can feed such data to an ML algorithm, we must preprocess it. We must apply some transformations on it. With data preprocessing, we convert raw data into a clean data set.

To perform data this, there are 7 techniques –

1. **Rescaling Data** -For data with attributes of varying scales, we can rescale attributes to possess the same scale. We rescale attributes into the range 0 to 1 and call it normalization. We use the Min Max Scaler class from scikit-learn. This gives us values between 0 and 1.
2. **Standardizing Data** -With standardizing, we can take attributes with a Gaussian distribution and different means and standard deviations and transform them into a standard Gaussian distribution with a mean of 0 and a standard deviation
3. **Normalizing Data** -In this task, we rescale each observation to a length of 1 (a unit norm). For this, we use the Normalizer class.
4. **Binarizing Data** -Using a binary threshold, it is possible to transform our data by marking the values above it 1 and those equal to or below it, 0. For this purpose, we use the Binarizer class.
5. **Mean Removal**-We can remove the mean from each feature to center it on zero.
6. **One Hot Encoding** -When dealing with few and scattered numerical values, we may not need to store these. Then, we can perform One Hot Encoding. For k distinct values, we can transform the feature into a k-dimensional vector with one value of 1 and 0 as the rest values.
7. **Label Encoding** -Some labels can be words or numbers. Usually, training data is labelled with words to make it readable. Label encoding converts word labels into numbers to let algorithms work on them

Machine Learning Algorithms:

There are many types of Machine Learning Algorithms specific to different use cases. As we work with datasets, a machine learning algorithm works in two stages. We usually split the data around 20%-80% between testing and training stages. Under supervised learning, we split a dataset into a training data and test data in Python ML. Followings are the Algorithms of Python Machine Learning -

1. Linear Regression-Linear regression is one of the supervised Machine learning algorithms in Python that observes continuous features and predicts an outcome. Depending on whether it runs on a single variable or on many features, we can call it simple linear regression or multiple linear regression. This is one of the most popular Python ML algorithms and often under-appreciated. It assigns optimal weights to variables to create a line $ax+b$ to predict the output. We often use linear regression to estimate real values like a number of calls and costs of houses based on continuous variables. The regression line is the best line that fits $Y=a*X+b$ to denote a relationship between independent and dependent variables.

2. Logistic Regression -Logistic regression is a supervised classification is unique Machine Learning algorithms in Python that find sits use in estimating discrete values like 0/1, yes/no, and true/false. This is based on a given set of independent variables. We use a logistic function to predict the probability of an event and this gives us an output between 0 and 1. Although it says 'regression', this is actually a classification algorithm. Logistic regression fits data into a logit function and is also called logit regression.

3. Decision Tree -A decision tree falls under supervised Machine Learning Algorithms in Python and comes of use for both classification and regression- although mostly for classification. This model takes an instance, traverses the tree, and compares important features with a determined conditional statement. Whether it descends to the left child branch or the right depends on the result. Usually, more important features are closer to the root. Decision Tree, a Machine Learning algorithm in Python can work on both categorical and continuous dependent variables. Here, we split a population into two or more homogeneous sets. Tree models where the target variable can take a discrete set of values are called classification trees; in these tree structures, leave represent class labels and branches represent conjunctions of features that lead to those class labels. Decision trees where the target variable can take continuous values (typically real numbers) are called regression trees.

4. Support Vector Machine (SVM)-SVM is a supervised classification is one of the most important Machines Learning algorithms in Python, that plots a line that divides different categories of your data. In this ML algorithm, we calculate the vector to optimize the line. This is to ensure that the closest point in each group lies farthest from each other. While you will almost always find this to be a linear vector, it can be other than that. An SVM model is a presentation of the examples as points in space, mapped so that the examples of the separate categories are divided by a clear gap that is as wide as possible. In addition to performing linear classification, SVMs can efficiently perform a non-linear classification using what is called the kernel trick, implicitly mapping their inputs into high-dimensional feature spaces. When data are unlabeled, supervised learning is not possible, and an unsupervised learning approach is required, which attempts to find natural clustering of the data to groups, and then map new data to these formed groups.

5. Naïve Bayes Algorithm - Naive Bayes is a classification method which is based on Bayes' theorem. This assumes independence between predictors. A Naive Bayes classifier will assume that a feature in a class is unrelated to any other. Consider a fruit. This is an apple if it is round, red, and 2.5 inches in diameter. A Naive Bayes classifier will say these characteristics independently contribute to the probability of the fruit being an apple. This is even if features depend on each other. For very large data sets, it is easy to build a Naive Bayesian model. Not only is this model very simple, it performs better than many highly sophisticated classification methods. Naïve Bayes classifiers are highly scalable, requiring a number of parameters linear in the number of variables (features/predictors) in a learning problem. Maximum-likelihood training can be done by evaluating a closed-form expression, which takes linear time, rather than by expensive iterative approximation as used for many other types of classifiers.

6. k NN Algorithm -This is a Python Machine Learning algorithm for classification and regression- mostly for classification. This is a supervised learning algorithm that considers different centurions and uses a usually Euclidean function to compare distance. Then, it analyzes the results and classifies each point to the group to optimize it to place with all closest points to it. It classifies new cases using a majority vote of k of its neighbors. The case it assigns to a class is the one most common among its K nearest neighbors. For this, it uses a distance function. k-NN is a type of instance-based learning, or lazy learning, where the function is only approximated locally and all computation is deferred until classification.

k-NN is a special case of a variable- bandwidth, kernel density "balloon" estimator with a uniform kernel.

7. K-Means Algorithm -k-Means is an unsupervised algorithm that solves the problem of clustering. It classifies data using a number of clusters. The data points inside a class are homogeneous and heterogeneous to peer groups. k-means clustering is a method of vector quantization, originally from signal processing, that is popular for cluster analysis in data mining. k -means clustering aims to partition n observations into k-clusters in which each observation belongs to the cluster with the nearest mean, serving as a prototype of the cluster.

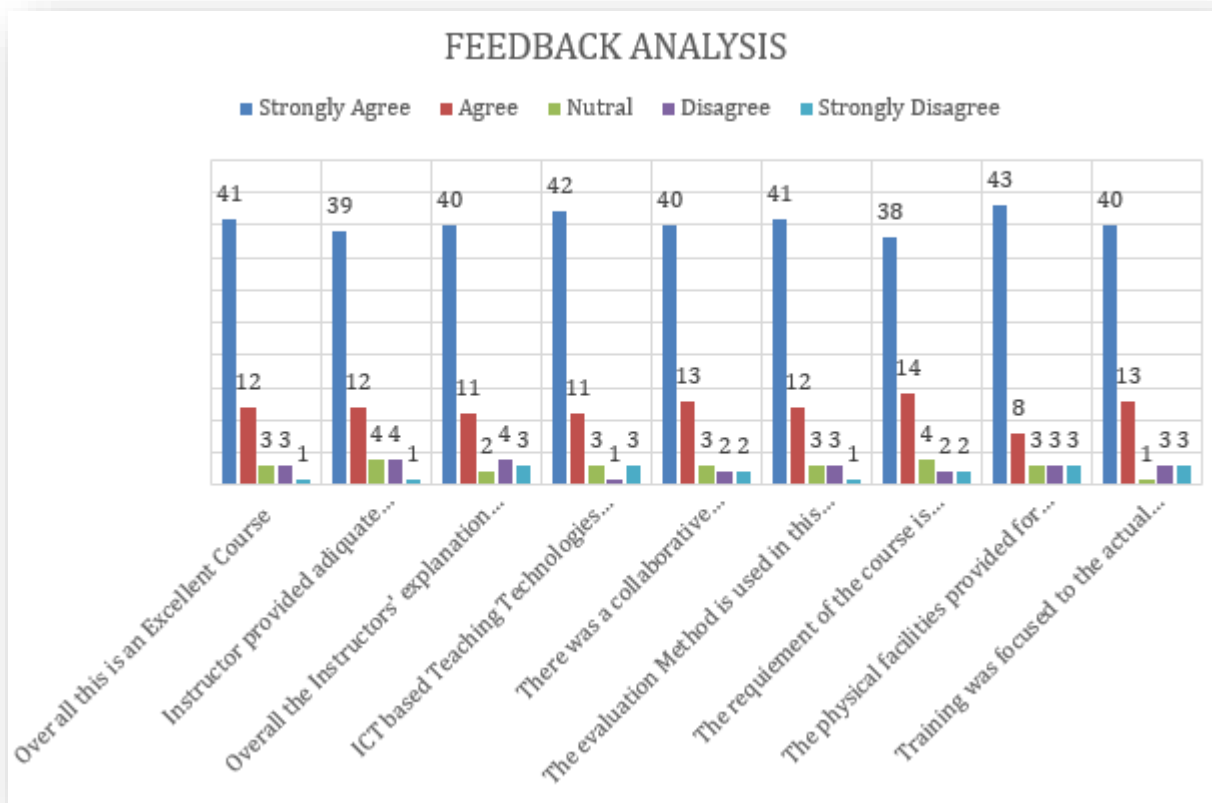
k-means clustering is rather easy to apply to even large data sets, particularly when using heuristics such as Lloyd' s algorithm. It often is used as a preprocessing step for other algorithms, for example to find a starting configuration.

The problem is computationally difficult(NP-hard). k-means originates from signal processing, and still finds use in this domain. In cluster analysis, the k-means algorithm can be used to partition the input data set into k partitions (clusters).

k-means clustering has been used as a feature learning (or dictionary learning) step, in either(semi-)supervised learning or unsupervised learning.

8.Random Forest - A random forest is an ensemble of decision trees. In order to classify every new object based on its attributes, trees vote for class- each tree provides a classification. The classification with the most votes win in the forest. Random forests or random decision forests are an ensemble learning method for classification, regression and other tasks that operates by constructing a multitude of decision trees at training time and outputting the class that is the mode of the classes (classification) or mean prediction (regression) of the individual trees.

Feedback Analysis:



Student List:

SN	ROLL NO	NAME	Remarks
1	11900216001	VISAL HAZRA	Successfully Completed
2	11900216002	UJJAYINEE MAJUMDER	Successfully Completed
3	11900216003	TUHIN BANERJEE	Successfully Completed

4	11900216004	TAPAS KR PRAMANIK	Successfully Completed
5	11900216005	SWATI KUMARI	Successfully Completed
6	11900216006	SWAGATA SARKAR	Successfully Completed
7	11900216007	SUYASH KUMARI	Successfully Completed
8	11900216008	SUKIRTI KUMARI	Successfully Completed
9	11900216009	SUBHRAJIT SAHA	Successfully Completed
10	11900216010	SUBHANKAR BHOWAL	Successfully Completed
11	11900216011	SOURAV BAKSHI	Successfully Completed
12	11900216012	SIDDHARTH PANDEY	Successfully Completed
13	11900216013	SIBANGI DEB	Successfully Completed
14	11900216014	SHASWAT SINGH	Successfully Completed
15	11900216015	SAURAV GOSWAMI	Successfully Completed
16	11900216016	SANANDA CHATTERJEE	Successfully Completed
17	11900216017	ROHAN MITRA	Successfully Completed
18	11900216018	RASHMI PRASAD	Successfully Completed
19	11900216019	RAMAKANT PRASAD	Successfully Completed
20	11900216020	RAJ ROY	Successfully Completed
21	11900216021	RAINAK BASAK	Successfully Completed
22	11900216022	RAINA CHOUDHURY	Successfully Completed
23	11900216023	RAHUL KUMAR	Successfully Completed
24	11900216024	RAHUL CHOUDHURI	Successfully Completed
25	11900216025	PURBITA PAL	Successfully Completed
26	11900216027	PRATIK BOSE	Successfully Completed
27	11900216028	POOJA SINGH	Successfully Completed
28	11900216029	PANKAJ CHAUDHURI	Successfully Completed
29	11900216030	NIKITA GHOSH	Successfully Completed
30	11900216031	NIKESH KUMAR SAH	Successfully Completed
31	11900216032	NAMRATA DUTTA	Successfully Completed
32	11900216033	MEGHA BHATTACHARJEE	Successfully Completed
33	11900216034	MANISHA JHA	Successfully Completed
34	11900216035	MADHUSHREE MAJUMDAR	Successfully Completed
35	11900216036	KAUSTAV DAS	Successfully Completed
36	11900216037	KARTIK ROY	Successfully Completed
37	11900216038	GITASHREE SAHA	Successfully Completed
38	11900216039	DREEK GUHA	Successfully Completed
39	11900216040	DIVYANSHU PRAKASH PUNJ	Successfully Completed
40	11900216041	DIPAYAN GHOSH	Successfully Completed
41	11900216042	DIPANKAR SAHA	Successfully Completed
42	11900216044	DEBJYOTI JHA	Successfully Completed
43	11900216045	DEBANJAN DAS	Successfully Completed
44	11900216046	DEBANGSHU SAHA	Successfully Completed
45	11900216047	CHAITALI SAHA	Successfully Completed

46	11900216048	BIKASH GURAGAI	Successfully Completed
47	11900216049	AYUSH ANAND	Successfully Completed
48	11900216050	AYAN MUKHOPADHYAY	Successfully Completed
49	11900216051	AVISHEK DAS	Successfully Completed
50	11900216052	AUROSHREE MUKHERJEE	Successfully Completed
51	11900216053	ASHMITA BASU MAZUMDAR	Successfully Completed
52	11900216054	ARYA ROY	Successfully Completed
53	11900216055	ARVI HASSAN	Successfully Completed
54	11900216056	ARUP DAS	Successfully Completed
55	11900216057	ARITRA BHATTACHARJEE	Successfully Completed
56	11900216058	ARINDAM PODDER	Successfully Completed
57	11900216059	ARGHYADEEP PANDIT	Successfully Completed
58	11900216061	ANKITA PAUL CHOWDHURY	Successfully Completed
59	11900216062	AKASH KUMAR	Successfully Completed
60	11900216063	ABHISHEK PRASAD SINGH	Successfully Completed



SILIGURI INSTITUTE OF TECHNOLOGY

DEPARTMENT OF INFORMATION TECHNOLOGY

Industrial Training Report on Big Data/Hadoop

Training Details:

Training on Big Data / Hadoop

Resource Organization: I & WE

Training Date: 18th January 2018 to 28th January 2018

Venue: SIT, OT&UML Lab

Student: 3rd Year IT (6th Semester)

Students Enrolled: 41

Students Completed Successfully: 41

Pass Out Year: 2019

Feedback Analysis: Attached

Student List: Attached

Introduction

Hadoop is an open-source framework that allows to store and process big data in a distributed environment across clusters of computers using simple programming models. It is designed to scale up from single servers to thousands of machines, each offering local computation and storage. In the Training provides a quick introduction to Big Data, Map Reduce algorithm, and Hadoop Distributed File System.

Training Objective:

- Upon completion of this course, participants will be able to:
- Understand fundamentals of Concepts in Bigdata and hadoop etc
- Understand fundamentals of Hadoop etc.
- Be able to use the HDFS file system, debug and run simple Java programs for hdfs.
- Be aware of the important topics and principles of software development and write better &more maintainable code
- Be able to program using advanced Java topic like JDBC, Servlets and JSP .

What is Big Data?

Big data means really a big data, it is a collection of large datasets that cannot be processed using traditional computing techniques. Big data is not merely a data, rather it has become a complete subject, which involves various tools, techniques and frameworks.

Advantages of Hadoop:

- Hadoop framework allows the user to quickly write and test distributed systems. It is efficient, and it automatic distributes the data and work across the machines and in turn, utilizes the underlying parallelism of the CPU cores.
- Hadoop does not rely on hardware to provide fault-tolerance and high availability (FTHA), rather Hadoop library itself has been designed to detect and handle failures at the application layer.

- Servers can be added or removed from the cluster dynamically and Hadoop continues to operate without interruption.
- Another big advantage of Hadoop is that apart from being open source, it is compatible on all the platforms since it is Java based.

Training Methodology:

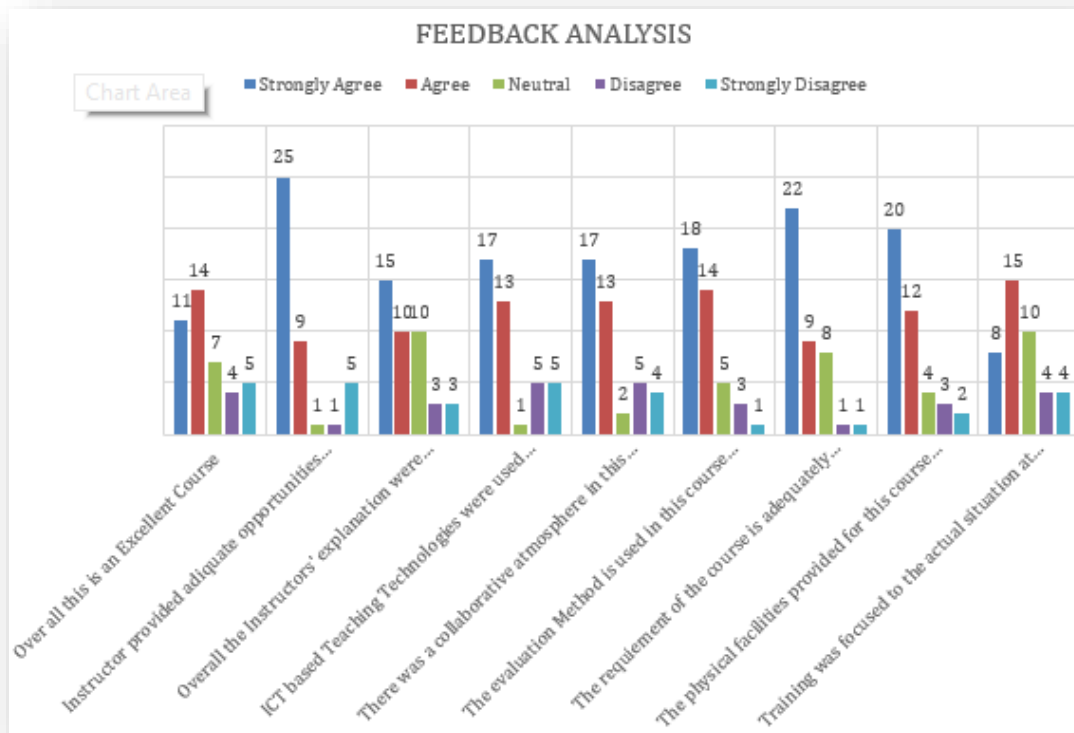
- Hands on practice approach to training, behavioral model of training would be practiced.
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- Commitment to Individual growth and constant evaluation.
- Implementation of programming techniques through a Project.

Summary of the program:

The following points can be noted from the program.

- ❖ At the beginning of the training trainer has clearly described the basic Introduction to java its application in industries in different areas.
- ❖ Students had done many data analysis algorithm by themselves during the trainings.
- ❖ During the training some students raised their queries and the trainer had explained all the quarries of the students.
- ❖ At the end of the training an online exam was conducted.
- ❖ As per the feedback received from the students end, the entire session was really fruitful
- ❖ and enjoyable and the students have learned framework of Hadoop.

Feedback analysis for the training:



Student List:

SN	ROLLNO	NAME	Remarks
1	11900215001	ABHISHEK CHOUDHARY	Successfully Completed
2	11900215002	ABIR NANDY	Successfully Completed
3	11900215003	ADRIJA ROY	Successfully Completed
4	11900215004	AIJURA KSHIAR	Successfully Completed
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22	11900215024	KALLOL ROY	Successfully Completed
23	11900215025	MANISH ANAND	Successfully Completed
24	11900215026	MAYURI ROY	Successfully Completed
25	11900215027	MD MUKHLESUR RAHAMAN	Successfully Completed
26	11900215028	MRIGANKA HEMBRAM	Successfully Completed
27	11900215029	NITA SARKAR	Successfully Completed
28	11900215030	OM KUMARI PRADHAN	Successfully Completed
29	11900215032	POULAMI DAS	Successfully Completed
30	11900215033	PRATIKCHA KHAWAS	Successfully Completed
31	11900215034	RAJARSHI DEB	Successfully Completed
32	11900215035	RAJIV JAJODIA	Successfully Completed
33	11900215036	RASHMI KUMARI	Successfully Completed
34	11900215037	SANTOSH KUMAR	Successfully Completed
35	11900215038	SHASHI KUMAR SAHA	Successfully Completed
36	11900215039	SHIMPI PAUL	Successfully Completed
37	11900215040	SOMJYOTI HORE	Successfully Completed
38	11900215041	SRISHTI KUMARI	Successfully Completed
39	11900215042	SWAGATA SAHA	Successfully Completed
40	11900215043	TANFEEZ AHSAN	Successfully Completed
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Industrial Training Report on Big Data/Hadoop

Training Details:

Training on Big Data / Hadoop

Resource Organization: I & WE

Training Date: 16th July 2017 to 17th July 2018

Venue: SIT, OT&UML Lab

Student: 3rd Year IT (6th Semester)

Students Enrolled: 16

Students Completed Successfully: 16

Pass Out Year: 2018

Feedback Analysis: Attached

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- Hadoop does not rely on hardware to provide fault-tolerance and high availability (FTHA), rather Hadoop library itself has been designed to detect and handle failures at the application layer.

- Servers can be added or removed from the cluster dynamically and Hadoop continues to operate without interruption.
- Another big advantage of Hadoop is that apart from being open source, it is compatible on all the platforms since it is Java based.

Training Methodology:

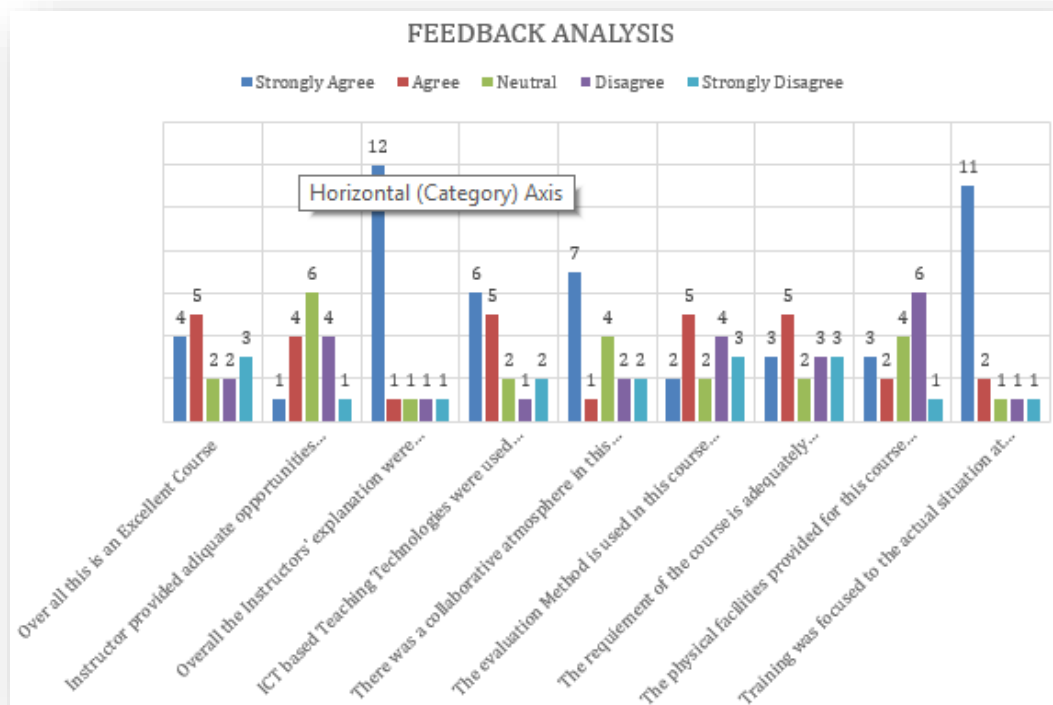
- Hands on practice approach to training, behavioral model of training would be practiced.
- During the training, the Trainee would implement a project related to respective modules.
- Commitment to Individual growth and constant evaluation.
- Implementation of programming techniques through a Project.

Summary of the program:

The following points can be noted from the program.

- ❖ At the beginning of the training trainer has clearly described the basic Introduction to java its application in industries in different areas.
- ❖ Students had done many data analysis algorithm by themselves during the trainings.
- ❖ During the training some students raised their queries and the trainer had explained all the quarries of the students.
- ❖ At the end of the training an online exam was conducted.
- ❖ As per the feedback received from the students’ end, the entire session was really fruitful
- ❖ and enjoyable and the students have learned framework of Hadoop.

Feedback analysis for the training:



Student List:

SN	ROLL NO.	NAME	Remarks
1	11900214001	ARABINDA ROY	Successfully Completed
2	11900214002	ARPAN PAUL	Successfully Completed
3	11900214003	BINEETA MAJUMDER	Successfully Completed
4	11900214004	BIPUL SARKAR	Successfully Completed
5	11900214005	DEEPAK SINGH	Successfully Completed
6	11900214006	JYOTI KUMARI GUPTA	Successfully Completed
7	11900214007	NAIRITH DAS	Successfully Completed
8	11900214008	NAYAN KUMAR	Successfully Completed
9	11900214009	PRABHAT PUSHKAR	Successfully Completed
10	11900214010	PUJA KUMARI	Successfully Completed
11	11900214011	SAHELI PYNE	Successfully Completed
12	11900214012	SOUBHIK DAS	Successfully Completed
13	11900214013	SUSHRI PAUL	Successfully Completed
14	11900214015	VINEET KUMAR	Successfully Completed
15	11900214016	YEAKUTUN NESSA	Successfully Completed
16	11900215045	DEBOJIT PAUL	Successfully Completed



SILIGURI INSTITUTE OF TECHNOLOGY

DEPARTMENT OF INFORMATION TECHNOLOGY

Industrial Training Report on Advanced JAVA

Training Details:

Training on Big Data / Hadoop

Resource Organization: NSIC

Training Date: 1st August 2016 to 12th August 2016

Venue: SIT, Programming Lab I/ SIT, Programming Lab II/OT&UML Lab

Student: 3rd Year IT (6th Semester)

Students Enrolled: 17

Students Completed Successfully: 17

Pass Out Year: 2017

Feedback Analysis: Attached

Student List: Attached

Introduction:

Apart from University requirement, Java is also a pre-requisite for learning latest technologies like Android and Big Data. In order to prepare and make students ready for industry Computer science department has carved out a course that specifically aligns with industry requirements and conducted by industry experts.

In this training session students learned basic object oriented concepts such as inheritance, encapsulation, and abstraction. They learn how to create and use simple Java classes containing arrays, loops, and conditional constructs. They also learn to use and manipulate object references, and to write simple error handling code. They also learned some advance topic like JDBC connectivity, JSP, Servlets.

Training Objective:

Upon completion of this course, participants will be able to:

- Understand fundamentals of Java programming such as variables, conditional and iterative execution, methods, etc
- Understand fundamentals of object-oriented programming using Java, including defining classes, invoking methods, using class libraries, etc.
- Be able to use the Java SDK environment to create, debug and run simple Java programs
- Be aware of the important topics and principles of software development and write better & more maintainable code
- Be able to program using advanced Java topic like JDBC, Servlets and JSP .

Training Methodology:

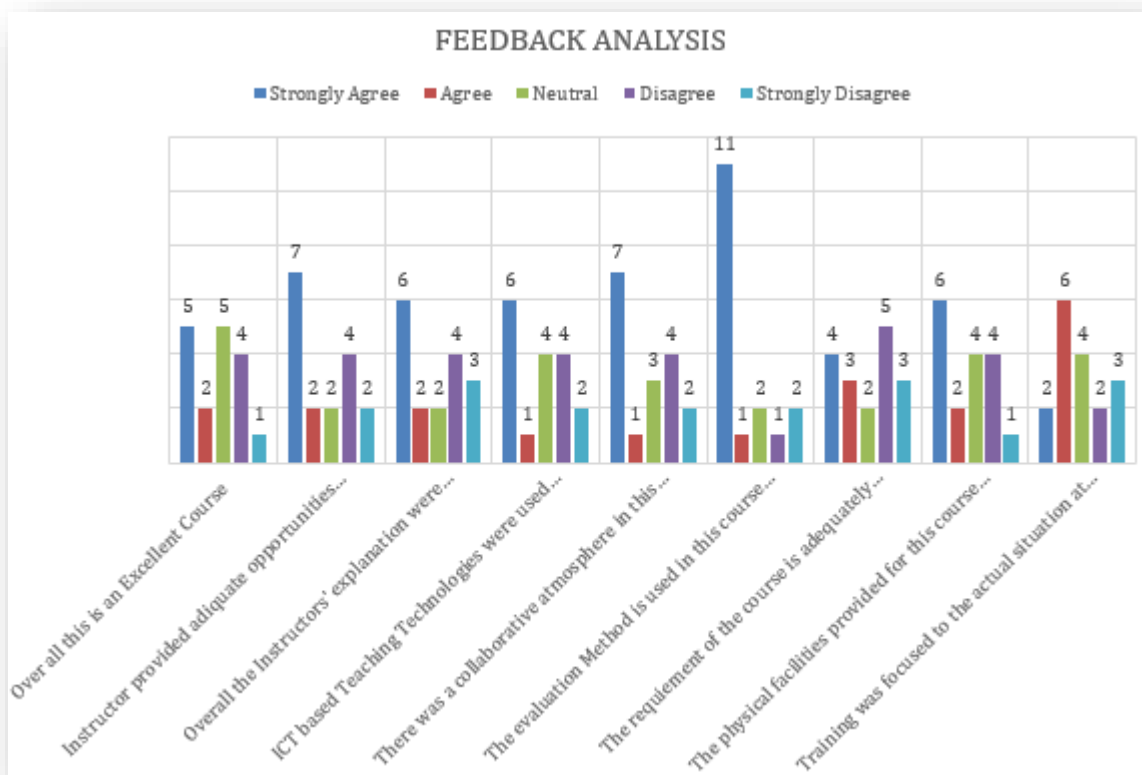
- Online on approach to training, behavioral model of training would be practiced.
- During the training, the Trainee would implement a project related to respective modules.
- Commitment to Individual growth and constant evaluation.
- Implementation of programming techniques through a Project.

Summary of the program:

The following points can be noted from the program.

- ❖ At the beginning of the training trainer has clearly described the basic Introduction to, OOPs programming and java its application in industries in different areas with the students.
- ❖ Students had done many programming by themselves during the trainings.
- ❖ During the training some students raised their queries and the trainer had explained all the quarries of the students.
- ❖ At the end of the training an online exam was conducted.
- ❖ As per the feedback received from the students end, the entire session was really fruitful
- ❖ and enjoyable and the students have learned many things about Java

Feedback analysis for the training:



Student List:

SN	ROLL NO.	NAME	Remarks
1	11900213001	ABHISHEK KUMAR LAL	Successfully Completed
2	11900213002	AMIT KUMAR ROY	Successfully Completed
3	11900213003	ANAND KESHAV	Successfully Completed
4	11900213004	ANINDITA BHATTACHARJEE	Successfully Completed
5	11900213005	KUMARI RIAH	Successfully Completed
6	11900213006	MANISH THAKUR	Successfully Completed
7	11900213007	MUKESH KUMAR BURNWAL	Successfully Completed
8	11900213008	POONAM SONAR	Successfully Completed
9	11900213009	RAHUL KUMAR SHAW	Successfully Completed
10	11900213010	RAMU CHHETRI	Successfully Completed
11	11900213011	RITESH SHAW	Successfully Completed
12	11900213012	RITUPARNA DAS	Successfully Completed
13	11900213013	SANCHITA MONDAL	Successfully Completed
14	11900213014	SUBHANKAR BISWAS	Successfully Completed
15	11900213015	SUSHMITA ROY	Successfully Completed
16	11900213016	SWAGAT BHATTACHARJEE	Successfully Completed
17	11900213018	YASHASBI GUPTA	Successfully Completed



SILIGURI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering
Report on Industrial Training on Data Structure with C

Training Details:

Training on Data Structure with C

Resource Organization: ARDENT

Training Date: 17th August 2020 to 31st August 2020

Venue: ONLINE MODE

Student: 3rd Year CSE (6th Semester)

Students Enrolled: 96

Students Completed Successfully: 96

Pass Out Year: 2021

Feedback Analysis: Attached

Student List: Attached

Introduction:

Data Structures is a concept a means of storing a collection of data. Computer Science is a concern with study of methods for effectively using a computer to solve problems. These can be solved by algorithms and data structures. Data Structures tells you what way the data as to store in computer memory and how to access the data efficiently. Many Applications are designed by data structures stack applications like page visited history in a web-browser, chain of method calls in the Java virtual machine or C++ Run-time environment etc. Queue Application Like Waiting Lines, Multi-programming etc. For many applications the choice of proper data structure is the only major decision involving the implementation. Majorly the database designing and internal implementation is done only by using Data Structures techniques through C programming language.

Training Objective:

This Course main objective for the student to understand Analysis and Designing of the Algorithms and how the different data structures are used for efficient accessing of the data and Manipulation of the data at the end of the session we can able to know different Kinds of data structures and we can able to provide different algorithms for time and space complexity.

TRAINING OUTCOME:

After completed the training student will able to

- ❖ Understand the concept of data structures and its relevance in computer science.
- ❖ Familiarize with selected linear and nonlinear data structures.
- ❖ Enhance skill in programming in C.

Training Methodology:

- Hands on practice approach to training, behavioral model of training would be practiced.
- During the training, the Trainee would implement a project related to respective modules.

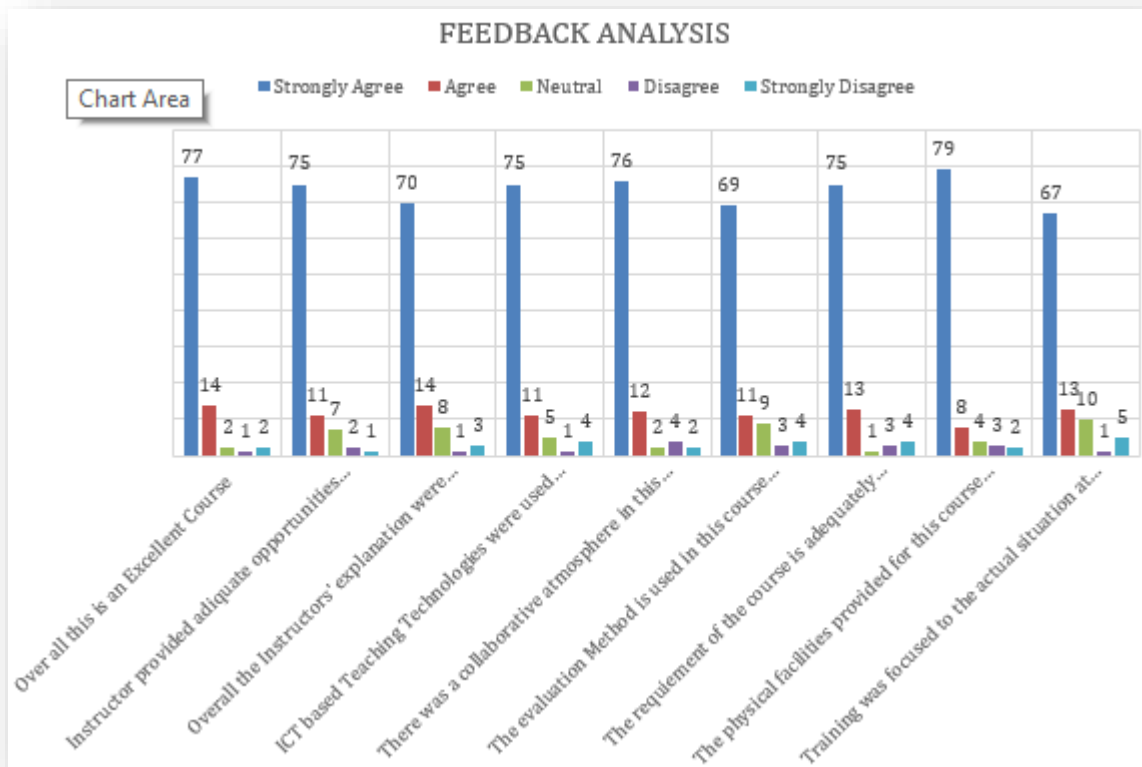
- Commitment to Individual growth and constant evaluation.
- Implementation of programming techniques through a Project using C language.

Summary of the program:

The following points can be noted from the program.

- ❖ At the beginning of the training trainer has clearly described the basic Introduction Data structure and c - programming skill and its application in industries in different areas.
- ❖ Students had done many programming by themselves during the trainings.
- ❖ During the training some students raised their queries and the trainer had explained all the quarries of the students.
- ❖ At the end of the training an online exam was conducted.
- ❖ As per the feedback received from the students’ end, the entire session was really fruitful
- ❖ and enjoyable and the students have learned many things about C Programming skill.

Feedback analysis for the training:



Student List:

SN	ROLLNO	NAME	Remarks
1	11900117007	VISHAL GUPTA	Successfully Completed
2	11900117008	TAUSIF KHAN	Successfully Completed
3	11900117009	TANUSREE HALDER	Successfully Completed
4	11900117010	TANUSHREE PANDIT	Successfully Completed
5	11900117011	SWATI SINGH	Successfully Completed
6	11900117012	SUSWAGATA CHAKRABORTY	Successfully Completed
7	11900117013	SURABHI GOPE	Successfully Completed
8	11900117014	SUJEET KUMAR	Successfully Completed
9	11900117015	SUDARSHAN SHARMA	Successfully Completed
10	11900117016	SRESTHA ROY	Successfully Completed
11	11900117017	SOURAV GHOSH	Successfully Completed
12	11900117018	SHWETA DAS	Successfully Completed
13	11900117019	SHUBHANGKAR CHAKRABORTY	Successfully Completed
14	11900117020	SHRITHI BASUMATA	Successfully Completed
15	11900117021	SHREYAM SAHA	Successfully Completed
16	11900117022	SAURAV KUMAR	Successfully Completed
17	11900117023	SAUGATA MAJILA	Successfully Completed
18	11900117024	SAUGATA MAHALI	Successfully Completed
19	11900117025	SATYAM KUMAR	Successfully Completed
20	11900117026	SANDIP DAS	Successfully Completed
21	11900117027	SAKET GAUTAM	Successfully Completed
22	11900117028	SAFWAN SARWAR	Successfully Completed
23	11900117029	ROHIT ISOR	Successfully Completed
24	11900117030	ROHIT GOWALA	Successfully Completed
25	11900117031	RIYA DUTTA	Successfully Completed
26	11900117032	RINKI KUNDU	Successfully Completed
27	11900117033	RICKY SAHA	Successfully Completed
28	11900117034	RAMIZ HOSSAIN	Successfully Completed
29	11900117035	RAHUL CHAKRABORTY	Successfully Completed
30	11900117036	PURABI DAS	Successfully Completed
31	11900117037	PRIYANKA PRASAD	Successfully Completed

32	11900117038	PRITHWIRAJ SARKAR	Successfully Completed
33	11900117039	PRITHWIRAJ DEBNATH	Successfully Completed
34	11900117040	PRITHVI RAJ DEBNATH	Successfully Completed
35	11900117042	POULAMI MONDAL	Successfully Completed
36	11900117043	NISHA SINHA	Successfully Completed
37	11900117044	NIRUPAM DAS	Successfully Completed
38	11900117045	NIKITA DAS	Successfully Completed
39	11900117047	MUKHTADUL ISLAM	Successfully Completed
40	11900117048	MRINAL MADHUKAR	Successfully Completed
41	11900117049	MORISH JOY EKKA	Successfully Completed
42	11900117050	MODASSIR ALAM	Successfully Completed
43	11900117051	MANTHAN KUMAR OJHA	Successfully Completed
44	11900117052	LINKAN MAJUMEDR	Successfully Completed
45	11900117053	KUMAR JAYANT	Successfully Completed
46	11900117054	KOYEL DAS	Successfully Completed
47	11900117055	KOUSHIK SHIL	Successfully Completed
48	11900117056	KIRAN KUMARI	Successfully Completed
49	11900117057	KAUSHIK DEY	Successfully Completed
50	11900117058	KARAN AGARWAL	Successfully Completed
51	11900117059	JAYA BANIK	Successfully Completed
52	11900117060	HIMANISH BHATTACHARYA	Successfully Completed
53	11900117061	GUNJAN ROY	Successfully Completed
54	11900117062	DIPIKA SARKAR	Successfully Completed
55	11900117063	DIPANNITA KUNDU	Successfully Completed
56	11900117064	DIBYA JYOTI GHOSH	Successfully Completed
57	11900117065	DEBRUPA BHATTACHARYA	Successfully Completed
58	11900117066	DEBALINA LAHA	Successfully Completed
59	11900117067	DEB PRAMANIK	Successfully Completed
60	11900117068	BRAJESH KUMAR MANDAL	Successfully Completed
61	11900117069	BISHAL DHAIR	Successfully Completed
62	11900117070	BHASKAR RAY	Successfully Completed
63	11900117071	BARSHAN PAL	Successfully Completed
64	11900117072	AYITIK SHOME	Successfully Completed
65	11900117073	AVISHEK ROY	Successfully Completed

66	11900117074	ARSALAN UMER SHAH	Successfully Completed
67	11900117075	ARPITA SAHA KUNDU	Successfully Completed
68	11900117076	ARNAB SHARMA	Successfully Completed
69	11900117077	ARNAB BAURI	Successfully Completed
70	11900117078	ARITRA SINHA	Successfully Completed
71	11900117079	ARITRA SAHA	Successfully Completed
72	11900117080	ARGHYA MITRA	Successfully Completed
73	11900117081	ANISH KUMAR JHA	Successfully Completed
74	11900117082	ANINDITA KAR	Successfully Completed
75	11900117083	ANIKET SHAW	Successfully Completed
76	11900117084	AMRIT RAJ	Successfully Completed
77	11900117085	AMIT BHAGAT	Successfully Completed
78	11900117086	AKASH KRISHNA KOLEY	Successfully Completed
79	11900117087	ADITYA SINGH	Successfully Completed
80	11900117088	ADHIRAJ PAL	Successfully Completed
81	11900117089	ABHISHEK SINHA	Successfully Completed
82	11900117090	ABHISHEK SHARMA	Successfully Completed
83	11900117091	ABHISHEK PRASAD	Successfully Completed
84	11900117092	ABHISHEK KUMAR	Successfully Completed
85	11900117093	ABHISHEK DEB	Successfully Completed
86	11900117094	ABHINAV KUMAR	Successfully Completed
87	11900117095	AASHUTOSH SINHA	Successfully Completed
88	11900118002	SUDHIR KUMAR	Successfully Completed
89	11900118003	SUBHAM NANDY	Successfully Completed
90	11900118004	SANCHITA DAS	Successfully Completed
91	11900118005	RIMLI SARKAR	Successfully Completed
92	11900118006	NUTAN DAS GUPTA	Successfully Completed
93	11900118007	NIKITA PRASAD	Successfully Completed
94	11900118008	KRITIKA SHRESTHA	Successfully Completed
95	11900118009	DIPANKAR KARJEE	Successfully Completed
96	11900118010	ARIT MAJUMDAR	Successfully Completed



SILIGURI INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Report on Industrial Training on ML With Python

Training Details:

Training on Machine Learning with PYTHON

Resource Organization: ARDENT

Training Date: 16th September 2019 to 20th September 2019

Venue: ONLINE MODE

Student: 3rd Year CSE (6th Semester)

Students Enrolled: 92

Students Completed Successfully: 92

Pass Out Year: 2020

Feedback Analysis: Attached

Student List: Attached

Introduction:

Artificial Intelligence (AI), Machine Learning (ML) and Data Science (DS) are the pillars of the fourth industrial revolution. ML is an application of AI which allows computers to automatically learn from data without being explicitly programmed. Python has been designed with the provision for creating Machine Learning algorithms. Python is preferred as the best and robust platform for Machine Learning systems. Python also has numerous libraries for machine learning, data manipulation and analysis as well as a very active development community that continuously updates and creates new packages. It has been adopted by a wide variety of industries and applications including Data Science, Machine Learning, Data Analytics, Predictive Analytics, Business Intelligence and Web Analytics. This workshop aims to explore Python Programming right from installation, fundamentals to Machine Learning algorithms.

The Training session covered the basic algorithm that helps us to build and apply prediction functions with an emphasis on practical applications. **Training Objectives**

Main objectives of training were to learn:

- How to determine and measure program complexity,
- Python Programming
- ML Library Scikit, Numpy , Matplotlib, Pandas , Theano , TensorFlow
- Statistical Math for the Algorithms.
- Learning to solve statistics and mathematical concepts.
- Supervised and Unsupervised Learning
- Classification and Regression
- ML Algorithms
- Machine Learning Programming and Use Cases.

The outcomes of this workshop are:

- Understand the components of a Machine Learning algorithm.

- Apply Machine Learning tools to build and evaluate predictors
- How Machine Learning uses computer algorithms to search for patterns in data
- How to uncover hidden themes in large collections of documents using topic modeling
- How to prepare data, deal with missing data and create custom data analysis solutions for different industries
- Familiarity with Python installation, syntax and design

Why Python Is a Perfect Language for Machine Learning?

1. **A great library ecosystem** - A great choice of libraries is one of the main reasons Python is the most popular programming language used for AI. A library is a module or a group of modules published by different sources which include a pre-written piece of code that allows users to reach some functionality or perform different actions. Python libraries provide base level items so developers don't have to code them from the very beginning every time. ML requires continuous data processing, and Python's libraries let us access, handle and transform data. These are some of the most wide spread libraries we can use for ML and AI:
 - Scikit-learn for handling basic ML algorithms like clustering, linear and logistic regressions, regression, classification, and others.
 - Pandas for high-level data structures and analysis. It allows merging and filtering of data, as well as gathering it from other external sources like Excel, for instance.
 - Keras for deep learning. It allows fast calculations and prototyping, as it uses the GPU in addition to the CPU of the computer.
 - TensorFlow for working with deep learning by setting up, training, and utilizing artificial neural networks with massive datasets.
 - Matplotlib for creating 2D plots, histograms, charts, and other forms of visualization.
 - NLTK for working with computational linguistics, natural language recognition, and processing.
 - Scikit-image for image processing.
 - PyBrain for neural networks, unsupervised and reinforcement learning.
 - Caffe for deep learning that allows switching between the CPU and the GPU
 - StatsModels for statistical algorithms and data exploration.

In the PyPI repository, we can discover and compare more python libraries.

2. **A low entry barrier** - Working in the ML and AI industry means dealing with a bunch of data that we need to process in the most convenient and effective way. The low entry barrier allows more data scientists to quickly pick up Python and start using it for AI development without wasting too much effort into learning the language.

In addition to this, there's a lot of documentation available, and Python's community is always there to help out and give advice

3. **Flexibility**- Python for machine learning is a great choice, as this language is very flexible:
 - It offers an option to choose either to use OOPs or scripting.
 - There's also no need to recompile the source code, developers can implement any changes and quickly see the results.
 - Programmers can combine Python and other languages to reach their goals.
4. **Good Visualization Options**- For AI developers, it's important to highlight that in artificial intelligence, deep learning, and machine learning, it's vital to be able to represent data in a human-readable format. Libraries like Matplotlib allow data scientists to build charts, histograms, and plots for better data comprehension, effective presentation, and visualization. Different application programming interfaces also simplify the visualization process and make it easier to create clear reports.

5. **Community Support-** It's always very helpful when there's strong community support built around the programming language. Python is an open-source language which means that there's a bunch of resources open for programmers starting from beginners and ending with pros. A lot of Python documentation is available online as well as in Python communities and forums, where programmers and machine learning developers discuss errors, solve problems, and help each other out. Python programming language is absolutely free as is the variety of useful libraries and tools.
6. **Growing Popularity-**As a result of the advantages discussed above, Python is becoming more and more popular among data scientists. According to Stack Overflow, the popularity of Python is predicted to grow until 2020, at least. This means it's easier to search for developers and replace team players if required. Also, the cost of their work maybe not as high as when using a less popular programming language Data Preprocessing, Analysis & Visualization Machine Learning algorithms don't work so well with processing raw data. Before we can feed such data to an ML algorithm, we must preprocess it. We must apply some transformations on it. With data preprocessing, we convert raw data into a clean data set.

To perform data this, there are 7 techniques -

1. **Rescaling Data** -For data with attributes of varying scales, we can rescale attributes to possess the same scale. We rescale attributes into the range 0 to 1 and call it normalization. We use the Min Max Scaler class from scikit-learn. This gives us values between 0 and 1.
2. **Standardizing Data** -With standardizing, we can take attributes with a Gaussian distribution and different means and standard deviations and transform them into a standard Gaussian distribution with a mean of 0 and a standard deviation
3. **Normalizing Data** -In this task, we rescale each observation to a length of 1 (a unit norm). For this, we use the Normalizer class.
4. **Binarizing Data** -Using a binary threshold, it is possible to transform our data by marking the values above it 1 and those equal to or below it, 0. For this purpose, we use the Binarizer class.
5. **Mean Removal**-We can remove the mean from each feature to center it on zero.
6. **One Hot Encoding** -When dealing with few and scattered numerical values, we may not need to store these. Then, we can perform One Hot Encoding. For k distinct values, we can transform the feature into a k-dimensional vector with one value of 1 and 0 as the rest values.
7. **Label Encoding** -Some labels can be words or numbers. Usually, training data is labelled with words to make it readable. Label encoding converts word labels into numbers to let algorithms work on them

Machine Learning Algorithms:

There are many types of Machine Learning Algorithms specific to different use cases. As we work with datasets, a machine learning algorithm works in two stages. We usually split the data around 20%-80% between testing and training stages. Under supervised learning, we split a dataset into a training data and test data in Python ML. Followings are the Algorithms of Python Machine Learning -

1. Linear Regression-Linear regression is one of the supervised Machine learning algorithms in Python that observes continuous features and predicts an outcome. Depending on whether it runs on a single variable or on many features, we can call it simple linear regression or multiple linear regression. This is one of the most popular Python ML algorithms and often under-appreciated. It assigns optimal weights to variables to create a line $ax+b$ to predict the output. We often use linear regression to estimate real values like a number of calls and costs of houses based on continuous variables. The regression line is the best line that fits $Y=a*X+b$ to denote a relationship between independent and dependent variables.

2. Logistic Regression -Logistic regression is a supervised classification is unique Machine Learning algorithms in Python that find sits use in estimating discrete values like 0/1, yes/no, and true/false. This is based on a given set of independent variables. We use a logistic function to predict the probability of an event and this gives us an output between 0 and 1. Although it says 'regression', this is actually a classification algorithm. Logistic

regression fits data into a logit function and is also called logit regression.

3. Decision Tree -A decision tree falls under supervised Machine Learning Algorithms in Python and comes of use for both classification and regression- although mostly for classification. This model takes an instance, traverses the tree, and compares important features with a determined conditional statement. Whether it descends to the left child branch or the right depends on the result. Usually, more important features are closer to the root. Decision Tree, a Machine Learning algorithm in Python can work on both categorical and continuous dependent variables. Here, we split a population into two or more homogeneous sets. Tree models where the target variable can take a discrete set of values are called classification trees; in these tree structures, leave represent class labels and branches represent conjunctions of features that lead to those class labels. Decision trees where the target variable can take continuous values (typically real numbers) are called regression trees.

4. Support Vector Machine (SVM)-SVM is a supervised classification is one of the most important Machines Learning algorithms in Python, that plots a line that divides different categories of your data. In this ML algorithm, we calculate the vector to optimize the line. This is to ensure that the closest point in each group lies farthest from each other. While you will almost always find this to be a linear vector, it can be other than that. An SVM model is are presentation of the examples as points in space, mapped so that the examples of the separate categories are divided by a clear gap that is as wide as possible. In addition to performing linear classification, SVMs can efficiently perform a non-linear classification using what is called the kernel trick, implicitly mapping their inputs into high-dimensional feature spaces. When data are unlabeled, supervised learning is not possible, and an unsupervised learning approach is required, which attempts to find natural clustering of the data to groups, and then map new data to these formed groups.

5. Naïve Bayes Algorithm - Naive Bayes is a classification method which is based on Bayes' theorem. This assumes independence between predictors. A Naive Bayes classifier will assume that a feature in a class is unrelated to any other. Consider a fruit. This is an apple if it is round, red, and 2.5 inches in diameter. A Naive Bayes classifier will say these characteristics independently contribute to the probability of the fruit being an apple. This is even if features depend on each other. For very large data sets, it is easy to build a Naive Bayesian model. Not only is this model very simple, it performs better than many highly sophisticated classification methods. Naïve Bayes classifiers are highly scalable, requiring a number of parameters linear in the number of variables (features/predictors) in a learning problem. Maximum-likelihood training can be done by evaluating a closed-form expression, which takes linear time, rather than by expensive iterative approximation as used for many other types of classifiers.

6. k NN Algorithm -This is a Python Machine Learning algorithm for classification and regression- mostly for classification. This is a supervised learning algorithm that considers different centurions and uses a usually Euclidean function to compare distance. Then, it analyzes the results and classifies each point to the group to optimize it to place with all closest points to it. It classifies new cases using a majority vote of k of its neighbors. The case it assigns to a class is the one most common among its K nearest neighbors. For this, it uses a distance function. k-NN is a type of instance-based learning, or lazy learning, where the function is only approximated locally and all computation is deferred until classification.

k-NN is a special case of a variable- bandwidth, kernel density "balloon" estimator with a uniform kernel.

7. K-Means Algorithm -k-Means is an unsupervised algorithm that solves the problem of clustering. It classifies data using a number of clusters. The data points inside a class are homogeneous and heterogeneous to peer groups.

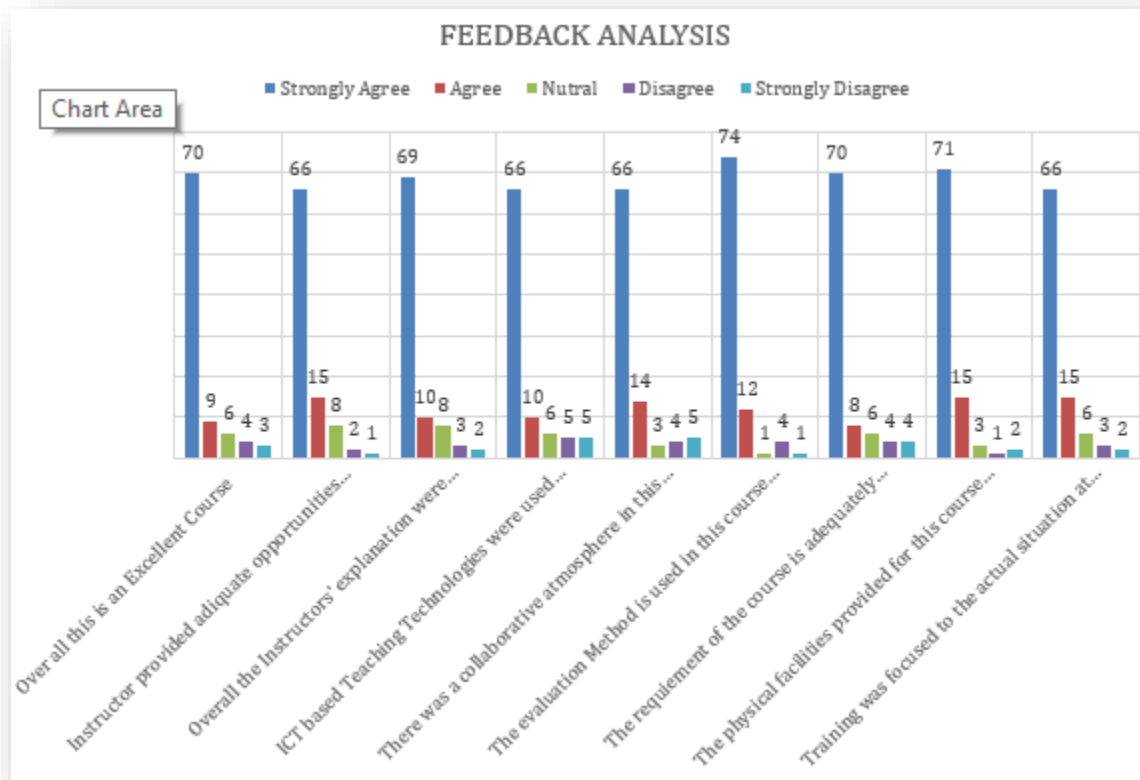
k-means clustering is a method of vector quantization, originally from signal processing, that is popular for cluster analysis in data mining. k -means clustering aims to partition n observations into k-clusters in which each observation belongs to the cluster with the nearest mean, serving as a prototype of the cluster.

k-means clustering is rather easy to apply to even large data sets, particularly when using heuristics such as Lloyd's algorithm. It often is used as a preprocessing step for other algorithms, for example to find a starting configuration. The problem is computationally difficult(NP-hard). k-means originates from signal processing, and still finds use in this domain. In cluster analysis, the k-means algorithm can be used to partition the input data set into k partitions (clusters).

k-means clustering has been used as a feature learning (or dictionary learning) step, in either(semi-)supervised learning or unsupervised learning.

8.Random Forest - A random forest is an ensemble of decision trees. In order to classify every new object based on its attributes, trees vote for class- each tree provides a classification. The classification with the most votes win in the forest. Random forests or random decision forests are an ensemble learning method for classification, regression and other tasks that operates by constructing a multitude of decision trees at training time and outputting the class that is the mode of the classes (classification) or mean prediction (regression) of the individual trees.

Feedback Analysis:



Student List:

SN	ROLL NO	NAME	Remarks
1	11900116005	VAIBHAV KAMANI	Successfully Completed
2	11900116006	TANMAY MISHRA	Successfully Completed

3	11900116007	SWATI SUMAN	Successfully Completed
4	11900116008	SWARNENDU SARKAR	Successfully Completed
5	11900116009	SWARNADEEP CHATTOPADHYAY	Successfully Completed
6	11900116010	SUNNY KUMAR SINGH	Successfully Completed
7	11900116011	SUMIT BANIK	Successfully Completed
8	11900116012	SUDIP MISTRY	Successfully Completed
9	11900116013	SUBHO MONDAL	Successfully Completed
10	11900116014	SUBHKANT KUMAR RAY	Successfully Completed
11	11900116015	SUBHAM PAL	Successfully Completed
12	11900116016	SUBHAM DAS ROY	Successfully Completed
13	11900116017	SRISHTI PRIYA	Successfully Completed
14	11900116018	SOUVIK GHOSH	Successfully Completed
15	11900116019	SOURAVI DEB	Successfully Completed
16	11900116020	SOMEDUTTA DEBNATH	Successfully Completed
17	11900116021	SHREYA BHATTACHARYA	Successfully Completed
18	11900116022	SHRAMANA GHOSH	Successfully Completed
19	11900116023	SHOWGATA CHAKRABORTY	Successfully Completed
20	11900116024	SHAYONI NANDI	Successfully Completed
21	11900116025	SHALINI SENGUPTA	Successfully Completed
22	11900116026	SAURABH KUMAR	Successfully Completed
23	11900116028	SAGAR BANIK	Successfully Completed
24	11900116029	RUPAM DEBNATH	Successfully Completed
25	11900116030	RUDRASISH SARKAR	Successfully Completed
26	11900116031	ROHAN SHAW	Successfully Completed
27	11900116032	RIYA DAM	Successfully Completed
28	11900116033	RAJAN CHOUDHARY	Successfully Completed
29	11900116034	RACHIT KUMAR	Successfully Completed
30	11900116035	PRIYANKA KUMARI	Successfully Completed
31	11900116036	PRASUN ROY CHOWDHURY	Successfully Completed
32	11900116037	PRASENJIT DEY	Successfully Completed
33	11900116038	PRAKASH GUPTA	Successfully Completed
34	11900116039	PRAGYA KHORIA	Successfully Completed
35	11900116040	PAWAN KUMAR PRASAD	Successfully Completed
36	11900116041	PABANI DEB	Successfully Completed
37	11900116042	NUMAAN SULTAN	Successfully Completed
38	11900116043	NISHANT KUMAR DAS	Successfully Completed
39	11900116044	NANDLAL KUMAR	Successfully Completed
40	11900116045	NAGENDRA PRASAD	Successfully Completed
41	11900116046	MOUPIYA BHOWMIK	Successfully Completed
42	11900116047	MOUMITA GHORAI	Successfully Completed
43	11900116048	MOHAMMAD SAIF	Successfully Completed
44	11900116049	MALOBIKA MONDAL	Successfully Completed

45	11900116050	KOUVERI PAUL	Successfully Completed
46	11900116051	KALYANI BALA	Successfully Completed
47	11900116052	KAKOLI BHADRA	Successfully Completed
48	11900116053	JYOTISMITA CHANDA	Successfully Completed
49	11900116054	JAYANTA GHOSH	Successfully Completed
50	11900116055	ISHANI THAPA	Successfully Completed
51	11900116056	HINDOL ROY	Successfully Completed
52	11900116057	GOURAB GHOSH	Successfully Completed
53	11900116058	GHANSHYAM MANDAL	Successfully Completed
54	11900116059	GAURAV SAHADEV	Successfully Completed
55	11900116060	GARGE GHOSH	Successfully Completed
56	11900116061	GANGADHAR MADHAV	Successfully Completed
57	11900116063	DIPTOJYOTI DAS PURKAYASTHA	Successfully Completed
58	11900116064	DIPANKAR MONDAL	Successfully Completed
59	11900116065	DEBJYOTI SAHA	Successfully Completed
60	11900116066	DEBJYOTI SAHA	Successfully Completed
61	11900116067	DEBANKA DAS	Successfully Completed
62	11900116068	CAMELLIA MUKHERJEE	Successfully Completed
63	11900116069	BISHAL DAS	Successfully Completed
64	11900116070	BIKASH BASFORE	Successfully Completed
65	11900116071	BIDISHA GHOSH	Successfully Completed
66	11900116072	ASHMITA GHOSH	Successfully Completed
67	11900116073	ASHISH KUMAR GUPTA	Successfully Completed
68	11900116074	ARUP JYOTI DUTTA	Successfully Completed
69	11900116075	ARPAN MAJUMDER	Successfully Completed
70	11900116076	ARNAB SINHA	Successfully Completed
71	11900116077	ARNAB BAG	Successfully Completed
72	11900116078	ARKA PRAVA CHATTERJEE	Successfully Completed
73	11900116079	ARCHI KUMARI	Successfully Completed
74	11900116080	APOORVA AMAN	Successfully Completed
75	11900116081	APARNA KUMARI	Successfully Completed
76	11900116082	ANURADHA KUMARI SAH	Successfully Completed
77	11900116083	ANUJ KUMAR	Successfully Completed
78	11900116084	ANKITA SWAMI	Successfully Completed
79	11900116085	ANKIT KUMAR JHA	Successfully Completed
80	11900116086	ANIKET SHARMA	Successfully Completed
81	11900116087	ANIKET GHOSH	Successfully Completed
82	11900116088	ANAMIKA	Successfully Completed
83	11900116089	AMLAN SHARMA	Successfully Completed
84	11900116090	AMAN KUMAR PANDEY	Successfully Completed
85	11900116092	ABHISHEK KUMAR YADAV	Successfully Completed
86	11900116093	ABHISHEK BHUTRA	Successfully Completed

87	11900117001	SUSMITA KARMAKAR	Successfully Completed
88	11900117002	SUSHANTA ROY	Successfully Completed
89	11900117003	SUBHAM SARKAR	Successfully Completed
90	11900117004	SAGAR JANA	Successfully Completed
91	11900117005	PAYAL GUPTA	Successfully Completed
92	11900117006	KALYANI KARMAKAR	Successfully Completed



SILIGURI INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Industrial Training Report on Big Data/Hadoop

Training Details:

Training on Big Data / Hadoop

Resource Organization: I & WE

Training Date: 18th January 2018 to 28th January 2018

Venue: SIT, OT&UML Lab

Student: 3rd Year CSE (6th Semester)

Students Enrolled: 95

Students Completed Successfully: 95

Pass Out Year: 2019

Feedback Analysis: Attached

Student List: Attached

Introduction

Hadoop is an open-source framework that allows to store and process big data in a distributed environment across clusters of computers using simple programming models. It is designed to scale up from single servers to thousands of machines, each offering local computation and storage. In the Training provides a quick introduction to Big Data, Map Reduce algorithm, and Hadoop Distributed File System.

Training Objective:

- Upon completion of this course, participants will be able to:
- Understand fundamentals of Concepts in Bigdata and hadoop etc
- Understand fundamentals of Hadoop etc.
- Be able to use the HDFS file system, debug and run simple Java programs for hdfs.
- Be aware of the important topics and principles of software development and write better &more maintainable code
- Be able to program using advanced Java topic like JDBC, Servlets and JSP.

What is Big Data?

Big data means really a big data, it is a collection of large datasets that cannot be processed using traditional computing techniques. Big data is not merely a data, rather it has become a complete subject, which involves various tools, techniques and frameworks.

Advantages of Hadoop:

- Hadoop framework allows the user to quickly write and test distributed systems. It is efficient, and it automatic distributes the data and work across the machines and in turn, utilizes the underlying parallelism of the CPU cores.
- Hadoop does not rely on hardware to provide fault-tolerance and high availability (FTHA), rather Hadoop library itself has been designed to detect and handle failures at the application layer.

- Servers can be added or removed from the cluster dynamically and Hadoop continues to operate without interruption.
- Another big advantage of Hadoop is that apart from being open source, it is compatible on all the platforms since it is Java based.

Training Methodology:

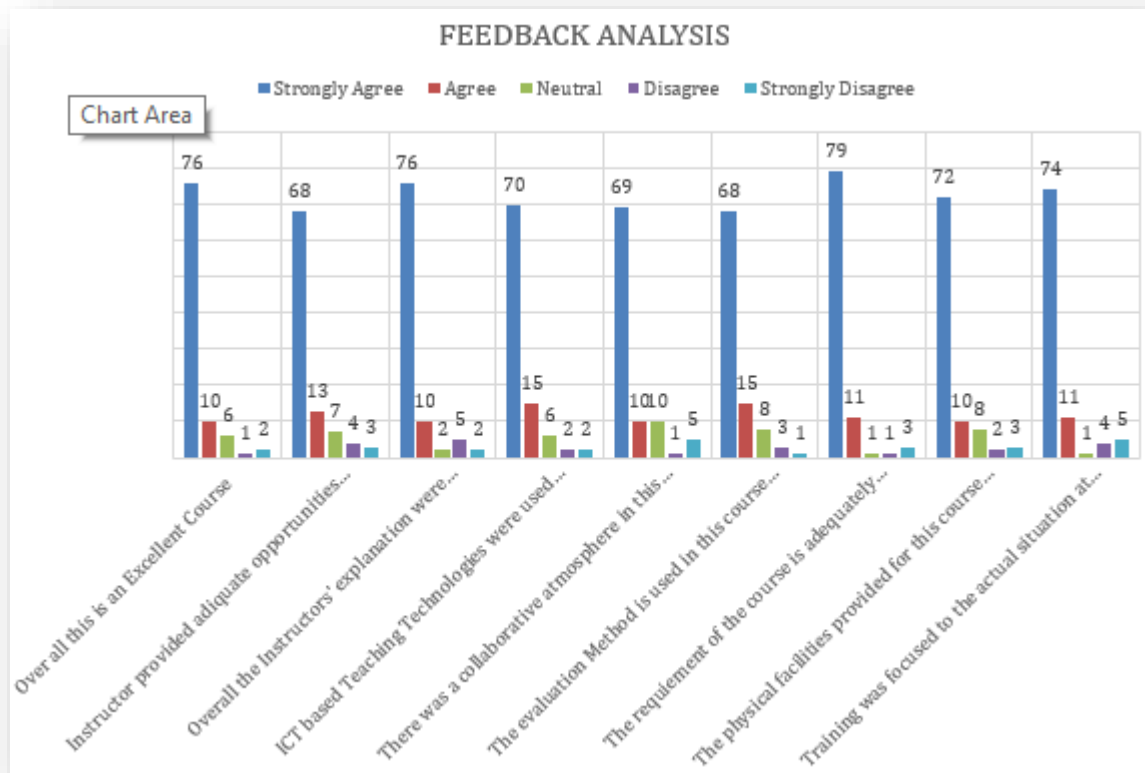
- Hands on practice approach to training, behavioral model of training would be practiced.
- During the training, the Trainee would implement a project related to respective modules.
- Commitment to Individual growth and constant evaluation.
- Implementation of programming techniques through a Project.

Summary of the program:

The following points can be noted from the program.

- ❖ At the beginning of the training trainer has clearly described the basic Introduction to java its application in industries in different areas.
- ❖ Students had done many data analysis algorithm by themselves during the trainings.
- ❖ During the training some students raised their queries and the trainer had explained all the quarries of the students.
- ❖ At the end of the training an online exam was conducted.
- ❖ As per the feedback received from the students end, the entire session was really fruitful
- ❖ and enjoyable and the students have learned framework of Hadoop.

Feedback analysis for the training:



Student List:

SN	ROLLNO	NAME	Remarks
1	11900115001	ABHISHEK	Successfully Completed
2	11900115002	ABHISHEK KUMAR GUPTA	Successfully Completed
3	11900115003	ABINASH KUMAR MAHATO	Successfully Completed
4	11900115004	ADITYA KUMAR GHOSH	Successfully Completed
5	11900115005	AMLAN DEY	Successfully Completed
6	11900115006	ANKIT MONDAL	Successfully Completed
7	11900115007	ANKITA BOSE	Successfully Completed
8	11900115008	ANUJ DAHAL	Successfully Completed
9	11900115009	APURVA GUPTA	Successfully Completed
10	11900115010	ARCHANA PRASAD	Successfully Completed
11	11900115011	AVIJIT JANA	Successfully Completed
12	11900115012	BIBHOR KUMAR JHA	Successfully Completed
13	11900115013	BIKRAM MODAK	Successfully Completed
14	11900115014	BIVEK DAS	Successfully Completed
15	11900115015	DEBAKAR ROY	Successfully Completed
16	11900115016	DEBANITA KUNDU	Successfully Completed
17	11900115017	DEBASMITA PAL	Successfully Completed
18	11900115018	DEBOPRIYO BHATTACHARJEE	Successfully Completed
19	11900115019	DIYA SAHA	Successfully Completed
20	11900115020	DONA DAS	Successfully Completed
21	11900115021	DWIPJYOTI ROY	Successfully Completed
22	11900115023	GOURAB DEY	Successfully Completed
23	11900115024	JITEN AHUJA	Successfully Completed
24	11900115025	JOY TALUKDAR	Successfully Completed
25	11900115026	JUHI KUMARI	Successfully Completed
26	11900115027	KOUSTAV CHAKRABARTY	Successfully Completed
27	11900115028	KUNDAN KUMAR SINGH	Successfully Completed
28	11900115029	LABONI DASGUPTA	Successfully Completed
29	11900115030	MAINAK MONDAL	Successfully Completed
30	11900115031	MANOJIT DAS	Successfully Completed
31	11900115032	MD FURKAN	Successfully Completed
32	11900115033	MD KOSIS IQBAL SK	Successfully Completed
33	11900115034	MONIDEEP BANERJEE	Successfully Completed
34	11900115035	MRIGESH KUMAR SHARMA	Successfully Completed
35	11900115036	NAMRANIL ROYNATH	Successfully Completed
36	11900115037	NIKETA KARMAKAR	Successfully Completed
37	11900115038	NIKHIL KUMAR PRASAD	Successfully Completed
38	11900115039	NILANK NIKHIL	Successfully Completed
39	11900115040	NISHANT KUMAR DUBEY	Successfully Completed
40	11900115041	NITIN KUMAR	Successfully Completed
41	11900115042	PAWAN KUMAR MISHRA	Successfully Completed
42	11900115043	POOJA DEBNATH	Successfully Completed

43	11900115044	POOJA KUMARI	Successfully Completed
44	11900115045	PRABHANGSHU DEB	Successfully Completed
45	11900115046	PRABIR AICH	Successfully Completed
46	11900115047	PRANAV PUSHKAR	Successfully Completed
47	11900115048	PRANITA CHHETRI	Successfully Completed
48	11900115049	PRASUN BHOWMICK	Successfully Completed
49	11900115050	PRATYUSHA DEY SARKAR	Successfully Completed
50	11900115051	PRAVEEN KUMAR CHHETRI	Successfully Completed
51	11900115052	PRIYAM SAHA	Successfully Completed
52	11900115053	PROTIK BOSE	Successfully Completed
53	11900115054	PUBALI GHOSH	Successfully Completed
54	11900115055	PURSOTAM SINGH	Successfully Completed
55	11900115056	RAJ KUMAR ANAL	Successfully Completed
56	11900115057	RAJ MITTAL	Successfully Completed
57	11900115058	RAJIB KUMAR SINGH	Successfully Completed
58	11900115059	RAJIV CHOWDHURY	Successfully Completed
59	11900115060	RITWIK MONDAL	Successfully Completed
60	11900115061	ROHINI KUMARI	Successfully Completed
61	11900115062	RUDRANIL MAITRA	Successfully Completed
62	11900115063	SANA FARHIN	Successfully Completed
63	11900115064	SANDEEP PRASAD JAISWAL	Successfully Completed
64	11900115065	SANGITA DUTTA	Successfully Completed
65	11900115066	SANTANIL BASAK	Successfully Completed
66	11900115067	SANTARPAN SINHA	Successfully Completed
67	11900115068	SAYON BATABYAL	Successfully Completed
68	11900115069	SHANTAM KUMAR	Successfully Completed
69	11900115070	SHEETAL CHOUHAN	Successfully Completed
70	11900115071	SHIKHA SRIVASTAV	Successfully Completed
71	11900115073	SHREYASI PAUL	Successfully Completed
72	11900115074	SHRUTI KIRTI	Successfully Completed
73	11900115075	SHUBHAM DEBNATH	Successfully Completed
74	11900115076	SHUBHAM DEY	Successfully Completed
75	11900115078	SHYAMSUNDAR GUPTA	Successfully Completed
76	11900115079	SK MD TOFIKUDDIN	Successfully Completed
77	11900115080	SONAKSHI BHATTACHARJEE	Successfully Completed
78	11900115081	SONI KUMARI SAHA	Successfully Completed
79	11900115082	SOUNAK DAS	Successfully Completed
80	11900115083	SOURAV GHOSH	Successfully Completed
81	11900115084	SUBHAJIT DAS	Successfully Completed
82	11900115085	SUBHAM DASTIDAR	Successfully Completed
83	11900115086	SUBHAM SARDA	Successfully Completed
84	11900115087	SUCHISMITA NAG	Successfully Completed
85	11900115088	SUDARSHAN BOSE	Successfully Completed
86	11900115089	SULAGNA SARKAR	Successfully Completed
87	11900115090	SUSHIL KUMAR GUPTA	Successfully Completed
88	11900115091	SUSREE BANERJEE	Successfully Completed
89	11900115092	SYED MOHAMMED HASSAN AKIF	Successfully Completed
90	11900115093	TANMAY KUMAR	Successfully Completed

91	11900115094	VIPUL KALYANI	Successfully Completed
92	11900116001	TRIBID KUNDU	Successfully Completed
93	11900116002	SNEHASISH GHOSH	Successfully Completed
94	11900116003	SANJAY KUMAR PRASAD	Successfully Completed
95	11900116004	RAHUL DASGUPTA	Successfully Completed



SILIGURI INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Industrial Training Report on Big Data/Hadoop

Training Details:

Training on Big Data / Hadoop

Resource Organization: I & WE

Training Date: 16th July 2017 to 17th July 2018

Venue: SIT, OT&UML Lab

Student: 3rd Year CSE (6th Semester)

Students Enrolled: 87

Students Completed Successfully: 87

Pass Out Year: 2018

Feedback Analysis: Attached

Student List: Attached

Introduction

Hadoop is an open-source framework that allows to store and process big data in a distributed environment across clusters of computers using simple programming models. It is designed to scale up from single servers to thousands of machines, each offering local computation and storage. In the Training provides a quick introduction to Big Data, Map Reduce algorithm, and Hadoop Distributed File System.

Training Objective:

- Upon completion of this course, participants will be able to:
- Understand fundamentals of Concepts in Bigdata and hadoop etc
- Understand fundamentals of Hadoop etc.
- Be able to use the HDFS file system, debug and run simple Java programs for hdfs.
- Be aware of the important topics and principles of software development and write better &more maintainable code
- Be able to program using advanced Java topic like JDBC, Servlets and JSP.

What is Big Data?

Big data means really a big data, it is a collection of large datasets that cannot be processed using traditional computing techniques. Big data is not merely a data, rather it has become a complete subject, which involves various tools, techniques and frameworks.

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- Hadoop framework allows the user to quickly write and test distributed systems. It is efficient, and it automatic distributes the data and work across the machines and in turn, utilizes the underlying parallelism of the CPU cores.
- Hadoop does not rely on hardware to provide fault-tolerance and high availability (FTHA), rather Hadoop library itself has been designed to detect and handle failures at the application layer.

- Servers can be added or removed from the cluster dynamically and Hadoop continues to operate without interruption.
- Another big advantage of Hadoop is that apart from being open source, it is compatible on all the platforms since it is Java based.

Training Methodology:

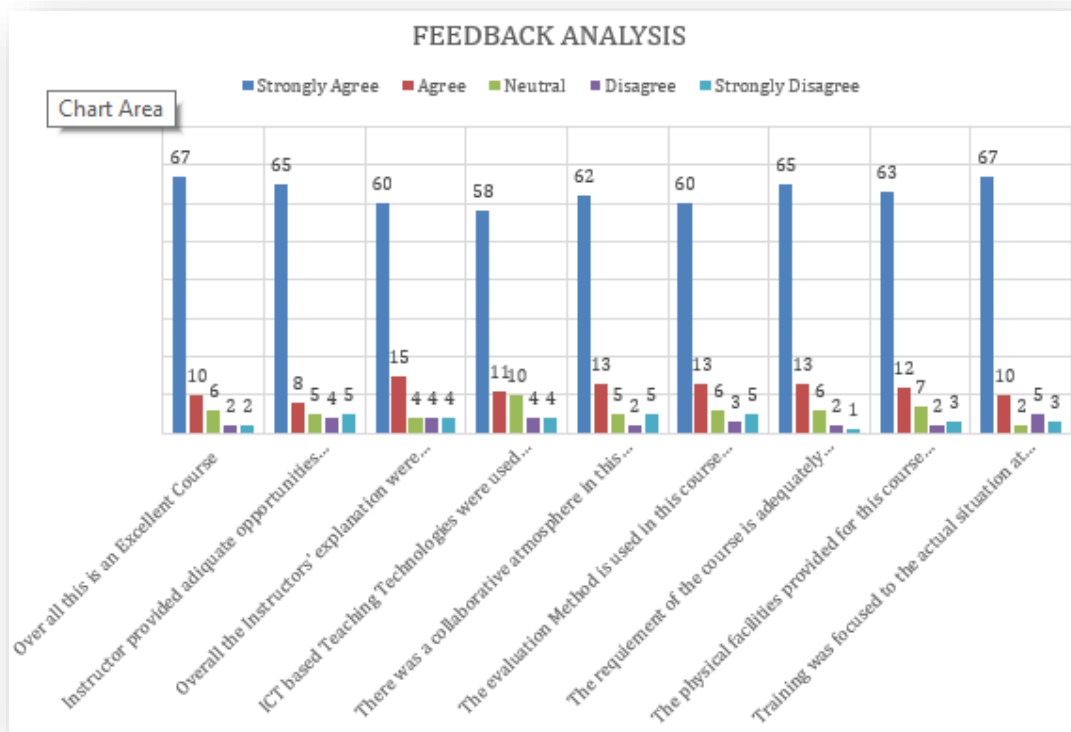
- Hands on practice approach to training, behavioral model of training would be practiced.
- During the training, the Trainee would implement a project related to respective modules.
- Commitment to Individual growth and constant evaluation.
- Implementation of programming techniques through a Project.

Summary of the program:

The following points can be noted from the program.

- ❖ At the beginning of the training trainer has clearly described the basic Introduction to java its application in industries in different areas.
- ❖ Students had done many data analysis algorithm by themselves during the trainings.
- ❖ During the training some students raised their queries and the trainer had explained all the quarries of the students.
- ❖ At the end of the training an online exam was conducted.
- ❖ As per the feedback received from the students’ end, the entire session was really fruitful
- ❖ and enjoyable and the students have learned framework of Hadoop.

Feedback analysis for the training:



Student List:

SN	ROLL NO.	NAME	Remarks
1	11900113048	RATNADEEP BHATTACHARYYA	Successfully Completed
2	11900114001	ABHIGYAN KUMAR	Successfully Completed
3	11900114002	ABHILASH KUMAR DAS	Successfully Completed
4	11900114003	ABHIMANNYU SINGH	Successfully Completed
5	11900114004	AGNIV GHOSH	Successfully Completed
6	11900114005	AJAY KUMAR	Successfully Completed
7	11900114006	AMAN PRASAD	Successfully Completed
8	11900114007	AMRITA	Successfully Completed
9	11900114008	ANANYA	Successfully Completed
10	11900114009	ANANYA DAS	Successfully Completed
11	11900114010	ANANYA DASGUPTA	Successfully Completed
12	11900114011	ANIRUDDHA ROY	Successfully Completed
13	11900114012	ANKAN MITRA	Successfully Completed
14	11900114013	ARGHA DEEP SINHA	Successfully Completed
15	11900114014	ARNAB DEY SARKAR	Successfully Completed
16	11900114015	BABAI MAHAMMAD	Successfully Completed
17	11900114016	BHASWATI CHAKRABORTY	Successfully Completed
18	11900114017	CHANCHAL KUMAR	Successfully Completed
19	11900114018	DEBARATI DUTTA	Successfully Completed
20	11900114019	DEEP SHIKHA	Successfully Completed
21	11900114020	DEEPAK KUMAR	Successfully Completed
22	11900114021	EHTESHAM AHMED	Successfully Completed
23	11900114022	GARGI SAU	Successfully Completed
24	11900114024	IVY HALDAR	Successfully Completed
25	11900114025	JAVED AKHTAR ANSARI	Successfully Completed
26	11900114026	JOYRAJ BISWAS	Successfully Completed
27	11900114027	JUHIBA DUTTA	Successfully Completed
28	11900114028	KARUNIK DAS	Successfully Completed
29	11900114029	KAUSHIK DUTTA	Successfully Completed
30	11900114030	MANISH MISHRA	Successfully Completed
31	11900114031	MAYANK MISHRA	Successfully Completed
32	11900114032	MD MUSTAF HUSSAIN	Successfully Completed
33	11900114033	MD ZAFAR HUSSAIN	Successfully Completed
34	11900114034	MEGHA AGARWAL	Successfully Completed
35	11900114035	MISBAHUL HUDA	Successfully Completed
36	11900114036	MRIGANKA ROY	Successfully Completed
37	11900114037	MRIGANKA SHEKHAR PAUL	Successfully Completed
38	11900114038	OLYVIA GHOSH	Successfully Completed
39	11900114039	PAYEL SARKAR	Successfully Completed
40	11900114040	PINTU KUSHWAHA	Successfully Completed

41	11900114041	PRAJAK CHAKRABORTY	Successfully Completed
42	11900114042	PRAKASH CHATTERJEE	Successfully Completed
43	11900114043	PRATIVA SHARMA	Successfully Completed
44	11900114044	PRITAM SINHA	Successfully Completed
45	11900114046	PURBITA BISWAS	Successfully Completed
46	11900114047	RAHUL RAJ	Successfully Completed
47	11900114048	RAJA NAND SHARMA	Successfully Completed
48	11900114049	RAKESH KUMAR	Successfully Completed
49	11900114050	RISAB BISWAS	Successfully Completed
50	11900114051	RISHITA CHOWDHURY	Successfully Completed
51	11900114052	RIYA MITRA	Successfully Completed
52	11900114053	RUPAM MITRA	Successfully Completed
53	11900114054	SACHIN KUMAR SAHA	Successfully Completed
54	11900114055	SAGAR BHATTARAI	Successfully Completed
55	11900114056	SAGARIKA MITRA	Successfully Completed
56	11900114057	SAHITYA KAUSHIK	Successfully Completed
57	11900114058	SAMIK ANWAR	Successfully Completed
58	11900114059	SAMRAT BHATTACHARJEE	Successfully Completed
59	11900114060	SANDIPAN CHAKRABORTY	Successfully Completed
60	11900114061	SANGAM GURUNG	Successfully Completed
61	11900114062	SANTANU RAKSHIT	Successfully Completed
62	11900114063	SAPTARSHI GHOSH	Successfully Completed
63	11900114064	SAYAN CHAKRABORTY	Successfully Completed
64	11900114065	SHALINI PRADHAN	Successfully Completed
65	11900114066	SHALINI ROY CHOWDHURY	Successfully Completed
66	11900114067	SHASHI KANT PATEL	Successfully Completed
67	11900114068	SHIRSANA GHATAK	Successfully Completed
68	11900114069	SNEHA PARIJAAT	Successfully Completed
69	11900114070	SOHAM SARKAR	Successfully Completed
70	11900114071	SOURAVENDU NANDY	Successfully Completed
71	11900114072	SOUVIK BISWAS	Successfully Completed
72	11900114073	SRIJA GHOSH	Successfully Completed
73	11900114074	SUBHAM GUHA	Successfully Completed
74	11900114075	SUBHOJIT KUNDU	Successfully Completed
75	11900114076	SUDIPTA SAHA	Successfully Completed
76	11900114077	SURAJ SHARMA	Successfully Completed
77	11900114078	SURAJIT KUMAR DAS	Successfully Completed
78	11900114079	SWARNAVA MUKHERJEE	Successfully Completed
79	11900114080	SWEETY	Successfully Completed
80	11900114081	UJJAL DAS	Successfully Completed
81	11900114082	VINITA KUMARI	Successfully Completed
82	11900114086	ANIRBAN HALDAR	Successfully Completed
83	11900115095	ADRIJA PAUL	Successfully Completed
84	11900115096	BINDHYA MANGAR	Successfully Completed
85	11900115097	POOJA UPADHYAY	Successfully Completed

86	11900115098	RAJAT MUKHIA	Successfully Completed
87	11900115099	SHRADHANJALI PRADHAN	Successfully Completed



SILIGURI INSTITUTE OF TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
Industrial Training Report on Advanced JAVA

Training Details:

Training on Big Data / Hadoop

Resource Organization: NSIC

Training Date: 1st August 2016 to 12th August 2016

Venue: SIT, Programming Lab I/ SIT, Programming Lab II/OT&UML Lab

Student: 3rd Year CSE (6th Semester)

Students Enrolled: 70

Students Completed Successfully: 70

Pass Out Year: 2017

Feedback Analysis: Attached

Student List: Attached

Introduction:

Apart from University requirement, Java is also a pre-requisite for learning latest technologies like Android and Big Data. In order to prepare and make students ready for industry Computer science department has carved out a course that specifically aligns with industry requirements and conducted by industry experts.

In this training session students learned basic object oriented concepts such as inheritance, encapsulation, and abstraction. They learn how to create and use simple Java classes containing arrays, loops, and conditional constructs. They also learn to use and manipulate object references, and to write simple error handling code. They also learned some advance topic like JDBC connectivity, JSP, Servlets.

Training Objective:

Upon completion of this course, participants will be able to:

- Understand fundamentals of Java programming such as variables, conditional and iterative execution, methods, etc
- Understand fundamentals of object-oriented programming using Java, including defining classes, invoking methods, using class libraries, etc.
- Be able to use the Java SDK environment to create, debug and run simple Java programs
- Be aware of the important topics and principles of software development and write better & more maintainable code
- Be able to program using advanced Java topic like JDBC, Servlets and JSP .

Training Methodology:

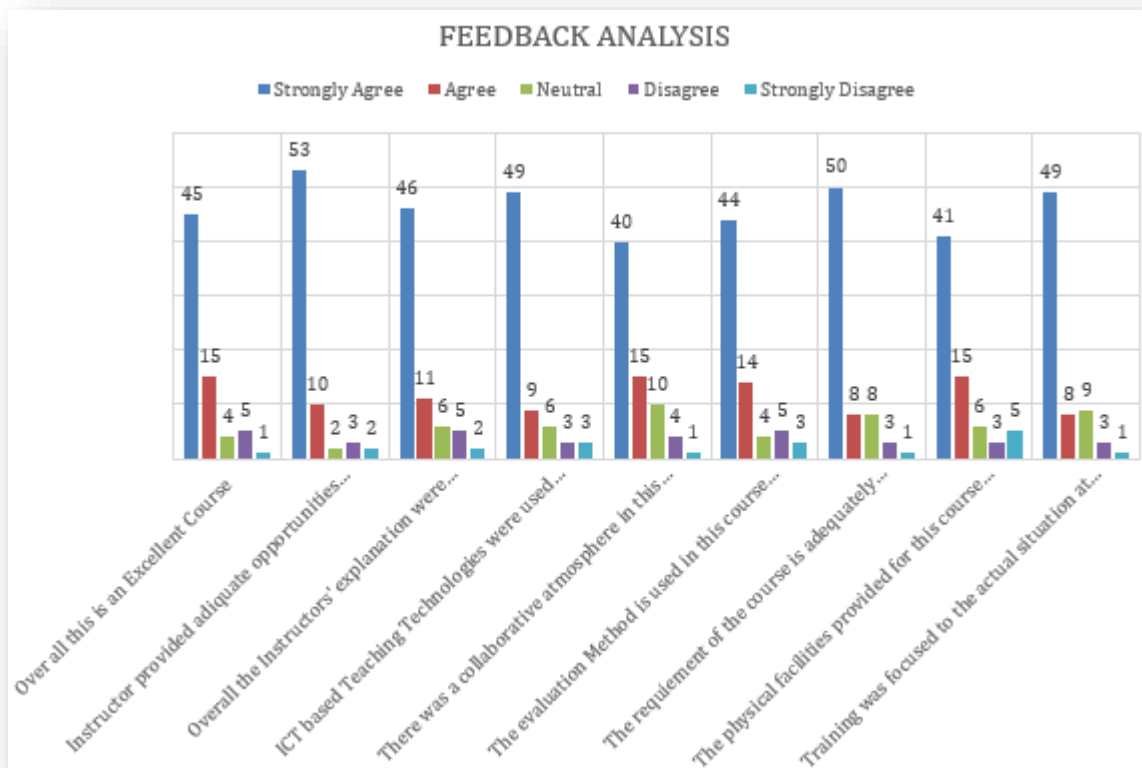
- Online on approach to training, behavioral model of training would be practiced.
- During the training, the Trainee would implement a project related to respective modules.
- Commitment to Individual growth and constant evaluation.
- Implementation of programming techniques through a Project.

Summary of the program:

The following points can be noted from the program.

- ❖ At the beginning of the training trainer has clearly described the basic Introduction to, OOPs programming and java its application in industries in different areas with the students.
- ❖ Students had done many programming by themselves during the trainings.
- ❖ During the training some students raised their queries and the trainer had explained all the quarries of the students.
- ❖ At the end of the training an online exam was conducted.
- ❖ As per the feedback received from the students end, the entire session was really fruitful
- ❖ and enjoyable and the students have learned many things about Java

Feedback analysis for the training:



Student List:

SN	ROLL NO.	NAME	Remarks
1	11900113001	ABHISHEK DEY	Successfully Completed
2	11900113002	ADITYA SAHA	Successfully Completed
3	11900113003	AKANKSHA KUMARI	Successfully Completed
4	11900113004	AKHILESH SINGH	Successfully Completed
5	11900113005	AMIT KUMAR	Successfully Completed
6	11900113007	AMRITA KUNDU	Successfully Completed
7	11900113008	ANGSHUMAN HALDER	Successfully Completed
8	11900113009	ANIRBAN DUTTA	Successfully Completed
9	11900113011	ANKITA GUPTA	Successfully Completed
10	11900113012	ANURAG SHARMA	Successfully Completed
11	11900113013	AYUSH AMAN	Successfully Completed
12	11900113014	BASANT RAJ	Successfully Completed
13	11900113016	BHAWESH PRASAD	Successfully Completed
14	11900113017	BINITA AGARWAL	Successfully Completed
15	11900113018	BISWAJIT DOLUI	Successfully Completed
16	11900113019	CHIRANJIB MUKHERJEE	Successfully Completed
17	11900113020	GANESH CHANDRA SAHA	Successfully Completed
18	11900113021	JAYDEET KARMAKAR	Successfully Completed
19	11900113022	JUHI RANI	Successfully Completed
20	11900113023	JYOTI SINHA	Successfully Completed
21	11900113024	KARISHMA KUMARI	Successfully Completed
22	11900113025	KRITIKA BIBHU	Successfully Completed
23	11900113026	KUMAR NISHANT	Successfully Completed
24	11900113027	KUNAL KUMAR	Successfully Completed
25	11900113028	MILAN SHIT	Successfully Completed
26	11900113030	MOHAMMAD MAYAR ALAM	Successfully Completed
27	11900113031	MONALISA SINHA	Successfully Completed
28	11900113032	MRINAL BARMAN	Successfully Completed
29	11900113033	NEHA GOYAL	Successfully Completed
30	11900113034	NEHA SINGH	Successfully Completed
31	11900113035	NIRAJ SONAR	Successfully Completed
32	11900113036	PRABHAKAR PAUL	Successfully Completed
33	11900113037	PRAGYA KUMARI	Successfully Completed
34	11900113038	PRASANJIT BANIK	Successfully Completed
35	11900113039	PRITAM KUMAR GHOSH	Successfully Completed
36	11900113040	PRITI KUMARI	Successfully Completed
37	11900113041	PRIYANKA KUMARI	Successfully Completed
38	11900113042	PRONIL CHAKRABORTY	Successfully Completed
39	11900113043	PUJA HALDER	Successfully Completed
40	11900113044	PUJA PANDEY	Successfully Completed
41	11900113045	PURBASHA MAJUMDER	Successfully Completed
42	11900113046	RAJ KUMAR MANDAL	Successfully Completed
43	11900113047	RASHMI GUPTA	Successfully Completed

44	11900113050	RICHA AGARWAL	Successfully Completed
45	11900113051	ROHIT KUMAR JAISWAL	Successfully Completed
46	11900113052	SADAF FARHEEN	Successfully Completed
47	11900113055	SHISHU KUMAR PAL	Successfully Completed
48	11900113056	SHOMIK PAUL	Successfully Completed
49	11900113057	SHRAMANA ROY	Successfully Completed
50	11900113058	SHRUTI	Successfully Completed
51	11900113059	SHUBHAM SAGAR	Successfully Completed
52	11900113060	SHUBHAM VERMA	Successfully Completed
53	11900113061	SON JUHI	Successfully Completed
54	11900113062	SOUVIK ROY	Successfully Completed
55	11900113063	SRADDHA CHAKRABORTY	Successfully Completed
56	11900113064	SRISTY AGARWAL	Successfully Completed
57	11900113065	SRITAMA GUPTA	Successfully Completed
58	11900113066	SUBHAM PANDEY	Successfully Completed
59	11900113067	SUBHANJANA SARKAR	Successfully Completed
60	11900113068	SUJIT ROY	Successfully Completed
61	11900113069	SUMAN KUMAR	Successfully Completed
62	11900113070	SUMITA DEY	Successfully Completed
63	11900113071	SUNNY KUMAR	Successfully Completed
64	11900113072	TORSHA SARKAR	Successfully Completed
65	11900113073	VIKASH CHAND SINGH	Successfully Completed
66	11900113074	VISHAL GAURAV	Successfully Completed
67	11900113075	VIVEK KUMAR SINGH	Successfully Completed
68	11900114083	ANJU KUMARI PRASAD	Successfully Completed
69	11900114084	SEVIKA GUPTA	Successfully Completed
70	11900114085	SUDESHNA GHOSH	Successfully Completed



West Bengal State Electricity Distribution Company Limited

(A Govt. of W.B. Enterprise)

Human Resource Development Department

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E-mail: hrdd.wbsecl@gmail.com

WBSEDCL

Office Order NO: GM/HRD/VAC/WINTER/2019-20/08

Dated: 09.12.2019

The following students are hereby directed to report to the following Officers for undergoing Training as per letter issued by the Authorities of the respective Institutes/Colleges.

Sl. No	Name of the Student	Institute/ College	Discipline/ Department	Period of Training		Officer to whom Report
				Date of commencement	Date of completion	
1.	AMARDYUTI BASU	Techno India University, W.B.	Electrical Engineering (3rd Year)	10.01.2020 (10:00 AM)	24.01.2020.	DIVISIONAL MANAGER BIDHANNAGAR—I DIVISION, WBSEDCL CONTACT: 7449304441- AM(HR&A) 033 2367- 0033
2.	ABHIK ROY					
3.	MOHAN DAS					
4.	VIKAS KUMAR					
5.	ABHISHEK DAS	Techno India University, W.B.	Electrical Engineering (3rd Year)	27.12.2019 (10:00 AM)	10.01.2020.	DIVISIONAL MANAGER SERAMPORE DIVISION, WBSEDCL CONTACT: 7449303451-AM(HR&A)
6.	POUSALI SARKAR					
7.	PARIJIT CHOUDHURY					
8.	SUPRIYO SET					
9.	PRATOSH KUMAR JHA	Techno Main Polytechnic, Salt Lake	Electrical Engineering (3rd Year)	03.01.2020 (10:00 AM)	17.01.2020	DIVISIONAL MANAGER, NEW TOWN DIVISION, WBSEDCL CONTACT: 9434464593- DM
10.	MAYUKH SAHA					
11.	SREEJIT GUHA THAKURTA					
12.	ANIRBAN MAJI					
13.	SUDIPTA SAU	Netaji Subhash Engineering College	Electrical Engineering (3rd Year)	06.01.2020 (10:00 AM)	20.01.2020.	DIVISIONAL MANAGER, NEW TOWN DIVISION, WBSEDCL CONTACT: 9434464593- DM
14.	ROHAN KR SINGH					
15.	SOUMODEEP PAKHIRA					
16.	TANMOY SENGUPTA					
17.	GOURAB SANTRA	Institute of Engineering & Management	Electrical Engineering (3rd Year)	06.01.2020 (10:00 AM)	20.01.2020.	DIVISIONAL MANAGER BIDHANNAGAR—I DIVISION, WBSEDCL CONTACT: 7449304441- AM(HR&A) 033 2367- 0033
18.	ARUNADITYA KUNDU					
19.	ABHIJIT POLLEY					
20.	SAKET SUMAN					
21.	RAUNEET SINGH	Institute of Engineering & Management	Electrical Engineering (3rd Year)	06.01.2020 (10:00 AM)	20.01.2020.	DIVISIONAL MANAGER BIDHANNAGAR—I DIVISION, WBSEDCL CONTACT: 7449304441- AM(HR&A) 033 2367- 0033
22.	ANKIT SINGH					
23.	VIVEK KUMAR VERMA					
24.	NIDHI SINGH					
25.	MONI KUMARI	Institute of Engineering & Management	Electrical Engineering (3rd Year)	02.01.2020 (10:00 AM)	16.01.2020	DIVISIONAL MANAGER, NEW TOWN DIVISION, WBSEDCL CONTACT: 9434464593- DM
26.	ARITRA BISWAS					
27.	AVIRUP MUKHERJEE					
28.	PARTHA PRATIM BHADRA					
29.	ABHIK DEWASI	Institute of Engineering & Management	Electrical Engineering (3rd Year)	03.01.2020 (10:00 AM)	17.01.2020	DIVISIONAL MANAGER, BIDHANNAGAR-II DIVISION, WBSEDCL PHONE NO : 7449304491- AM (HR&A) 033 2576-7258
30.	SARTHAK BERA					
31.	SAMBHUNATH MANDAL					
32.	SAYAN DEBNATH					
33.	VIKASH KUMAR	Heritage Institute of Technology	Electrical Engineering (3rd Year)	23.12.2019 (10:00 AM)	06.01.2020.	DIVISIONAL MANAGER HOWRAH-I DIVISION, WBSEDCL CONTACT: 7449304871- AM(HR&A) 033 2637 6469
34.	VED PRAKASH					
35.	UMESH KUMAR DUBEY					
36.	AYAN KUMAR SEN					
37.	DIPANJAN MOJUMDER	Heritage Institute of Technology	Electrical Engineering (3rd Year)	26.12.2019 (10:00 AM)	09.01.2020.	DIVISIONAL MANAGER BEHALA DIVISION, WBSEDCL CONTACT: 7449304091- AM(HR&A) 033 2480-8367
38.	ANSHU KUMAR RAKSHIT					
39.	VINEET KUMAR					
40.	SABYASACHI KUNDU					
41.	RITESH KUMAR	B. P. Poddar Institute of Management and Technology	Electrical Engineering (3rd Year)	26.12.2019 (10:00 AM)	09.01.2020.	DIVISIONAL MANAGER NAIHATI DIVISION, WBSEDCL CONTACT: 7449304741 AM(HR&A)
42.	RUHIT KUMAR					
43.	RITAM TALUKDER					
44.	AMRITA DAS					
45.	TAMAGHNA CHATTERJEE	Siliguri Institute of Technology	Electrical Engineering (3rd Year)	26.12.2019 (10:00 AM)	09.01.2020.	DIVISIONAL MANAGER SILIGURI TOWN DIVISION, WBSEDCL CONTACT: 7449301122- AM (HR&A)
46.	KANSTAV KUMAR PRASAD					
47.	SURAJ KUMAR MAHARAJ					
48.	SUBIR GHOSH					
49.	SNEHA PAUL					
50.	BISWAJIT KUMAR LASKAR					
51.	ARGHYA DEEP SAHA					
52.	RAHUL DUTTA	Siliguri Institute of Technology	Electrical Engineering (3rd Year)	26.12.2019 (10:00 AM)	09.01.2020.	DIVISIONAL MANAGER BANKURA DIVISION, WBSEDCL CONTACT: 7449305515- AM (HR&A) 03242 250272

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West Bengal State Electricity Distribution Company Limited

(A Govt. of W.B. Enterprise) Human Resource Development Department

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E-mail : hrdd.wbsedcl@gmail.com

WBSIEDCL

Sl. No	Name of the Student	Institute/ College	Discipline/ Department	Period of Training		Officer to whom Report
				Date of commencement	Date of completion	
53.	OJAS PAREEK	Indian Institute of Engineering Science and Technology, Shibpur	Electrical Engineering (3rd Year)	16.12.2019 (10.00 a.m)	30.12.2019	PROJECT MANAGER JALDHAKA HYDEL PROJECT, WBSIEDCL CONTACT: 9434006330- PM
54.	MAYANK ORAON					
55.	SUBHRAJIT DEY	Kalinga Institute of Industrial Technology	Electrical Engineering (3rd Year)	16.12.2019 (10.00 a.m)	30.12.2019	DIVISIONAL MANAGER BARASAT DIVISION, WBSIEDCL CONTACT: 7449304641- AM (HR&A) 033 2552-3661
56.	SNEHA ROY		EEE (3rd Year)			
57.	ANTARA PAL	Gurunanak Institute of Technology	Electrical Engineering (3rd Year)	23.12.2019 (10.00 a.m)	06.01.2020	PROJECT MANAGER TEESTA CANAL FALL HYDEL PROJECT, WBSIEDCL CONTACT: 7449300631- PM
58.	ANIRUP DEY					
59.	ANKIT PRASAD					
60.	SUCHANDRA PAUL					
61.	SUBHARSHI ROY	Gurunanak Institute of Technology	Diploma in Electrical Engineering (3rd Year)	20.01.2020 (10:00 AM)	27.01.2020	ACE & PSIC, PURULIA PUMP STORAGE PROJECT, WBSIEDCL CONTACT NO : 8170043836 - HR&A
62.	SARNENDU SARKAR					
63.	SOUMIK MANDAL					
64.	DEBANJAN CHATTERJEE					
65.	SODIP MAJI					
66.	BIKRAM DAS					
67.	SUDIP DAS					
68.	SUSOVAN MAL	Bengal Institute of Technology & Management, Santiniketan	Electrical Engineering (3rd Year)	08.01.2020 (10:00 AM)	22.01.2020	PROJECT MANAGER TEESTA CANAL FALL HYDEL PROJECT, WBSIEDCL CONTACT: 7449300631- PM
69.	SUBHANKAR GIRI					
70.	PAYEL DAS					
71.	DIPTANUJ DAS					
72.	SUBHASISH DEY	Narula Institute of Technology	Electrical Engineering (4th Year)	20.12.2019 (10.00 a.m)	03.01.2020	DIVISIONAL MANAGER ALIPURDUAR DIVISION, WBSIEDCL CONTACT: 7449301721- AM (HR&A) 03564-258600
73.	HIMANGSHU ROY	S. N. Bose Government Polytechnic, Ratua, Malda	Electrical Engineering (3rd Year)	23.12.2019 (10.00 a.m)	06.01.2020	DIVISIONAL MANAGER SOUTH MALDA DIVISION, WBSIEDCL CONTACT: 7449302651- AM (HR&A) 03512-253591
74.	BANDHA ORAON					
75.	SANJU BALA					
76.	SOHAN DUTTA BANIK					
77.	BIJOY SARKAR	S. N. Bose Government Polytechnic, Ratua, Malda	Electrical Engineering (3rd Year)	26.12.2019 (10:00 AM)	09.01.2020.	DIVISIONAL MANAGER SOUTH MALDA DIVISION, WBSIEDCL CONTACT: 7449302651- AM (HR&A) 03512-253591
78.	PRITAM DAS					
79.	SM ASIF URZAMAM					
80.	ENJAMUL HOQUE					
81.	PRALAY KARMAKAR					
82.	DIPAMKAR ROY					
83.	KRISHNENDU MAITY	Regent Education & Research Foundation	Electrical Engineering (3rd Year)	02.01.2020 (10:00 AM)	16.01.2020	DIVISIONAL MANAGER HABRA DIVISION, WBSIEDCL CONTACT: 7449304691- AM (HR&A) 03216-237110
84.	JOYDEEP GHOSH					
85.	SHIVAM NATH					
86.	ARIJIT PODDAR					
87.	NELOYKANTI SAHA					
88.	DEBASISH BISWAS	Regent Education & Research Foundation	Electrical Engineering (3rd Year)	06.01.2020 (10:00 AM)	20.01.2020	DIVISIONAL MANAGER HABRA DIVISION, WBSIEDCL CONTACT: 7449304691- AM (HR&A) 03216-237110
89.	SOUMYA KANTI MONDAL					
90.	SANJU BISWAS					
91.	PRIYANJAN KUMAR					
92.	ARABINDA RAHA	Regent Education & Research Foundation	Electrical Engineering (3rd Year)	08.01.2020 (10:00 AM)	22.01.2020	DIVISIONAL MANAGER HABRA DIVISION, WBSIEDCL CONTACT: 7449304691- AM (HR&A) 03216-237110
93.	ENAYAT MOLLA					
94.	SUBHOJIT ADHIKARY					
95.	SUJAY MONDAL					
96.	SAROJ KUMAR					
97.	PRASENJIT MAITY	JIS School of Polytechnic	Diploma in Electrical Engineering (3rd Year)	27.12.2019 (10:00 AM)	10.01.2020.	DIVISIONAL MANAGER NAIHATI DIVISION, WBSIEDCL CONTACT: 7449304741 AM(HR&A)
98.	RITABRATA BAGCHI					
99.	ANUPAM BISWAS					
100.	PROJIT BISWAS					

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WBSSEDCL

West Bengal State Electricity Distribution Company Limited

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Human Resource Development Department

Bidyut Bhavan, 5th Floor: D-Block: Bidhannagar: Kolkata-700 091
Phone: +91 33 2358-2192/23197488 (Sec.): FAX : +91-33-2359-0176
E-mail : hrdd.wbsedcl@gmail.com

The trainees shall be released in the afternoon as per date mentioned above. West Bengal State Electricity Distribution Company Limited shall not take any responsibility whatsoever, in case of accident or any untoward incident during the training period. However, the Trainees shall not be allowed to enter our Sub-Station premises without safety equipments (a) Helmet (b) Safety shoes which will arrange by themselves. The trainees shall have to arrange for his/her own board & lodging if so required.

During training period no remuneration / stipend will be paid by WBSSEDCL and the Training Certificate shall be issued only after receipt of daily attendance report from respective Site-in-Charge. **This Training is imparted by the WBSSEDCL free of cost.** Any act of indiscipline or any non-attendance on the part of the trainee, the training shall be deemed as cancelled.

(Handwritten Signature)
09.12.19

(S. De)

GM (HRD & TRG/PM)

MEMO NO: GM/HRD/VAC/WINTER/2019-20/ 08(1-131)
Copy forwarded for information to :

Dated: 09.12.2019

- 1) Chief Engineer & Project manager, PPSP- HQ, WBSSEDCL
- 2) ACE & PSIC, PPSP Site, / Jaldhaka Hydel Project / TCFHP, Divisional Manager: Bidhannagar-I / Serampore / New Town / Bidhannagar-II/Howrah-I/Behala/Naihati/Siliguri Town/Behala/Barasat/Alipurduar/South Malda / Habra / Naihati, Division **WBSSEDCL**.
****The training report and Note Book in duplicate of the trainee duly signed by the controlling Officer may please be handedover to the trainees alongwith release order for record and issue of certificate to trainee. The trainees should be released positively as per date mentioned above.**
- 3) Academic Co-ordinator, Techno India University, W.B.
Mobile: 9836544416, E-mail: placement.tiu@gmail.com
- 4) Co-Ordinator, Techno Main Polytechnic , Salt Lake
Phone: 033 2357 2357-5683, E-Mai: tipolytechnic@gmail.com
- 5) Executive TP, Netaji Subhash Engineering College
Phone: 033 2436 3333/1285, E-mail: nsec1998pc@gmail.com
- 6) Principal, Institute of Engineering & Management
Phone: 033 2357 8302 E-mail: director@iemcal.com
- 7) HOD, EE, Heritage Institute of Technology
Phone: 033 6627 0600/0614/0622, E-Mail: admin@heritageit.edu
- 8) HOD- EE, Siliguri Institute of Technology
Phone: 0353 2778002, Email: sittechnoo@rediffmail.com
- 9) Principal & Head- EE. IEST, Shibpur
- 10) TPO, Guru Nanak Institute of Technology
Phone: 033 2523 3900, E-Mai: gnit_tnp@jisgroup.org
- 11) TIC, Bengal Institute of Technology & Management, Santiniketan
Phone: 03463 271354/271353, E-mail: tpcell_bitm@rediffmail.com
- 12) TPO, Narula Institute of Technology
Mobile: 9830211266, E-mail: narulatnp@jisgroup.org
- 13) TPO, S. N. Bose Government Polytechnic, Ratua, Malda
E-mail: snbpoly@gmail.com
- 14) GM Corporate, Regent Education & Research Foundation
Mobile: 9007057333, E-mail: placementrerf@gmail.com
- 15) Asst. TPO, JIS School of Polytechnic
Phone: 033 25025690, Email: sayantani.de@jisgroup.org
- 16) Students (from Sl. No. 1 to Sl.No. 100) as mentioned prepages – for guidance.
**** Students are directed to maintain a note book & prepare a Training Project Report in duplicate and get the note book signed by the Officer under whom he/she is placed for training at least once in a week. The Original Training Project Report duly signed by the Controlling officer and the original release order must be submitted at HRD &TRG Department at Vidyut Bhavan within two weeks of the completion of the training. The training certificate will be available at HRDD after two months from the date of submission of above documents & must be collected within three months of submission.**

(Handwritten Signature)
9/12/19

(T. K. Adak)
SE(E) / HRDD