Training on Core and Advanced JAVA

Introduction:

Java is a high-level programming language originally developed by Sun Microsystems and released in 1995. Java runs on a variety of platforms, such as Windows, Mac OS, and the various versions of UNIX. This tutorial gives a complete understanding of Java. This reference will take you through simple and practical approaches while learning Java Programming language. This training is an introduction to Core Java. It starts with steps to install required software and editor. It has details of OOPS concept with detailed examples and great explanation. It covers important concepts of Core Java. It covers History of Java, Origin, Features of Java, OOPS, Array and Multidimensional arrays. What is class, Control structures, Object, Method and different types of constructor, String, Exception Handling and Collection Framework examples. Each topic is covered with detailed explanation and with examples. The dictionary meaning of **advance** is a forward movement or a development or improvement and the meaning of improve means thing that makes something better. All in all, we have to improve our basic knowledge to master in that particular field. Java is divided into two parts i.e. **Core Java (J2SE)** and **Advanced Java (JEE)**. The core Java part covers the fundamentals (data types, functions, operators, loops, thread, exception handling, etc.) of the Java programming language. It is used to develop general purpose applications. Whereas **Advanced Java** covers the standard concepts such as database connectivity, networking, Servlet, web-services, etc. In this section, we will discuss **what is advance Java, its benefit, uses, topics of advance Java**, and the **difference between core Java and advance Java.**

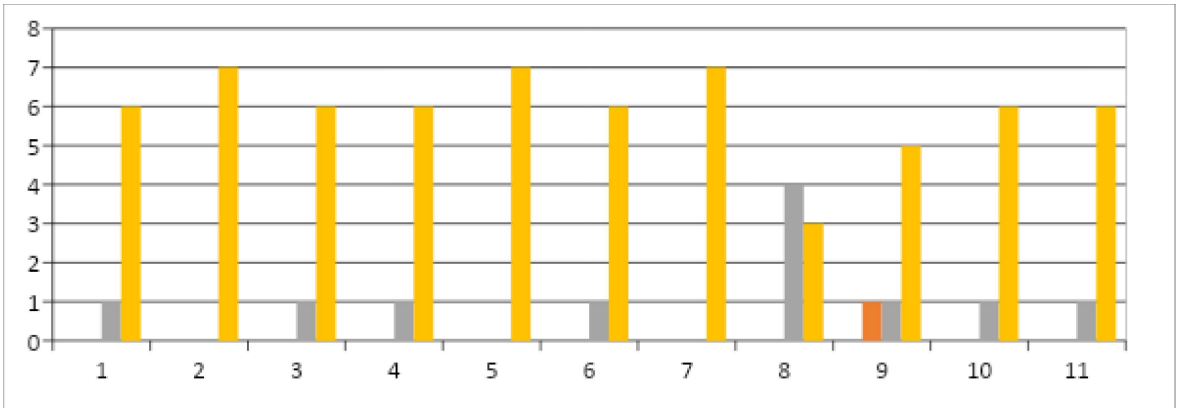
Course Objectives: After the training program, students will be able to:

1. Understand fundamentals of programming such as variables, conditional and iterative execution, methods, etc and be aware of the important topics and principles of software development.
2. Understand fundamentals of object-oriented programming in Java, including defining classes, invoking methods, using class libraries, etc.
3. Write a computer program to solve specified problems.
4. Understand the concept of **Client-Server architecture** for web- based applications.
5. Understand the working of HTTP protocol.

Program Details:

Training Program: Core and Advanced JAVA
Resource Organization: Ardent
Date: 26/08/2019 to 30/08/2019
Students who can attend: B. Tech (ECE) 5th Sem-2021 PO.

Feedback Analysis:



Report of Feedback Analysis:

Feedback for training was taken on 30th Aug 2019 with the 3rd year students (2021PO). Analysis of feedback is listed below:

1. Duration of training should be increased then students will be able to understand more clearly.
2. Online material should be provided for making clear the concept.
3. Due to problem of internet connection students faced difficulty to do their project work.

SN	ROLLNO	NAME OF THE STUDENT	ENROLLED	PARTICIPATED
1	11900317004	Vivek Kumar Thakur	Y	Y
2	11900317005	Vishal Choudhury	Y	N
3	11900317006	Tanmoy Bhowmick	Y	Y
4	11900317007	Tamajit Das	Y	N
5	11900317008	Supratim Nag	Y	Y
6	11900317010	Subham Kundu	Y	N
7	11900317011	Soumodeep Saha	Y	Y
8	11900317012	Sooumodipta Basu Majumder	Y	N
9	11900317013	Sohini Sarkar	Y	N
10	11900317014	Sneha Chakraborty	Y	N
11	11900317015	Shraddha Das	Y	Y
12	11900317016	Shalini Das	Y	N
13	11900317017	Samit Debnath	Y	N
14	11900317018	Sagarika Neogy	Y	N
15	11900317019	Rahul Biswas	Y	N
16	11900317020	Preety Prasad	Y	Y
17	11900317021	Pratik Goutam	Y	N
18	11900317022	Pranab Singha	Y	N
19	11900317023	Parna Majumdar	Y	Y
20	11900317024	Nitish Kumar Sah	N	N
21	11900317025	Nitin Raj	Y	N
22	11900317026	Nibedita Banik	Y	Y
23	11900317027	Lohit Sarkar	Y	N
24	11900317028	Komal Kanti Ganguly	Y	N
25	11900317029	Joy Sarkar	Y	N
26	11900317030	Jipsy Indra	Y	N
27	11900317031	Indrabati Chowdhury	Y	N
28	11900317032	Haimantika Mitra	Y	Y
29	11900317033	Gourab Dewan	Y	N
30	11900317034	Gargi Karmakar	Y	Y
31	11900317035	Eshita Roy	Y	Y
32	11900317036	Dilip Kumar Sah	Y	N
33	11900317037	Dikhsha Deb	Y	Y
34	11900317038	Dibyasree Pramanik	Y	N
35	11900317039	Debojit Ghosh	Y	N
36	11900317040	Debanjona Bhattacharjya	Y	N

37	11900317041	Budhaditya Dey	Y	N
38	11900317042	Brintik Majumder	Y	N
39	11900317043	Bidyut Kumar Barman	Y	Y
40	11900317044	Avishekh Sutradhar	Y	N
41	11900317045	Ashu Prasad Shah	Y	N
42	11900317046	Arpan Banerjee	Y	N
43	11900317047	Arijit Ghosh	Y	N
44	11900317048	Aniket Chhetri	Y	Y
45	11900317049	Amrita Ghosh	Y	N
46	11900317050	Aksheta Sarma	Y	N
47	11900317051	Abhradeep Das	Y	Y
48	11900317052	Abhishek Aich	Y	N
49	11900317053	Prabir Paul	Y	Y
50	11900318001	Debolina Chatterjee	Y	Y
51	11900318002	Chirayata Sarkar	Y	N
52	11900318003	Ayush Chakraborty	Y	Y

Report for the workshop on OOP with C++/JAVA on 11.03.19 to 15.03.19 for 2nd year 2021 pass out students.

The major motivating factor in the invention of object-oriented approach is to remove some of the flaws encountered in the procedural approach. OOP treats data as a critical element in the program development and does not allow it to flow freely around the system. It ties data more closely to the function that operate on it, and protects it from accidental modification from outside function. OOP allows decomposition of a problem into a number of entities called objects and then builds data and function around these objects. The data of an object can be accessed only by the function associated with that object. However, function of one object can access the function of other objects. OOP offers several benefits to both the program designer and the user. Object Orientation contributes to the solution of many problems associated with the development and quality of software products. The new technology promises greater programmer productivity, better quality of software and lesser maintenance cost. OOP has become one of the programming buzzwords today. There appears to be a great deal of excitement and interest among software engineers in using OOP. Applications of OOP are beginning to gain importance in many areas. The most popular application of object-oriented programming, up to now, has been in the area of user interface design such as window. Hundreds of windowing systems have been developed, using the OOP techniques. The facilities that C++ adds on to C are classes, inheritance, function overloading and operator overloading. These features enable creating of abstract data types, inherit properties from existing data types and support polymorphism, thereby making C++ a truly object-oriented language.

Objective of the training: Students will be explored to understand the basic areas and applications of OOP with C++/JAVA. They also acquire the skills to apply OOP in real time system, simulation and modeling, Decision support and office automation systems, Object-oriented data bases, Neural networks and parallel programming etc.

Outcome of the program:

Students will be able to:

- Able to exhibit knowledge to understand the preliminary concept about OOP with C++ /JAVA
- Able to apply OOP in real time, simulations, modeling, automation, office system etc.

The program details are as below:

Title of training ***: OOPs with C++/JAVA***
Resource Organization: Ardent Computech
Date *: 11/03/2019-15/03/2019*
Name of Trainer *: Mr. Debasish Sahoo*
Venue *:* Seminar Hall, Deptt. Of EE, S.I.T

Summary of the program:

The following points can be noted from the program

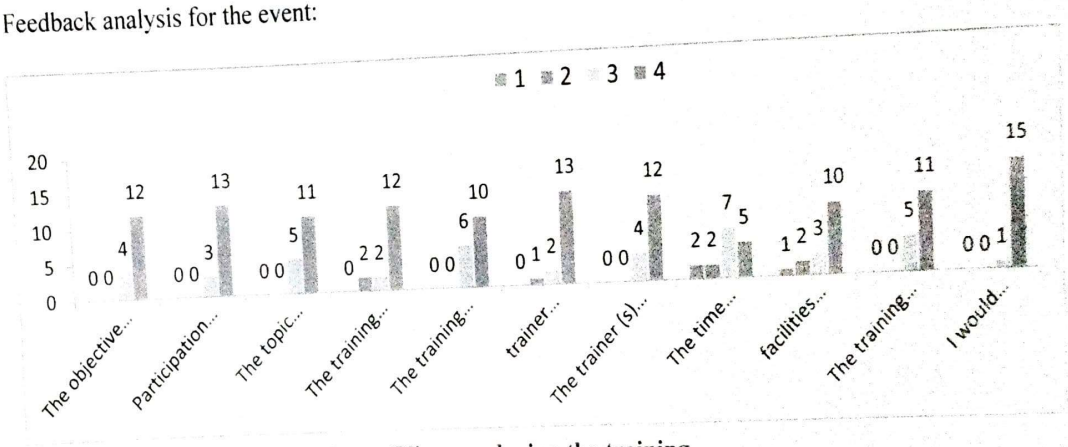
- At the beginning of the training and in day one and two Mr. Debasish Sahoo has clearly described the basic theories of C, C++, OOP, JAVA, its application in industries in different areas with the students.
- The students were asked to bring their laptops for programing and the trainer instructed and taught the students the different programming on the basis of the theories they have learned.
- Students had done many programing by themselves during the trainings.
- At the end of the training an online exam was conducted.

- During the training some students raised their queries and the trainer had explained all the quarries of the students.
- The attendance record of the students throughout the training is given below:

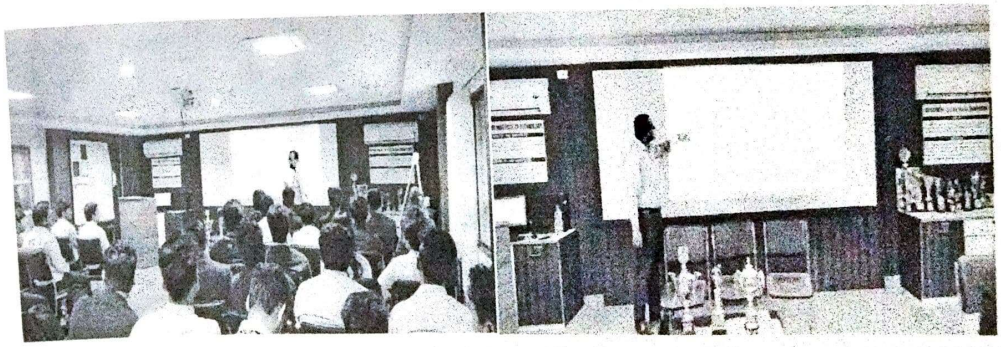
Attendance									
11/3/2019		12/3/2019		13/03/19		14/03/19		15/03/19	
1st half	2nd half	1st half	2nd half	1st half	2nd half	1st half	2nd half	1st half	2nd half
41	36	25	6	28	21	22	21	22	18

- As per the feedback received from the students end, the entire session was really fruitful and enjoyable and this kind of training program may be for longer period in future for such better output.

Feedback analysis for the event:



Some Glimpses during the training



VISION OF THE DEPARTMENT:
To emerge as a leading Department of Electrical Engineering that caters to the latest needs of power sector, electrical & allied industry in the region.

MISSION OF THE DEPARTMENT:
To evolve as an innovative & globally competent Electrical Engineering department that contributes to the socio - economic growth of region by utilizing the advancement in Electrical Engineering by providing conducive learning and interactive environment to students and faculty.

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H.O.D
Department of Electrical Engineering

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Jt- coordinators
Training and Placement subcommittee,
Department of Electrical Engineering

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Training on OOPS with JAVA

Introduction:

Java is a high-level programming language originally developed by Sun Microsystems and released in 1995. Java runs on a variety of platforms, such as Windows, Mac OS, and the various versions of UNIX. This tutorial gives a complete understanding of Java. This reference will take you through simple and practical approaches while learning Java Programming language. This training is an introduction to Core Java. It starts with steps to install required software and editor. It has details of OOPS concept with detailed examples and great explanation. It covers important concepts of Core Java. It covers History of Java, Origin, Features of Java, OOPS, Array and Multidimensional arrays. What is class, Control structures, Object, Method and different types of constructor, String, Exception Handling and Collection Framework examples. Each topic is covered with detailed explanation and with examples.

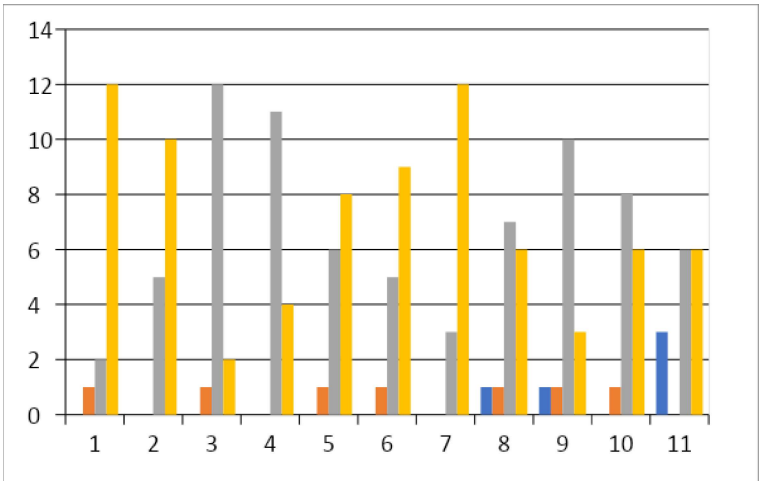
Course Objectives: After the training program, students will be able to:

1. To understand fundamentals of object-oriented programming in Java which includes defining classes, invoking methods, using class libraries.
2. To create Java application programs using sound OOP practices such as interfaces, APIs and error exception handling.
3. Using API to solve real world problems.

Program Details:

Training Program: OOPS with JAVA
Resource Organization: Ardent
Date: 16/09/2019 to 20/09/2019
Students who can attend: B. Tech (ECE) 5^{h} Sem-2020 PO.

Feedback Analysis:



REPORT of FEEDBACK ANALYSIS:

Feedback for training was taken on 20th Sep 2019 with the 3rd year students (2020 PO). Analysis of feedback are listed below:

1. Duration of training should be increased then students will be able to understand more clearly.
2. Laptop table should be provided, and More focus should be provided on practical.
3. Online material should be provided for making clear the concept.

4. Sitting arrangements should be improved.

sl.	University Roll	Student	ENROLLED	PARTICIPATED
1	11900316009	YASH VARDHAN	Y	Y
2	11900316010	UTSA GHOSH	Y	Y
3	11900316011	TRIDIBESH NAYEK	Y	Y
4	11900316012	TANMOY DEY	Y	Y
5	11900316013	TANIYA CHATTERJEE	Y	Y
6	11900316014	SUSMITA CHOWDHURY	Y	Y
7	11900316015	SUSHMITA SARKAR	Y	Y
8	11900316016	SUPRATIV SENGUPTA	Y	Y
9	11900316017	SUDESHNA SAHA	Y	Y
10	11900316018	SUBHAM UPADHYAY	Y	Y
11	11900316019	SUBHAM GHOSH	Y	Y
12	11900316020	SOUVIK MONDAL	Y	Y
13	11900316021	SOUMYADEEP PAUL	Y	Y
14	11900316022	SHIVAM SINHA	Y	Y
15	11900316023	SHAYATA SARKAR	Y	Y
16	11900316024	SHANKHADEEP DEY	Y	Y
17	11900316025	SEJUTI ROY MUKHERJEE	Y	Y
18	11900316026	SAYANTANI DEY	Y	Y
19	11900316027	SAYANI MAITRA	Y	N
20	11900316028	SAURAV KUMAR VERMA	Y	Y
21	11900316029	SANDIPAN BHATTACHARJEE	N	N
22	11900316030	SANDEEP DAS	Y	Y
23	11900316031	SAGNIK KUMAR SINHA	Y	Y
24	11900316032	RUPESH RAJ	Y	Y
25	11900316034	RISHAV KUMAR MAHATO	Y	Y
26	11900316035	RAKTIM MONDAL	Y	Y
27	11900316036	RAJESH RANJAN PRASAD	Y	Y
28	11900316037	RAHUL GHOSH	Y	Y
29	11900316038	RAHUL BHOWAL	Y	Y
30	11900316039	PRITAM KUMAR DAS	Y	Y
31	11900316040	PRATIK PRADHAN	N	Y
32	11900316041	PRARTHITA GUHA	Y	Y
33	11900316042	PRALAY BISWAS	Y	Y
34	11900316043	POURABI SENGUPTA	Y	Y
35	11900316044	PANKAJ KUMAR TIWARI	Y	Y
36	11900316045	PALLAVI BHARDWAJ	Y	Y

37	11900316046	NILANJAN DEB	Y	Y
38	11900316047	NIKITA PRASAD	Y	Y
39	11900316048	MRIGANKA BHUSAN BARAI	Y	Y
40	11900316049	MD SHADAD REZWI	Y	Y
41	11900316050	MARMEN DOLMA SHERPA	N	N
42	11900316051	MANDIRA SAHA	Y	Y
43	11900316052	MADHURIMA YADAV	Y	Y
44	11900316053	LOK BAHADUR CHHETRI	Y	Y
45	11900316054	KUNDAN KUMAR	Y	Y
46	11900317001	Krishanu Bepari	Y	N
47	11900317002	Kaushik Das	Y	Y
48	11900317003	Aparajita Roy	Y	N

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Report for the training on basic C language with problem solving for 2nd year 2022 pass out students.

Training presents a prime opportunity to expand the knowledge base of all students. C can be considered as the mother of all languages and few reasons to consider learning C is that it makes the fundamentals of every student very strong. Apart from that, C offers a very flexible memory management. Memory is allocated statically, automatically, or dynamically in C programming with the help of malloc and calloc functions.

The following list illustrates the importance the C programming language, in no particular order:

- The C language is small and relatively easy to learn.
- C compilers can produce highly efficient code.
- C compilers and cross-compilers are widely available for a large array of hardware targets, from tiny eight-bit microcontrollers to giant mainframes. The availability of compilers enables highly portable source code to be written, when appropriate disciplines are followed.
- C, although it is a high-level language, provides access to some fundamental low-level concepts such as memory addresses and dynamic memory management - concepts that are hidden by many other languages.
- C has been used to implement (in whole or in part) several major operating systems and kernels, including Unix, Linux, MacOS, and Windows.
- C has been used to implement (in whole or in part) runtime environments supporting execution of platform-independent code (e.g., the Java Virtual Machine, the .NET CLR, etc.).
- C is often used to implement efficient libraries for less-efficient languages. For example, many libraries for Python are implemented in C.
- Compilers and interpreters for a wide variety of programming languages have been written in C.
- C remains the most popular programming language for programming microcontrollers in embedded systems.
- C has influenced the following programming languages: PHP, C++, LPC, Perl, Vala, Objective-C, PCASTL, AWK, JavaScript, Limbo, D, C#, MOO, SISAL, Pike, ECMAScript, Joy, C--, Ferite, Yoix, ColdC, Aikido Programming Language, Nickle, BitC, Processing, NWScript, SAC programming language, Vala, Kaya, MIVA Script, Corba IDL, QuakeC, S-Lang, Cilk, Unified Parallel C, Split-C, Claire, VisSim, Java, Go, AMPL, Alpoca, Draco, S, Alef, Game Maker Language, BAIL

Objective of the training: Students will be explored to understand the basic areas and applications of C.. They also acquire the skills to apply C in real time system, simulation, decision support ,automation systems, Object-oriented data bases, neural networks and parallel programming etc.

Outcome of the training:

Students will be able to:

- Able to exhibit knowledge to understand the preliminary concept about C programing.
- Able to apply C in real time problem solving.

The training details are as below:

Title of training : ***Basic C language with problem solving***
Resource Organization: Ardent Computech
Date : *26/08/2019-31/08/2019*
Name of Trainer : *Mr. Victor Bhattacharya*
Venue : Control system Lab, Deptt. Of EE, S.I.T

Summary of the training:

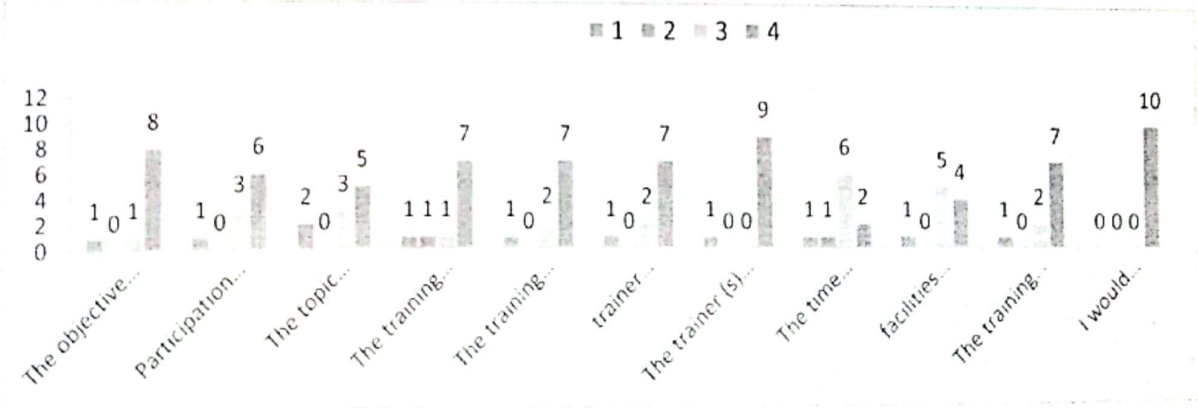
The following points can be noted from the program

- At the beginning of the training and in day one and two Mr. Victor Bhattacharya has clearly described the basic theories of C and its application in industries in different areas with the students.
- The students were asked to bring their laptops for programing and the trainer instructed and taught the students different levels programming with explanation very nicely.
- Students had done many programing by themselves during the trainings.
- At the end of the training an online exam was conducted.
- During the training some students raised their queries and the trainer had explained all the quarries of the students.
- The feedback received from the students during and after the training were very satisfactory and the students attended and learned from the training with high interest.
- The attendance record of the students throughout the training is given below:

Attendance											
26/08/2019		27/08/2019		28/08/19		29/08/19		30/08/19		31/08/2019	
1st half	2nd half	1st half	2nd half	1st half	2nd half	1st half	2nd half	1st half	2nd half	1st half	2nd half
29	28	37	25	27	27	22	20	18	13	26	18

- As per the feedback received from the students end, the entire session was really fruitful and enjoyable and this kind of training program may be for longer period in future for such better output.

Feedback analysis for the event:



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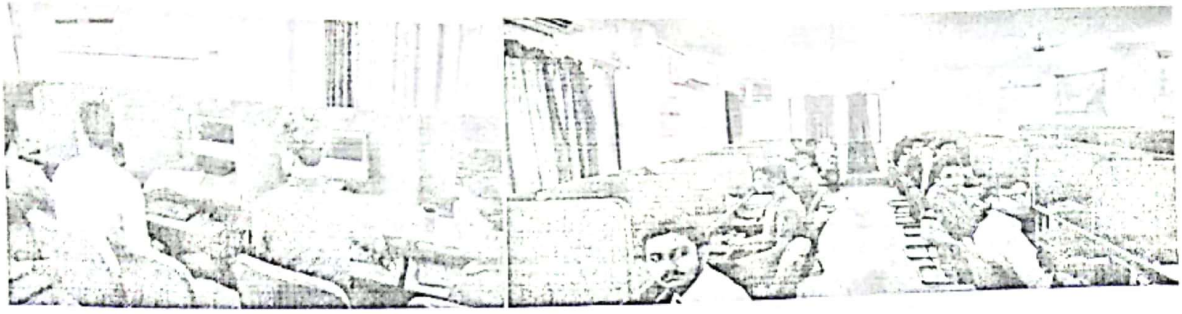
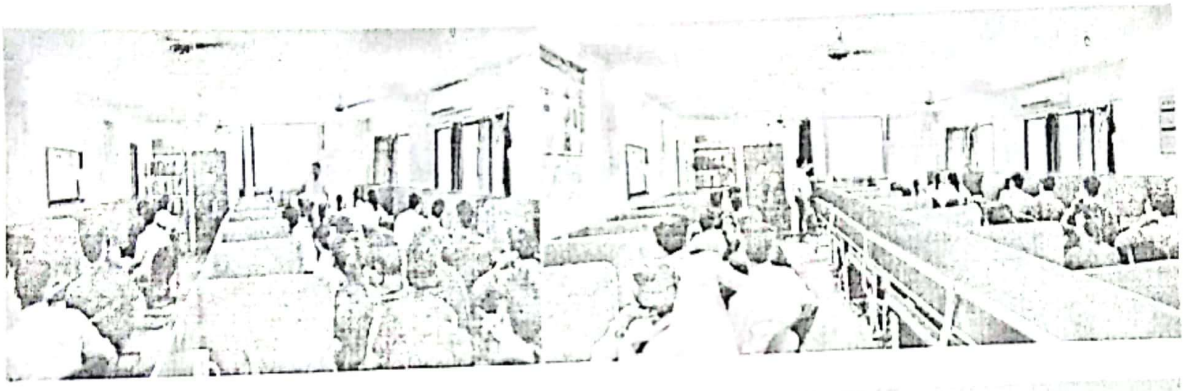
Some Glimpses during the training





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H.O.D
Department of Electrical Engineering

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Jt- coordinators
Training and Placement subcommittee,
Department of Electrical Engineering

VISION OF THE DEPARTMENT:
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SILIGURI INSTITUTE OF TECHNOLOGY

DEPARTMENT OF ELECTRICAL ENGINEERING

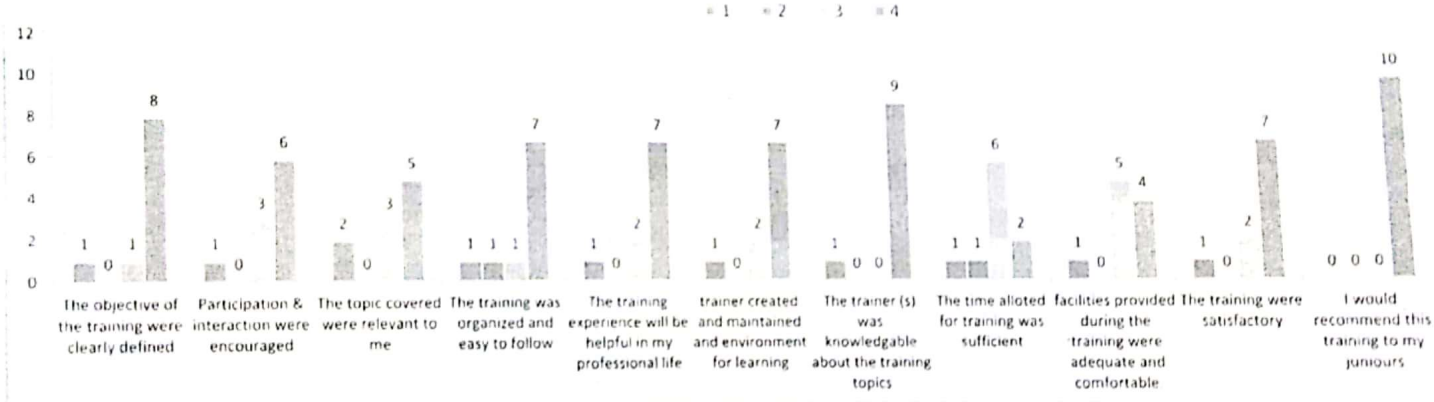
Feedback analysis for the training on Basic C language with problem solving

Duration: 26/08/2019-31/08/2019

3rd Sem EE, 2022 pass out batch

Training Organized by:T & P, S.I.T

Sl.no	TRAINING PROVIDER: Ardent Computech	Ratings(1 being lower & 4 being highest rating)				Totai No. of Respondents : 10			
1	Feedback elements	1	2	3	4	% of rating 1	% of rating 2	% of rating 3	% of rating 4
2	The objective of the training were clearly defined	1	0	1	8	1.00	0.00	10.00	8.00
3	Participation & interaction were encouraged	1	0	3	6	1.00	0.00	30.00	6.00
4	The topic covered were relevant to me	2	0	3	5	2.00	0.00	30.00	5.00
5	The training was organized and easy to follow	1	1	1	7	1.00	10.00	10.00	7.00
6	The training experience will be helpful in my professional life	1	0	2	7	1.00	0.00	20.00	7.00
7	trainer created and maintained and environment for learning	1	0	2	7	1.00	0.00	20.00	7.00
8	The trainer (s) was knowledgable about the training topics	1	0	0	9	1.00	0.00	0.00	9.00
9	The time alloted for training was sufficient	1	1	6	2	1.00	10.00	60.00	2.00
10	facilities provided during the training were adequate and comfortable	1	0	5	4	1.00	0.00	50.00	4.00
11	The training were satisfactory	1	0	2	7	1.00	0.00	20.00	7.00
	I would recommend this training to my juniours	0	0	0	10	0.00	0.00	0.00	10.00



Sl. No.	Name	Signature

SILIGURI INSTITUTE OF TECHNOLOGY

Report for Training on Coding with data structure during 11/03/2019 to 15/03/2019 for 3rd year 2020 pass out batch

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 solve 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.

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.

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.

Training Details:

Title of Training: Coding with data structure

Resource Organization/ Name of Trainer: Ardent

Date: 11/03/2019 to 15/03/2019

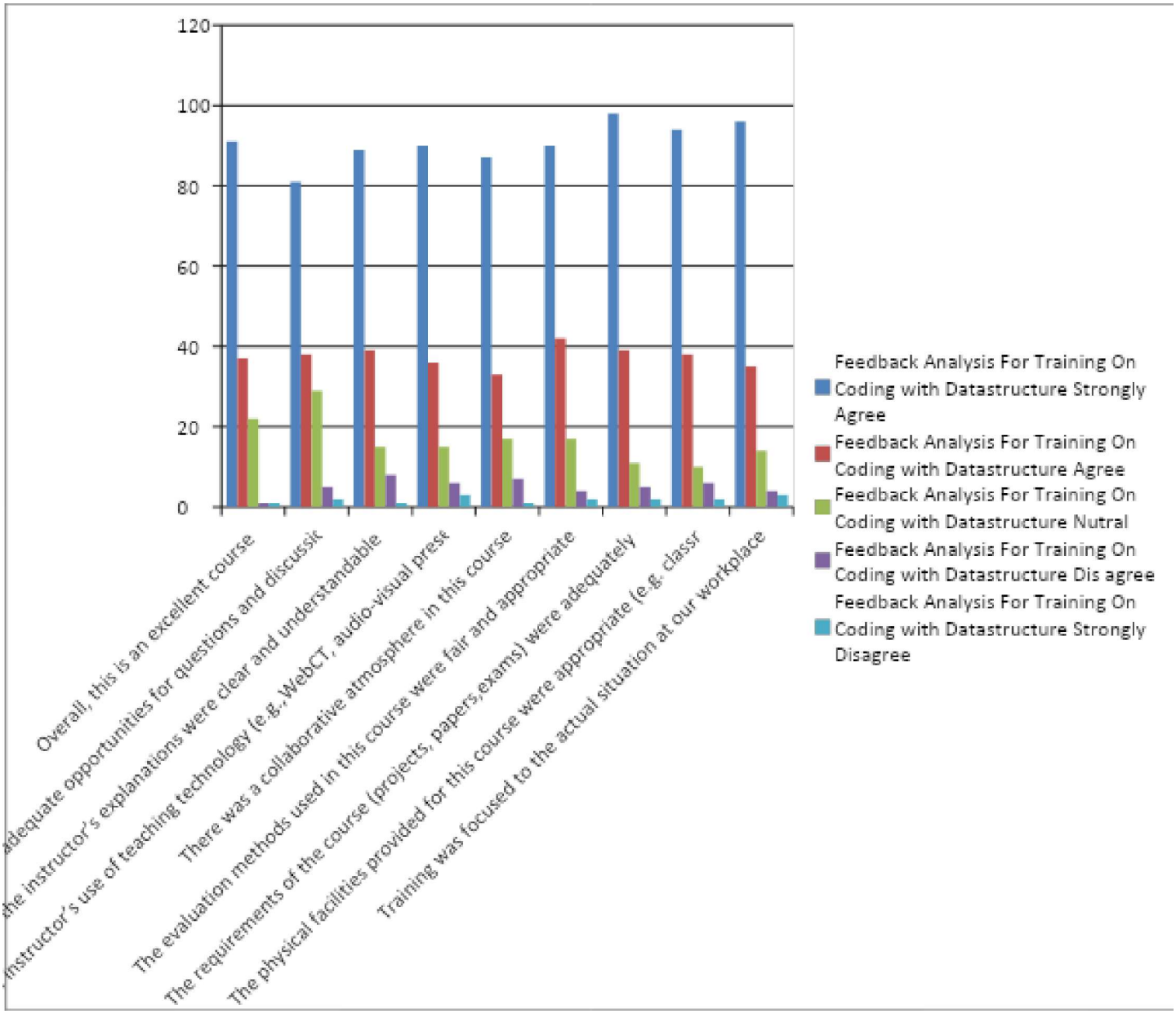
Venue: SIT ,Programming Lab I / SIT ,Programming Lab II

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 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 Programming skill.

Feedback analysis for the training:


120
100
80
60
40
20
0
Overall, this is an excellent course
dequate opportunities for questions and discussic
he instructor's explanations were clear and understandable
nstructor's use of teaching technology (e.g., WebCT, audio-visual presc
There was a collaborative atmosphere in this course
The evaluation methods used in this course were fair and appropriate
The requirements of the course (projects, papers,exams) were adequately
The physical facilities provided for this course were appropriate (e.g. classr
Training was focused to the actual situation at our workplace
Feedback Analysis For Training On Coding with Datastructure Strongly Agree
Feedback Analysis For Training On Coding with Datastructure Agree
Feedback Analysis For Training On Coding with Datastructure Nutral
Feedback Analysis For Training On Coding with Datastructure Dis agree
Feedback Analysis For Training On Coding with Datastructure Strongly Disagree

26

SILIGURI INSTITUTE OF TECHNOLOGY

DEPARTMENT OF CIVIL ENGINEERING

Report for the training on E-Tabs conducted during 17/08/2020 to 31/08/2020 for 2021 pass out CE students.

Objective of the training: Students will be proficient in the ETABS tool and able to perform different structural design and analysis case studies/projects.

Outcome of the program:

Students will be able to:

- Begin with fundamentals and then move on to the professional tools.
- Learn complete the ETABS interface, how to perform different types of analysis, post-process the results, and prepare reports.

The program details are as below:

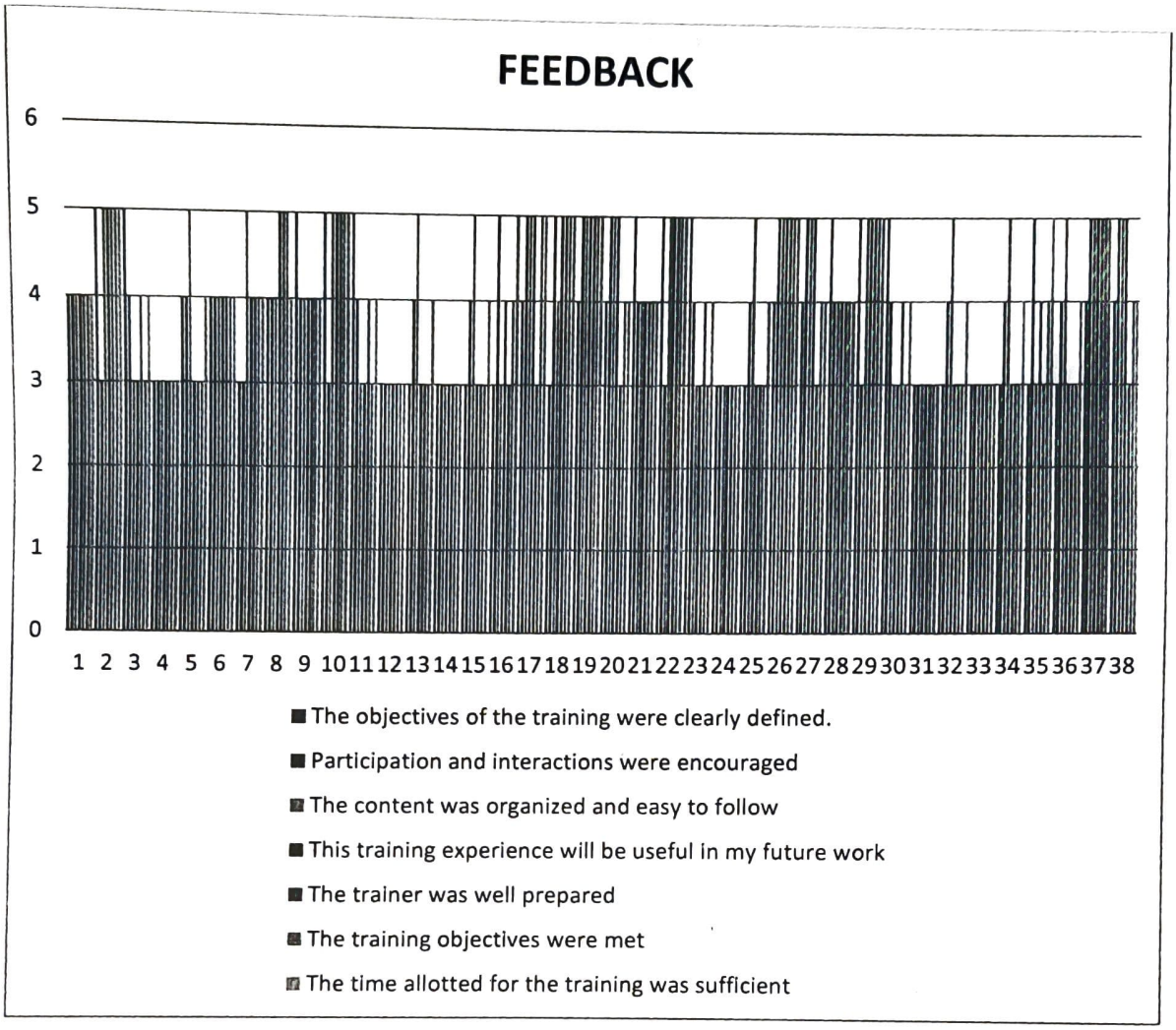
Title of training : E-Tabs
Rersource Organization: Sikharthy
Date : 17/08/2020 to 31/08/2020
Platform : Online

Summary of the program:

The following points can be noted from the program

- At the beginning they were introduced to fundamental knowledge
- The topics discussed and taught during the intermediate days of the training were 3D object based modeling and visualization tools, linear and nonlinear analytical power, design capabilities for a wide range of materials, and graphic displays, reports, and schematic drawings
- Students designed and analysed structures during the session
- At the end of the training an online exam was conducted
- As per the feedback received from the students end, the entire session was a real success and students learned and enjoyed the session on ETABS

Feedback analysis for training:



HOD, Dept. of Civil Engineering

Departmental T&P Coordinator
Dept. of Civil Engineering

SILIGURI INSTITUTE OF TECHNOLOGY

DEPARTMENT OF CIVIL ENGINEERING

Report for the training on STAADPRO conducted during 11/03/2019 to 15/03/2019 for 2020 pass out CE students.

Objective of the training: Students will be proficient in STAAD.Pro tool and able to perform different structural design and analysis case studies / projects.

Outcome of the program:

Students will be able to:

- Begin with basics and then move on to the professional tools.
- Effectively learn Bentley STAAD.Pro on account of learning paths and modules defined and developed by an industrial working professionals and Bentley Systems.

The program details are as below:

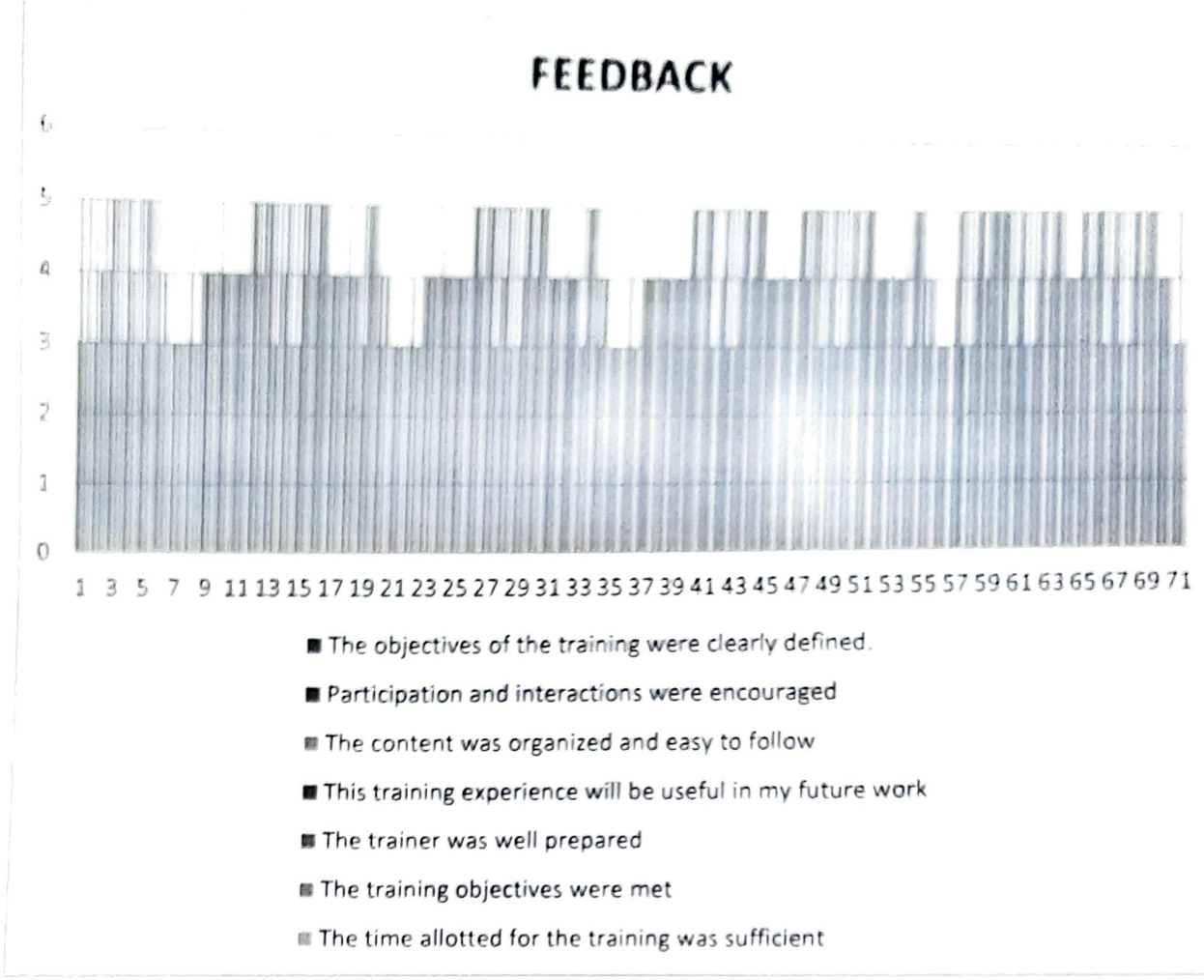
Title of training : STAAD.Pro
Rersource Organization: Ardent
Date : 11/03/2019 to 15/03/2019
Venue : Department of Civil Engineering, Siliguri Institute of Technology

Summary of the program:

The following points can be noted from the program

- At the beginning they were introduced to the STAAD.Pro and given an elaborated idea of its application in the different areas of the industry
- The topics discussed and taught during the intermediate days of the training were basics, analysis of a structure, designing of the analysed structure, load combination, complete design and analysis of a building with seismic load and wind load.
- Students analyses many structures during the session
- At the end of the training an online exam was conducted
- As per the feedback received from the students end, the entire session was a real success and students learned and enjoyed the session on STAAD.Pro .

Feedback analysis for training:



HOD, Dept. of Civil Engineering

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Dept. of Civil Engineering

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SILIGURI INSTITUTE OF TECHNOLOGY

DEPARTMENT OF CIVIL ENGINEERING

Report for the training on REVIT conducted during 26/08/2019 to 30/08/2019 for 2021 pass out CE students.

Objective of the training: Students will be provided with a 360-degree perspective to modelling and drafting a structure aided with design provisions.

Outcome of the program:

Students will be able to:

- Begin with basics and then move on to the professional tools.
- Effectively learn rendering, phasing and design options, plus advanced

The program details are as below:

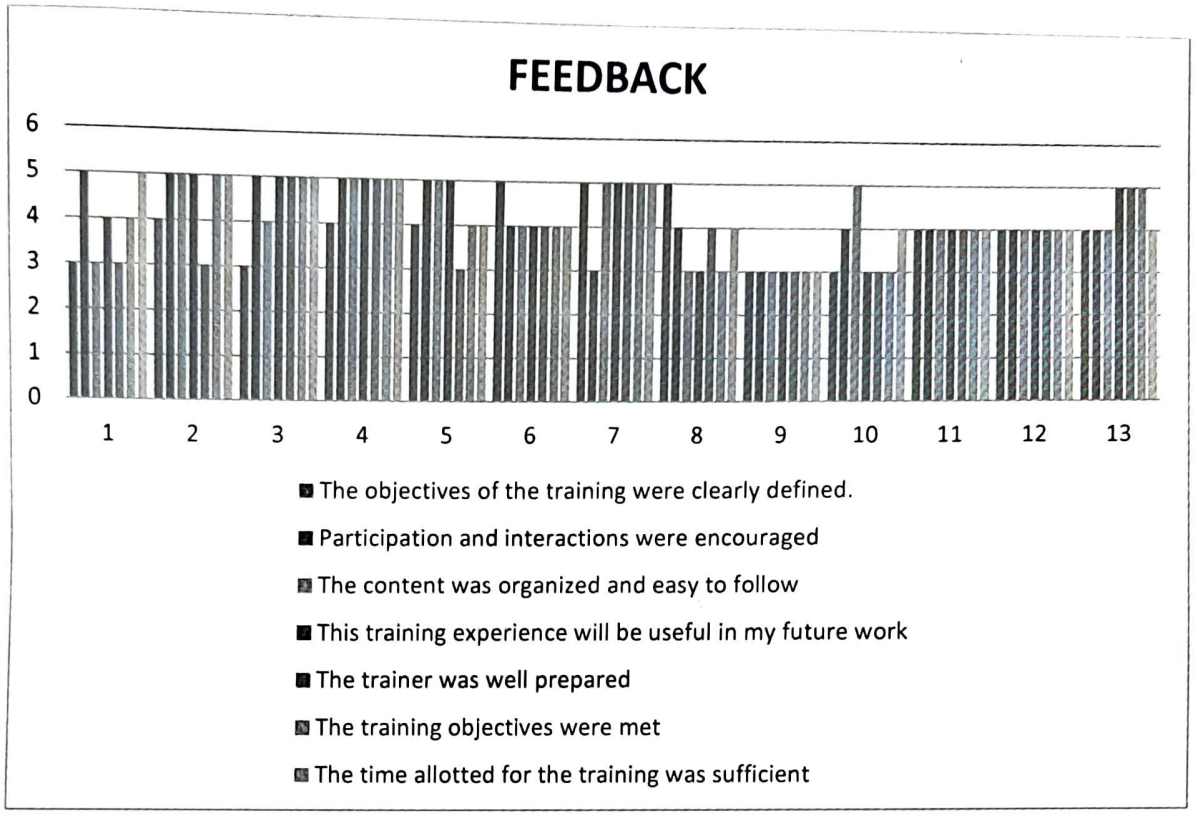
Title of training : REVIT
Rersource Organization: Ardent
Date : 26/08/2019 to 30/08/2019
Venue : Dept. of Civil Engineering, Siliguri Institute of Technology

Summary of the program:

The following points can be noted from the program

- At the beginning they were introduced to the REVIT and given an elaborated idea of its application in the different areas of the industry
- The topics discussed and taught during the intermediate days of the training were building information modelling, project model and design elements, project design and presentation methods, project design with building codes.
- Students modeled structures during the session
- At the end of the training an online exam was conducted
- As per the feedback received from the students end, the entire session was a real success and students learned and enjoyed the session on REVIT

Feedback analysis for training:



HOD, Dept. of Civil Engineering

Departmental T&P Coordinator
Dept. of Civil Engineering

SILIGURI INSTITUTE OF TECHNOLOGY

Report for Training on advanced JAVA during 01/08/2020 to 12/08/2020 for 3rd year 2017 pass out batch

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.

The course 'OOPS with Java' was designed as 12 days online training conducted for 2nd year CSE and IT students. 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, Servlates.

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:

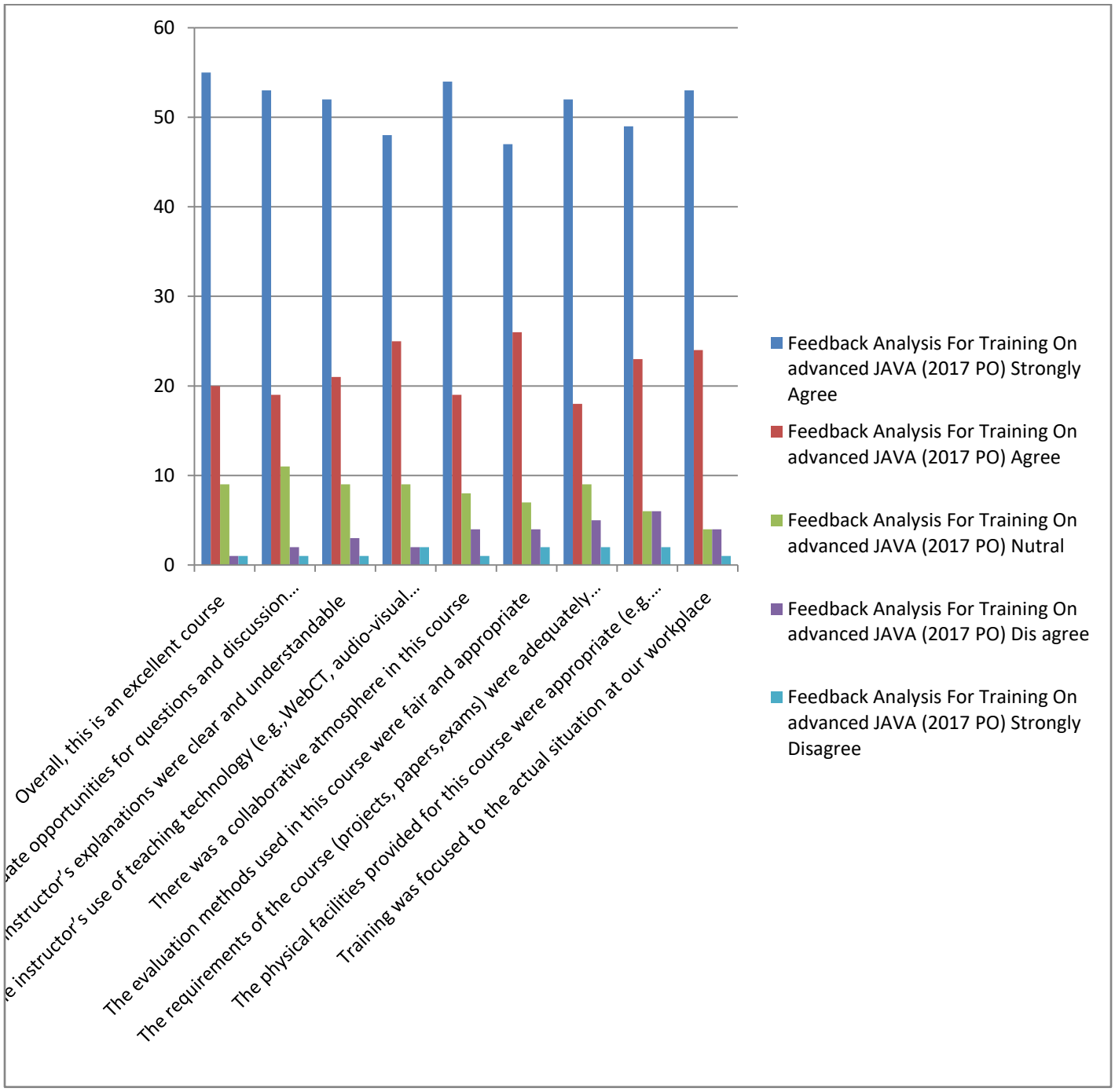
- Online on approach to training, behavioral model of training would be practiced.
- During the training, the Trainee would implement a project related to respective modules.
- Commitment to Individual growth and constant evaluation.
- Implementation of programming techniques through a Project.

Training Details:

Title of Training: Advanced JAVA
Resource Organization/ Name of Trainer: NSIC
Date: 01/08/2016 to 12/08/2016
Venue: SIT, Programming Lab I/ SIT, Programming Lab II/OT&UML Lab
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:



Report for Training on Data Science with ML using Python during 04/11/2020 to 13/11/2020 for 3rd year 2022 Pass Out Batch

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

Training Details:

TITLE : Data Science with ML using Python
DATE : 04/11/2020 t0 13/11/2020
VENUE : Online Mode
PARTICIPANTS : 3rd year CSEand IT students
TRAINER/ ORGANIZATION : Ardent

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-learnfor handling basic ML algorithms like clustering, linear and logistic regressions,regression, classification, and others.
- Pandasfor high-level data structures and analysis. It allows merging and filtering of data, aswell as gathering it from other external sources like Excel, for instance.
- Kerasfor deep learning. It allows fast calculations and prototyping, as it uses the GPU inaddition to the CPU of the computer.
- TensorFlowfor working with deep learning by setting up, training, and utilizing artificialneural networks with massive datasets.
- Matplotlibfor creating 2D plots, histograms, charts, and other forms of visualization.
- NLTK f or working with computational linguistics, natural language recognition, and processing.
- Scikit-imagefor image processing.
- PyBrainfor neural networks, unsupervised and reinforcement learning.
- Caffefor deep learning that allows switching between the CPU and the GPU
- StatsModelsfor 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 inthe 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, wecan 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 willsay 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. kNN 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.

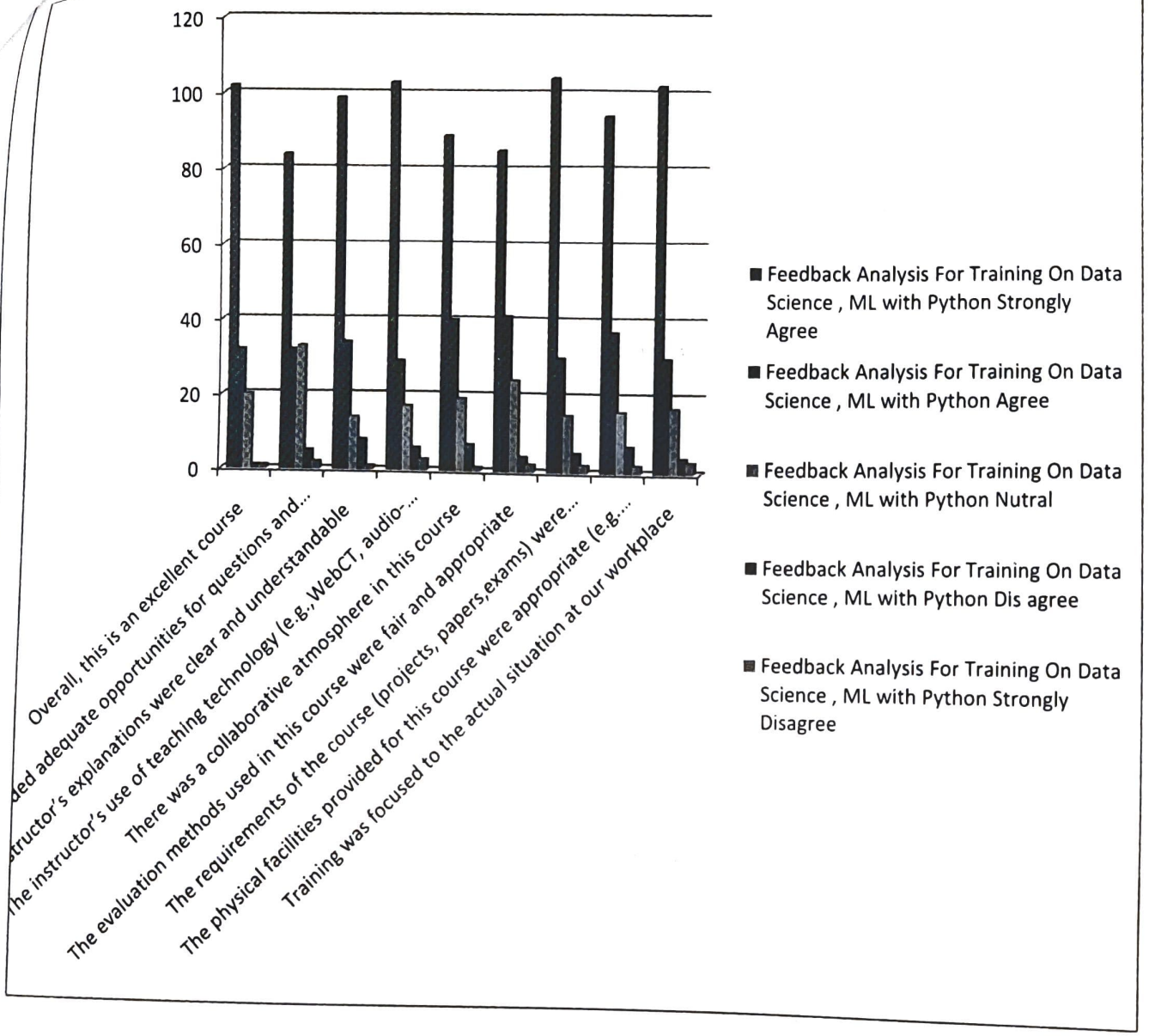
7. K-Means Algorithm -k-Means is an unsupervised algorithm that solves the problem of clustering. It classifies data using a number of clusters. The data points inside a class are homogeneous and heterogeneous to peer groups. k-means clustering is a method of vector quantization, originally from signal processing, that is popular for clusteranalysisindata 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 it s attributes, trees vote for class- each tree provides a classification. The classification with the most votes win sin 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 :


120
100
80
60
40
20
0
Overall, this is an excellent course
ded adequate opportunities for questions and...
structor's explanations were clear and understandable
he instructor's use of teaching technology (e.g., WebCT, audio-...
There was a collaborative atmosphere in this course
The evaluation methods used in this course were fair and appropriate
The requirements of the course (projects, papers,exams) were...
The physical facilities provided for this course were appropriate (e.g....
Training was focused to the actual situation at our workplace
Feedback Analysis For Training On Data Science , ML with Python Strongly Agree
Feedback Analysis For Training On Data Science , ML with Python Agree
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SILIGURI INSTITUTE OF TECHNOLOGY

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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 willsay 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. kNN 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 clusteranalysisindata 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 it s attributes, trees vote for class- each tree provides a classification. The classification with the most votes win sin 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

Training Methodology:

- Online 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 ML Algorithms through a Project using Python.

Training Details:

TITLE : Data Science with ML using Python
DATE : 04/11/2020 to 13/11/2020
VENUE : Online Mode
PARTICIPANTS : 3rd year CSE and IT students
TRAINER/ ORGANIZATION : Ardent

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 Science with ML using Python 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 Python.

Feedback Analysis :