Excelssior Education Society's
K. C. College of Engineering and Management Studies and Research
(Affiliated to the University of Mumbai)
MithBunder Road, Near Hume Pipe, Kopri, Thane (E)-400603

Department of Electronics and Telecommunication

A.Y. 2019-20

Sr.No.	Name of faculty	Sem	Class	Subject	Methodology used
1	Mr. Hasib Shaikh	VI	T.E.EXTC	Database Management System	Poster Making
2	Mr. Hasib Shaikh	VI	T.E.EXTC	Database Management System	Advance topic Presentation
3	Mrs. Anupama Chaurasia	VIII	B.E. EXTC	RF Design	Expert lecture and industrial visit
4	Ms. Aarti Bakshi	V	T.E.EXTC	Neural network and fuzzy logic	PowerPoint Presentation by students
5	Ms. Aarti Bakshi	VI	T.E.EXTC	Image processing and Machine vision	PowerPoint Presentation on Image processing by students

Excelssior Education Society's

K.C. College of Engineering and Management Studies and Research

Mith Bunder Road, Near Hume Pipe, Kopri, Thane (E)-400603

DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION
2019-20

Name of Faculty: Rajiv Iyer

Sub: Electromagnetic Engineering

Class: T.E.EXTC SEM:V

Methodology followed: Students formed groups and summarized topics related to electromagnetic research papers. Then they created a video and it was uploaded on You Tube.This was done as part of Assignment no. 1.

Difficulty faced: Student faced difficulty in understanding papers which was solved through doubt solving sessions. Students faced some trouble in uploading videos as they had not uploaded videos on You Tube. Guidance regarding this was then provided.

New method identified :Video making, summarization technique and articulation. Creating and making knowledge repository available in public domain catering to learners all over the world.

Activity report: Screencasts can provide learners a student-centered and engaging learning experience in both distance and traditional learning settings. A major benefit of screen casting is that **the viewer can watch the screencast at any time** Additionally, the viewer can absorb the information at their own pace by pausing and rewatching portions.

Students created videos summarizing research papers of electromagnetic engineering on topics which may or may not part of the curriculum. This enhanced their knowledge about the subject beyond the syllabus.

Link of You Tube channel:
https://www.youtube.com/channel/UCr-rHF6bp_HJKgTWfMUcBOw/featured

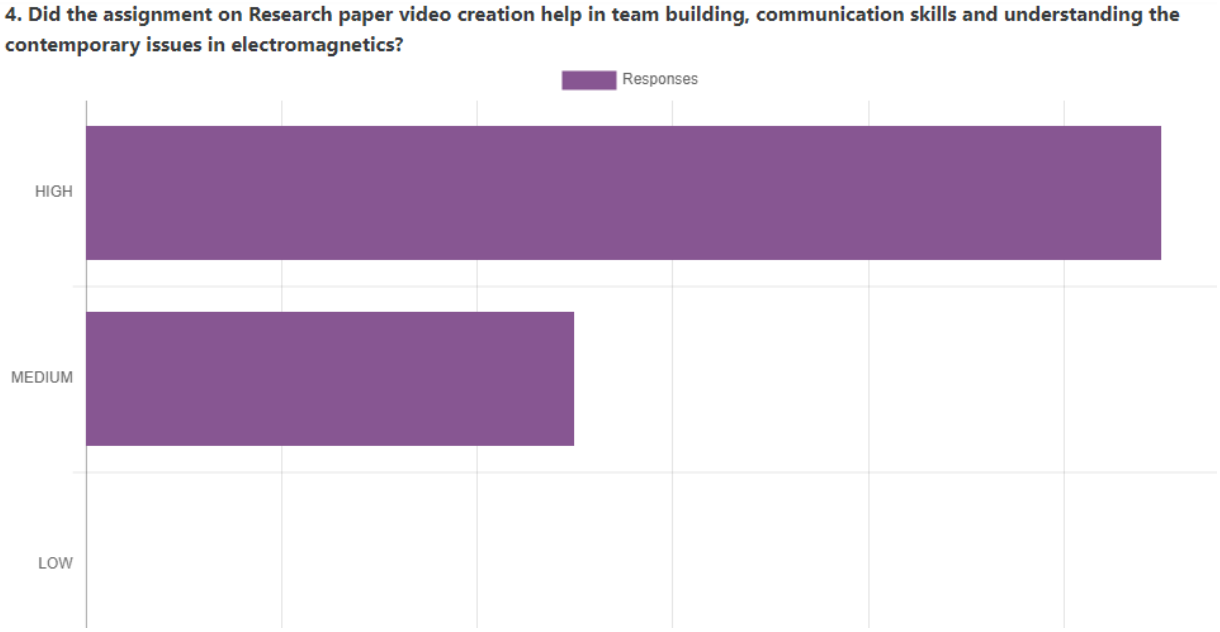


Fig: Course exit survey regarding the assignment.

Outcome: Summarizing a topic improves comprehending ability of learners and also makes them aware of the contemporary issues in electromagnetics engineering.Students get an opportunity to work as a team and communicate. Uploading videos on You Tube enhance ICT skills of learners. This knowledge repository is available in public domain catering to learners all over the world.

Video is an efficient and memorable way to deliver information to students of all ages. But having students create video projects themselves is also a great way to help them actively engage with subject matter learn from one another. This enhances peer-to-peer learning.

Excelssior Education Society's

K.C. College of Engineering and Management Studies and Research

Mith Bunder Road, Near Hume Pipe, Kopri, Thane (E)-400603

DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION
2019-20

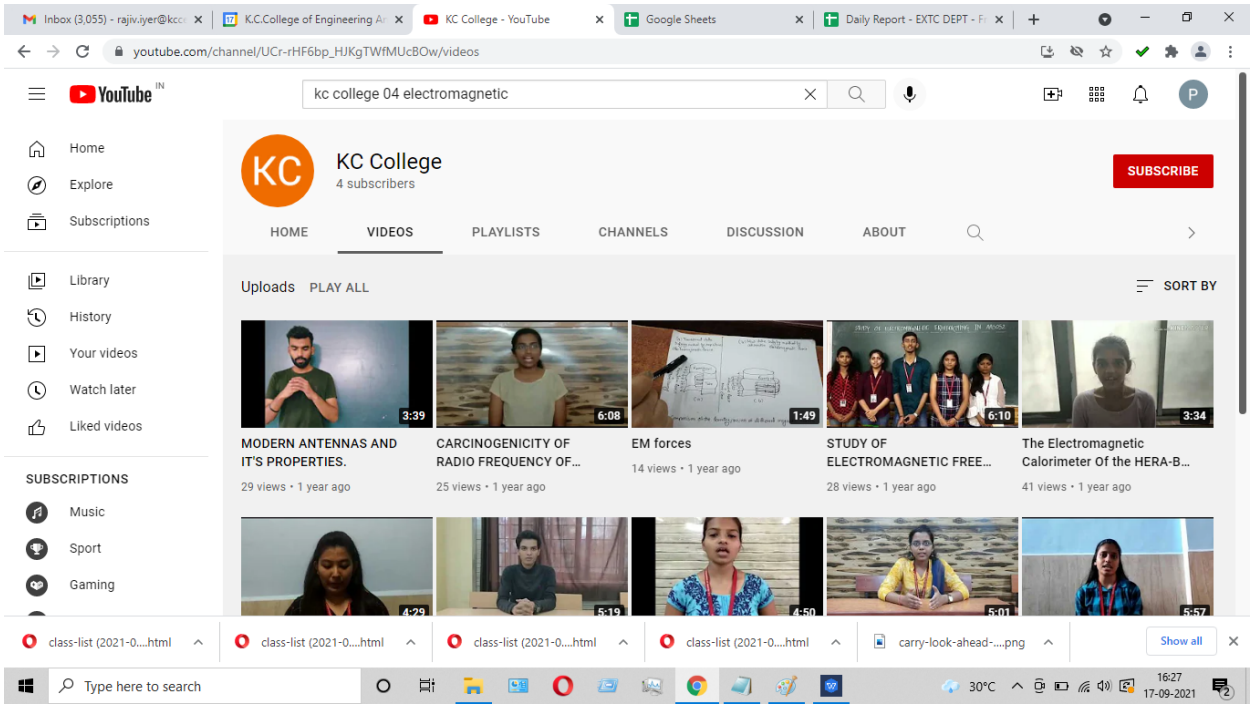


Fig: Snapshot of the You Tube channel

Excelssior Education Society's
K.C.College of Engineering and Management Studies and Research
(Affiliated to the University of Mumbai)
MithBunder Road, Near Hume Pipe, Kopri, Thane (E)-400603

Department of Electronics and Telecommunication

2019-20

Name of Faculty: Hasib Shaikh

Sub: Database Management System

Class: T.E.EXTC SEM: VI

Methodology followed: Google meet, Google classroom, ppt.

Difficulty faced: Student faced difficulty sometime internet issues, presentation of models.

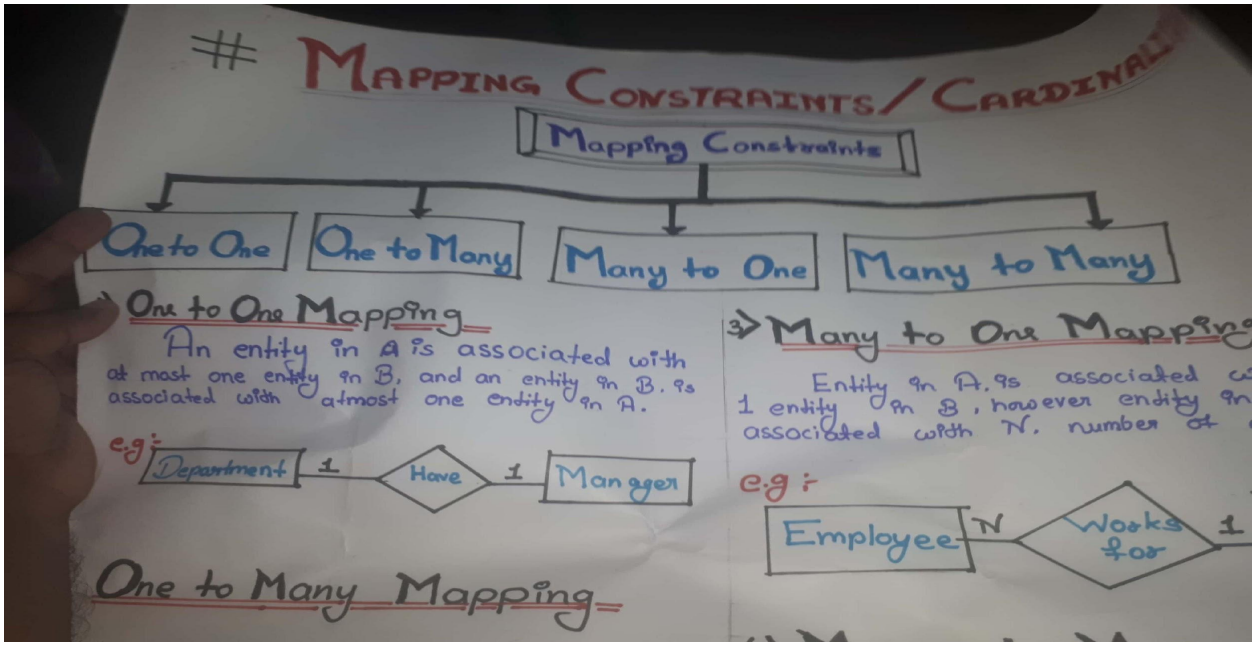
New method identified: Poster Making

Activity:

Activity Report: Posters provide an opportunity to pair visual learning with textbook reading, lecture, and traditional homework assignments. As such, posters are often created by students to visually display a significant course project, developing research, or a particular perspective for class to consider.

Posters come in many forms, from traditional cardboard to large post-it note versions with adhesive backing, to formal displays printed by companies. Instructors can consider the space available and the assignment when choosing a poster type.

Outcome: The best advantage of poster making is that it facilitates team work and understanding along with facilitating creative thinking and extensive research and reading. It provides students with an opportunity to learn by doing, in turn strengthening the learning.



TE EXTC DBMS Sem IV

1. Akansha Mishra D23
2. Kirti Lokhande D20
3. BJ Aishwarya D6.

Excelssior Education Society's
K.C. College of Engineering and Management Studies and Research
Mith Bunder Road, Near Hume Pipe, Kopri, Thane (E)-400603
DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION
2019-20

Name of Faculty: Mrs. Anupama Chaurasia

Sub: **RF Design**

Class: B.E.EXTC SEM: VIII

Methodology followed: Google Class Room Teaching, Written Assignments, Remedial lectures

Difficulty faced: Students do not get the exact understanding of the topic through regular online or offline classroom teachings and basic written subject assignments.

New method identified: Expert Lecture, Industrial Visit

Report : **Expert Lecture on "Review of Terahertz Sources, Detectors and Spectroscopy of materials"**
Date: 4th March 2020, **Venue:** Gurugobind Singh Auditorium
Objective: To learn about Terahertz Sources, Detectors and Spectroscopy of materials in the field of telecommunication.
Activity Report:
Terahertz radiation also known as submillimeter radiation, terahertz waves, tremendously high frequency(THF), T-rays, T-waves, T-light, T-lux or THz consists of electromagnetic waves within the ITU-designated band of frequencies from 0.3 to 3 terahertz (THz). **Dr Shriganesh Prabhu**, Associate Professor from TIFR, Colaba explained about the various terms related to Terahertz .He described that the terahertz regime is that promising yet vexing slice of the electromagnetic spectrum that lies between the microwave and the optical, corresponding to frequencies of about 300 billion hertz to 10 trillion hertz (or if you prefer, wavelengths of 1 millimeter down to 30 micrometers). He also shared on how TIFR and various other government organizations can help the young aspirant engineers to pursue higher studies or to get into research area. Overall he enlightened the session by not only providing the talk on Tera Hertz but also encouraged the students to shape their career.

Excelssior Education Society's

K.C. College of Engineering and Management Studies and Research

Mith Bunder Road, Near Hume Pipe, Kopri, Thane (E)-400603

DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION

2019-20

Industrial Visit Report

Place of Visit: Society of Applied Microwave Electronics Engineering and Research (SAMEER), EMI/EMC Division, Kharghar

Date of Visit: 6th March 2020 (One day visit)

Excelssior Education Society's
K.C. College of Engineering and Management Studies and Research
Mith Bunder Road, Near Hume Pipe, Kopri, Thane (E)-400603
DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION

2019-20

Report on
Industrial Visit at SAMEER

SAMEER is an autonomous R &D Laboratory at Mumbai under the Department of Electronics with a broad mandate to take R&D work in the areas of Microwave Engineering and Electromagnetic Engineering Technology. SAMEER is an abbreviation for Society for Applied Microwave Electronics Engineering & Research.

The EMI/EMC division has expertise in the field of EMC testing for commercial electronic products as well as electronics required for defense and space applications (MIL STD products). It provides Test, Measurement and Design Consultancy services to customers for their satisfaction in achieving Electromagnetic Compatibility in electronic products to comply with National/International EMC Standards. EMC testing is done as per various civilian and military standards like CISPR 11, CISPR 22, CISPR 24, IEC 61000-4, MIL-STD-461C/D/E.The division also has the necessary experience and expertise for undertaking projects for high pulsed power applications viz. High Power Pulsed Radar Transmitters.

Radiated Susceptibility Laboratory

The Centre has the test and measurement facility equipped with a Shielded Semi Anechoic Chamber for conducting Radiated Susceptibility tests. The facility supports Radiated Susceptibility tests right from 10kHz to 18 GHz.The Centre is equipped with apparatus including Signal Generators for the frequency ranges of 10 MHz - 21.6 GHz and 9 kHz - 2.2 GHz. Also has got RF Power Amplifiers of frequency ranges (80 MHz - 1 GHz, 500W), 10 kHz-30 MHz, 1.5 - 400 MHz, 800 MHz - 4.2 GHz and 4.2 - 18 GHz

The facility includes different types of antennae namely Passive Loop Antenna (1 kHz - 30 MHz), Biconilog antenna (26 MHz - 2 GHz), Double Ridged Waveguide Horn Antenna (1 GHz - 18 GHz). Field Strength upto 100 V/m for the frequency range of 200 MHz - 1 GHz, 50 V/m for the frequency range of 80 MHz - 1 GHz, 30 V/m for the frequency range of 1 GHz - 13 GHz, 10 V/m for the frequency range of 10 kHz - 80 MHz can be generated. Field Uniformity for the test facility is better than 6dB for 75% or more points as per the requirement of the IEC 61000-4-3 standard.

The centre has got Transverse Electromagnetic (TEM) Cell to carry Radiated Susceptibility test for the frequency ranges of DC - 200 MHz and DC - 800 MHz. Field Strength upto 200 V/m can be generated using this TEM cell which is required for Automotives such as Electronic Sub Assembly (ESA).

The radiated emission test is done using automation software developed and validated in-house. The software allows for precise control of the test parameters through out the testing. Helmholtz coil designed and developed In - House is available for Power Frequency Magnetic Field Immunity test conforming to IEC 61000-4-8.Spikes are kept inside the Laboratory to avoid the reflections.The spikes absorbs the reflections.Testing is done to avoid interruptions and increase the immunity.

Conducted Emission Laboratory

The Conducted Emission measurement facility at SAMEER-CEM is FCC (Federal Communication Commission) listed for the Conducted Emission measurements. The conducted emission test facility is housed inside a shielded room provided with the required vertical ground and horizontal ground reference planes, complying to the international standards such as EN55011, EN55022, CISPR 11, CISPR 22 and FCC Part 15.EMI receivers are available covering frequency range 20 Hz - 26.5 GHz The LISNs available at the centre supports measurement on line carrying upto 200 Amps. For higher current ratings, voltage probes are available for conducted noise measurements.The noise is checked and maintained within limits.Bulbs can also be used to limit the noise.

The measurements for the lighting equipments as in accordance to the International Standards CISPR 15 can be carried out at the facility.The centre also have a Discontinuous Interference Analyzer (DIA) for click - discontinuous interference measurement confirming to CISPR 14-1 for the house holding equipment such as Washing Machine, Refrigerator etc.The different RF current probes, ISN also available for the telecommunication ports, signal line testing setup according to the CISPR 22 Standards.Common Stds followed : CISPR-11, CISPR-22,etc. CISPR-11 is used for medical purposes whereas CISPR-22 is used by ITU.

Conducted Susceptibility Test

The following tests are having the test facility for doing the conducted immunity tests:

Electrostatic Discharge Test(ESD)for simulating the static electric discharges, from operators directly, and to adjacent objects. ESD test facility is equipped with static electric charge generator with different types of energy storage capacitor and discharge resistance as per IEC, BS EN, ISO & SAE standard requirements.This is done to check the immunity of the equipment from static charge.As per the std,10 pulses are given.

Surge Test for simulating the surges caused by over voltages from switching and lightning transients. Surge test facility is equipped with 1.2/50µs and 10/700µs combination wave generator with different type of coupling and decoupling networks for DC, single phase, three phase supply lines and unshielded unsymmetrical & symmetrical interconnection lines as per IEC and BS EN standard requirements.

Magnetic Field Test for simulating the surges caused by over voltages from switching and lightning transients. Surge test facility is equipped with 1.2/50µs and 10/700µs combination wave generator with different type of coupling and decoupling networks for DC, single phase, three phase supply lines and unshielded unsymmetrical & symmetrical interconnection lines as per IEC and BS EN standard requirements.Helmoltz coil is used while generating the magnetic field.300 A/m can be generated.

Environmental Test

In this, the temperature,humidity and other environment related factors are checked and tested on the equipment.In a temperature chamber the equipment is placed and it is tested for the range of temperature it can sustain without getting damaged. The temperature chamber tests for both cooler and hotter environment.The temperature range is from -30 to 180 degree celsius.This same chamber is also used for the Humidity test.The temperature range is in degree celsius and is also called as damp heat test.The

circuit which is used in the chamber is similar to that of a heater.To check the humidity water is poured drop by drop onto the equipment.IEC and IS Standard are followed.

Vibration Test System is used to check or sense the motion.Three types of vibrations are tried Sine,Random and Shock.The velocity is 1.7m/s.Piezoelectric sensors are used to sense the motion.

Glow Wire Test is to check the temperature of the equipment for sustaining flame.This actually helps us know the melting point of the material.A coil is used which heats the material.The material is placed and the coil is made to penetrate in the material.The penetration is just of 7mm.The coil is heated at various temperatures.The coil is touched with the equipment only for 30seconds.The softening temperature is measured and that temperature is noted.The melting of the material is checked by inserting a needle.A silicon material is also there in it which checks.If the flame is not extinguished the equipment fails the test.

Safety is also checked at SAMEER.Thermocouples are used to check the temperature the materials used.Shock test,Insulation Resistance test are also performed.Capton test is performed on the transformer.Probes are used in spaces which are for ventilation to maintain particular distance for safety.SAR value for mobile equipments should be below 1.6.The strength of the cables and probes are checked to analyze upto which extend these wires or cables can sustain the strain without getting broke or damaged internally and externally.$AlCl_3$ test is also used to check the sustainance of the PCB.

Excelssior Education Society's

K.C. College of Engineering and Management Studies and Research

Mith Bunder Road, Near Hume Pipe, Kopri, Thane (E)-400603

DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION

2019-20

Excelssior Education Society's
K.C.College of Engineering and Management Studies and Research
(Affiliated to the University of Mumbai)
MithBunder Road, Near Hume Pipe, Kopri, Thane (E)-400603

Department of Electronics and Telecommunication

Name of Faculty: Hasib Shaikh

Sub: Database Management System

Class: T.E.EXTC SEM: VI

Methodology followed: Google meet, Google classroom, ppt.

Difficulty faced: Student faced difficulty sometime internet issues, presentation of models.

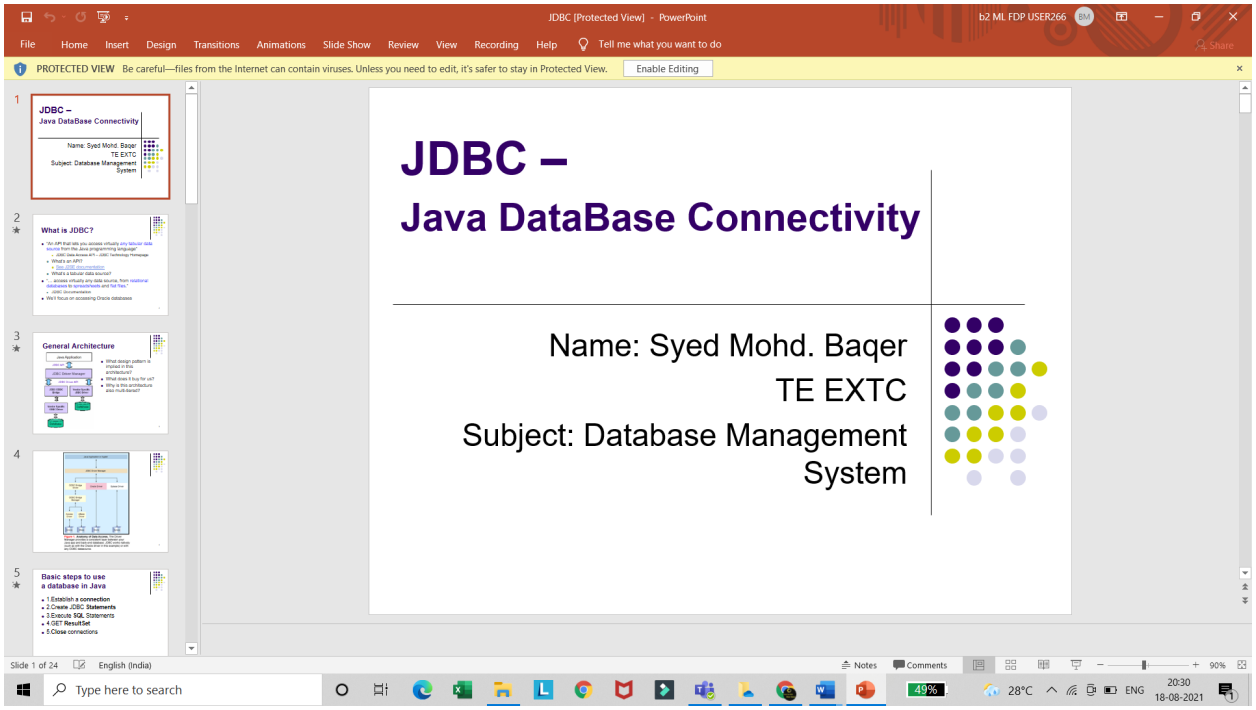
New method identified: Advance Topic PPT

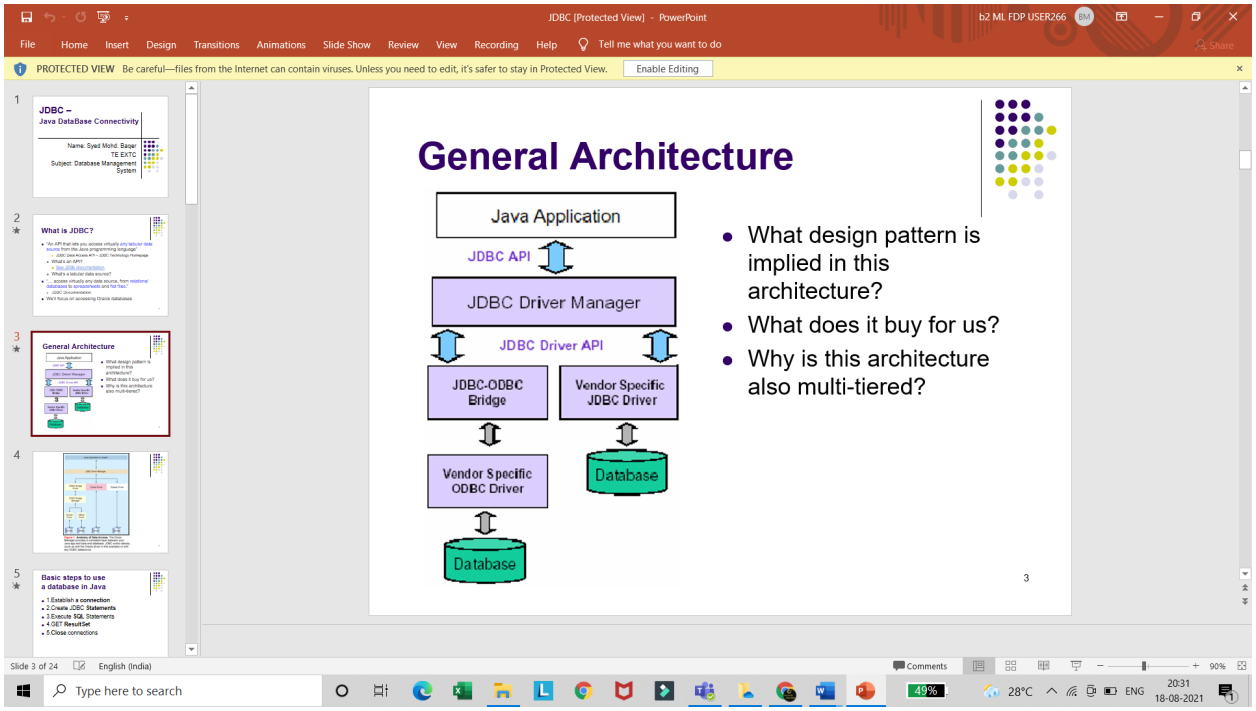
Activity Report:

Objectives for creating Advance Topic PPT: JDBC in JAVA

Lay out your objectives in advance. Break down your larger topic into smaller, logical parts. Break them down again, if you can. Try to find the combination of discussion points that best represents your larger goal, and organize them in such a way that a listener can follow them. The point of a presentation is to convince an audience of your ideas, and the best way to do that is to lead them to a conclusion through persuasive organization of ideas.

Outcome: Students learned to create PPT and presented. These PPT help the students to learn the concept in detail.


JDBC [Protected View] - PowerPoint
PROTECTED VIEW Be careful—files from the Internet can contain viruses. Unless you need to edit, it's safer to stay in Protected View.
Enable Editing
JDBC –
Java DataBase Connectivity
Name: Syed Mohd. Baqer
TE EXTC
Subject: Database Management System
Slide 1 of 24
Type here to search


JDBC [Protected View] - PowerPoint
PROTECTED VIEW Be careful—files from the Internet can contain viruses. Unless you need to edit, it's safer to stay in Protected View.
Enable Editing
General Architecture
Java Application
JDBC API
JDBC Driver Manager
JDBC Driver API
JDBC-ODBC Bridge
Vendor Specific JDBC Driver
Vendor Specific ODBC Driver
Database
Database
What design pattern is implied in this architecture?
What does it buy for us?
Why is this architecture also multi-tiered?
3
Slide 3 of 24
Type here to search

Excelssior Education Society's

K.C. College of Engineering and Management Studies and Research

Mith Bunder Road, Near Hume Pipe, Kopri, Thane (E)-400603

DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION
2020-21

Name of Faculty: Paurnima Machhindra Vadak

Sub: **Principles of Communication Engineering**

Class: S.E SEM: IV

Methodology followed: Google meet, Google classroom, PPT, Video Lectures.

Difficulty faced: Revision of a topic or a concept during exam time from the notes takes time.

New method identified: Mind mapping activity

Activity report: The mind map is basically a diagrammatic and interesting way of summarizing or giving information about any concept. For making a mind map group of students were made. To cover all the important points on a mind map all the group members brainstorm. After finding out all the important points they are presented with the help of beautiful colorful diagram etc. These colorful mind maps make the understanding of concept easier. Also the same can be used for the quick revision during exam time.

A major benefit of this technique is that **the students discuss in a team to share their knowledge on a particular topic and then find out all the important points and present them in an interesting way.**

Outcome: Improvement in team work skill of the students and better understanding of the topic

Sample mind maps are as follows:

Communication System

Basic Terminology (Transducer, Signal, Noise, Transmitter, Receiver, Attenuation, Amplification Range, Modulation, Demodulation, Repeater)

Information Source

Transmitter

Channel

Receiver

User of Information

Bandwidth

Propagation

Noise

AM Broadcast
FM Broadcast
TV Broadcast

Ground Wave (<1540MHz)
Sky Wave (<30MHz)
Space Wave (>40MHz)

Used In
(1) LOS
(2) TV Tower
(3) Satellite Communication

Demodulation

Modulation

Frequency Modulation

Amplitude Modulation

Advantage of FM over AM

Rectifier

Detector

Output

A·M

F·M

P·M

FREQUENCY MODULATION.

Advantages :-

- The operating range is quite large.
- The efficiency of transmission is very large.

Disadvantages :-

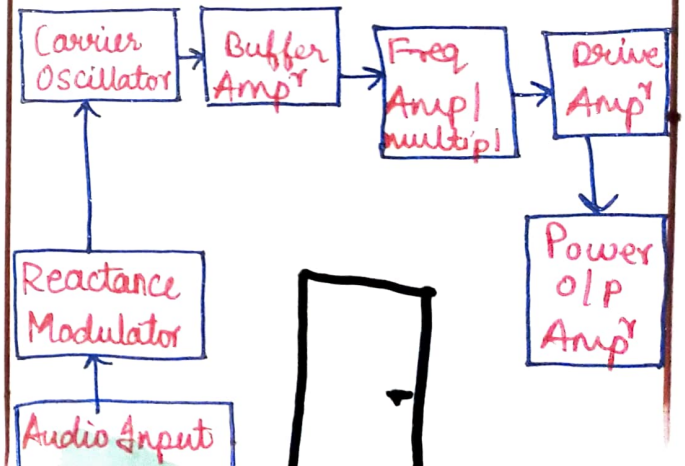
- A much wider channel is required.
- It is more complex.

Def :- F·M is an encoding of information in carrier wave by varying the instantaneous frequency of wave.

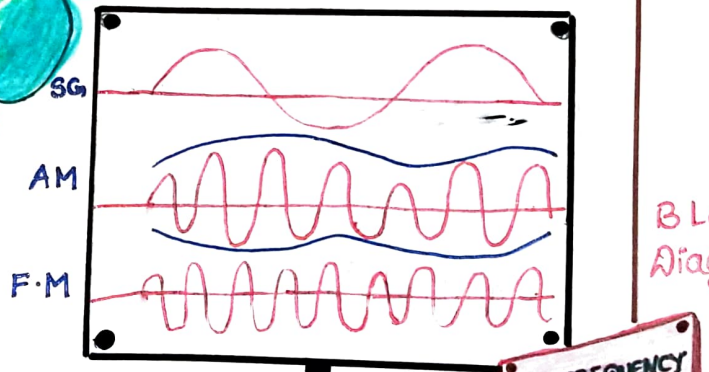
Application

- Frequency Modulation is widely used for FM radio broadcasting.
- Used in telemetry, radar, EEG.
- It has larger Signal to Noise Ratio.

Block Diagram



WAVEFORM.



INDIRECT FM TRANSMITTER

- FM generation is the indirect method because of the modulating signal directly varies the phase of the carrier which indirectly changes the frequency.