Jawahar Education Society's,
INSTITUTE OF TECHNOLOGY, MANAGEMENT & RESEARCH, NASHIK.
(Accredited by NAAC)
(Approved by AICTE, New Delhi, DTE, Government of Maharashtra, Affiliated to Savitribai Phule Pune University)

2.3 Teaching-Learning Process

2.3.2 Teachers use ICT Enabled Tools for Effective Teaching Learning Process

Survey No 48, Gowardhan, Gangapur Road, Nashik - 422222. Maharashtra, India
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Index

Teaching through Power Point Presentations

Department: Information Technology

Class: SEIT

Sem: I

Subject: Object Oriented Programming

UNIT-01

Foundations of Object Oriented Programming

Subject : Object Oriented Programming

Class : SEIT

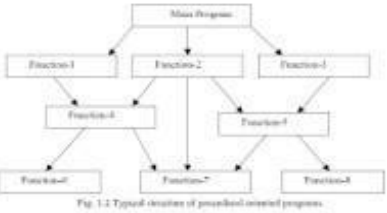
Foundations of Object Oriented Programming

- **Introduction to OOP:** Software Evolution, Introduction to Procedural, Modular, Object-Oriented and Generic Programming Techniques, Limitations of Procedural Programming, Need of Object Oriented Programming
- **Fundamentals of Object Oriented Programming:** Objects, Classes, Data Members, Methods, Messages, Data Encapsulation, Data Abstraction and Information Hiding, Inheritance, Polymorphism, Static & Dynamic Binding, Message Passing
- **Case Study:** Model a real world scenario (vehicle class, fruit class, student management in university etc.) using Object Oriented Paradigm

Software Evolution

- Machine Language [1, 0]
- Assembly Language
- Procedure-Oriented
- Object-Oriented Programming

Introduction to Procedural



Introduction to Procedural

Introduction to Procedural [characteristics]

- Emphasis on doing the things (algorithms).
- Large programs are divided into smaller programs known as functions.
- Most of the functions share global data.
- Employs top-town approach in program design.

Department: Information Technology

Class: SEIT

Sem: I

Subject: Computer Graphics

Computer Graphics

Unit 1

Computer Graphics Basic, OpenGL and Line, Circle Drawing

Class : SEIT

Contents

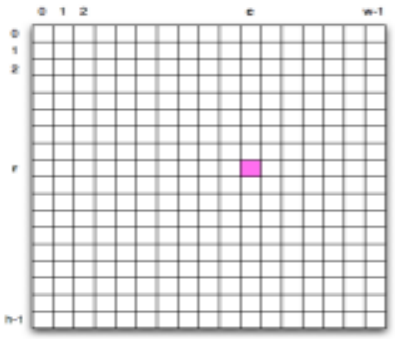
- Introduction, graphics primitives - pixel, resolution, aspect ratio, frame buffer. Display devices, applications of computer graphics.
- Introduction to OpenGL - OpenGL architecture, primitives and attributes, simple modelling and rendering of two and three dimensional geometric objects, GLUT, interaction, events and call-backs picking.(Simple Interaction with the Mouse and Keyboard)
- Scan conversion: Line drawing algorithms: Digital Differential Analyzer (DDA), Bresenham. Circle drawing algorithms: DDA, Bresenham, and Midpoint.

Graphics Primitives

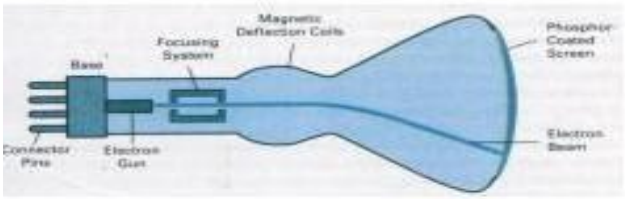
- Computer graphics primitives are basic geometric shapes or elements that serve as the building blocks for creating more complex images in computer graphics.
- Some common computer graphics primitives include:
  - **Points:** These are single pixels that represent a location in space.
  - **Lines:** Lines are sequences of connected pixels that extend in a particular direction. They can be defined by two endpoints or by a point and a direction vector.
  - **Line Segments:** These are finite sections of lines that have a definite starting and ending point.
  - **Polygons:** Polygons are closed geometric shapes with straight sides. They can be regular (all sides and angles are equal) or irregular (sides and angles can vary). Common examples include triangles, rectangles, and pentagons.
  - **Circles:** Circles are round shapes defined by a center point and a radius. They can be used to represent curves and arcs.
  - **Ellipses:** Similar to circles, ellipses are elongated round shapes defined by a center point, major axis, and minor axis.
  - **Curves:** Curves represent smooth or nonlinear paths. Bezier curves and splines are examples of commonly used curves in computer graphics.
  - **Surfaces:** Surfaces are two-dimensional representations of shapes. These can be used to create 3D models by combining multiple surfaces.

Basic Concepts

- **Screen Size :** The physical dimensions of a screen. It is the length, in inches, of the screen from one corner to the diagonal corner.
- **Pixel:** Screens display images through pixels. A pixel, pel or dots, or picture element is a physical point in a raster image, or the smallest addressable element in raster display device; so it is the smallest controllable element of a picture represented on the screen.
  - Pixels are arranged in a grid to form images on screens, such as computer monitors, TVs, and mobile devices.
  - Pixels are not always the same size from device to device.

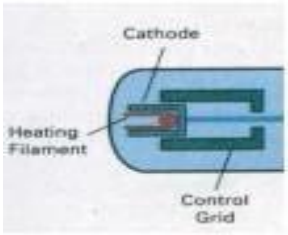


CRT



- The electron gun emits a beam of electrons (**cathode rays**).
- The electron beam passes through focusing and deflection systems that direct it towards specified positions on the **phosphor-coated screen.**
- When the beam hits the screen, the phosphor emits a small spot of light at each position contacted by the electron beam.

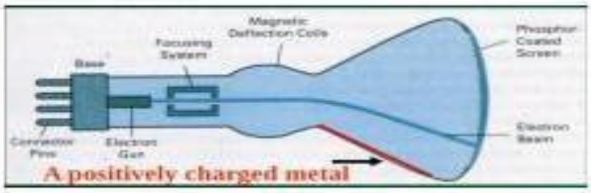
Electron Gun



- Heat is supplied to the cathode by the **filament**.
- The free electrons are then accelerated toward the phosphor coating by a **high positive voltage**.

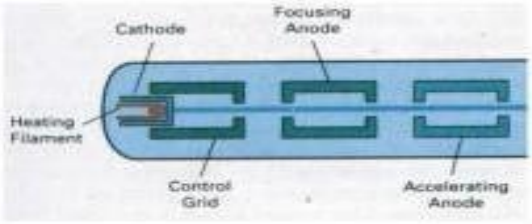
High positive voltage

A positively charged metal coating on the inside of the CRT envelope near the phosphor screen.



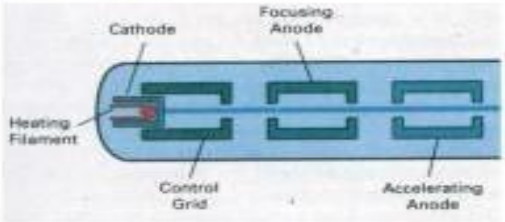
High positive voltage

Accelerating anode



Control grid

Intensity of the electron beam is controlled by setting voltage level on the control grid.



Department : Computer

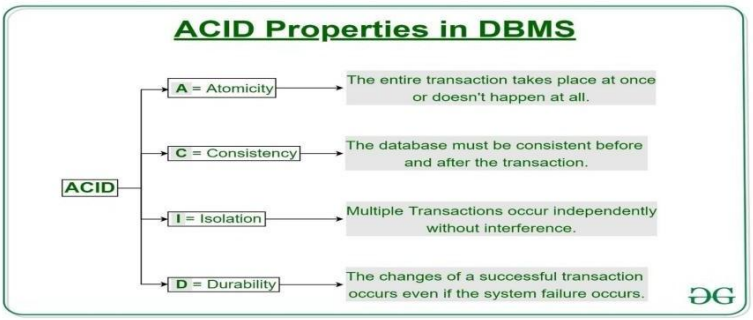
Class : TE

Subject : Database Management Systems

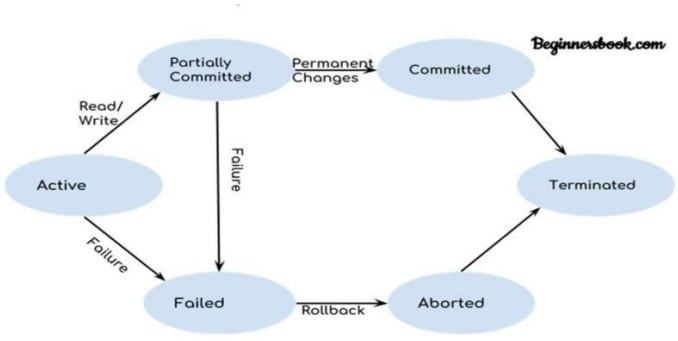
Database Transaction management

Unit 4

Properties of transaction



Transaction States



Teaching through Power Point Presentations

Department of Civil Engineering

Class: SECE **Sem: I**

Subject: Fluid Mechanics

Introduction

- Fluid mechanics is a study of the behavior of fluids, either at rest (fluid statics) or in motion (fluid dynamics).
- The analysis is based on the fundamental laws of mechanics, which relate continuity of mass and energy with force and momentum.
- An understanding of the properties and behavior of fluids at rest and in motion is of great importance in engineering.

3

Objectives

1. Identify the units for the basic quantities of time, length, force and mass.
2. Properly set up equations to ensure consistency of units.
3. Define the basic fluid properties.
4. Identify the relationships between specific weight, specific gravity and density, and solve problems using their relationships.

4

1.1 Definition of Fluid

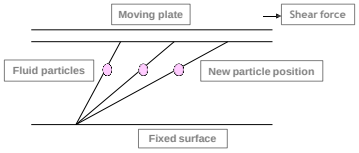
- A fluid is a substance, which deforms continuously, or flows, when subjected to shearing force
- In fact if a shear stress is acting on a fluid it will flow and if a fluid is at rest there is no shear stress acting on it.

Fluid Flow → Shear stress - Yes
Fluid Rest → Shear stress - No

5

Shear stress in moving fluid

- If fluid is in motion, shear stress are developed if the particles of the fluid move relative to each other. Adjacent particles have different velocities, causing the shape of the fluid to become distorted
- On the other hand, the velocity of the fluid is the same at every point, no shear stress will be produced, the fluid particles are at rest relative to each other.



6

Newtonian and Non-Newtonian Fluid

Fluid --obey--> Newton's law of viscosity --refer--> Newtonian fluids

Example:
Air
Water
Oil
Gasoline
Alcohol
Kerosene
Benzene
Glycerine

Newton's' law of viscosity is given by;

$$\tau = \mu \frac{du}{dy} \quad (1.1)$$

τ = shear stress
μ = viscosity of fluid
du/dy = shear rate, rate of strain or velocity gradient

- The viscosity μ is a function only of the condition of the fluid, particularly its temperature.
- The magnitude of the velocity gradient (du/dy) has no effect on the magnitude of μ.

8

Newtonian and Non-Newtonian Fluid

Fluid --Do not obey--> Newton's law of viscosity --> Non- Newtonian fluids

- The viscosity of the non-Newtonian fluid is dependent on the *velocity gradient* as well as the *condition of the fluid*.

Newtonian Fluids
- a linear relationship between shear stress and the velocity gradient (rate of shear),
- the slope is constant
- the viscosity is constant

non-Newtonian fluids
- slope of the curves for non-Newtonian fluids varies

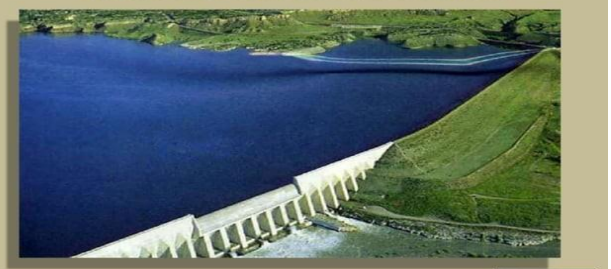
9

Department of Civil Engineering

Class: TECE **Sem:** I

Subject: Hydrology and Water Resources Engineering

HYDROLOGY AND WATER RESOURCES ENGINEERING



Syllabus

- Reservoir Types, Investigations, Site selection, Zones of storage, Safe yield, Reservoir capacity, Reservoir sedimentation and control.

Reservoir

- **A Reservoir is a artificial lake or impoundment from a dam** which is used to store water.
- **Reservoirs may be created in river valleys by the construction of a dam or may be built by excavation in the ground** or by conventional construction techniques such as brickwork or cast concrete.

Purpose of Reservoir

- The Storage reservoir is formed for the following purpose:
- Flood Control
- Irrigation
- Water Supply
- Hydroelectric Power Generation
- Development of fishery
- Navigation
- Soil Conservation

Flood Control

Reservoir may be designated by.

- ***Single Purpose Reservoir*:** This type of reservoir is formed mainly to serve a single purpose, such as irrigation, flood control, water supply, etc.
- ***Multipurpose Reservoir*:** This type is formed to serve many purpose such as,
- **Irrigation and water supply.**
- **Irrigation water supply and flood control.**
- **Irrigation, water supply, flood control, hydroelectric power generation, fishery, etc.**

Soil Conservation

Classification of Reservoir

Storage Reservoir

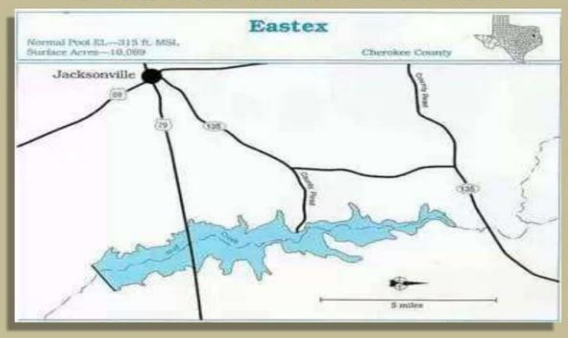
- **Storage Reservoir The storage reservoir is formed by constructing a dam across a river valley. The idea of constructing such a reservoir is to store the excess water which flows through the river during the high floods or rainy season**. This stored water is then utilized for various purposes, such as irrigation, water supply, fishery, hydroelectric power generation, etc. **Again the storage reservoir may be named as single purpose reservoir or multipurpose reservoir according to its utility**.

Storage Reservoir

Site Selection for Reservoir

- The following points should be remembered while selecting a site for a reservoir.
- ***Stable foundation for the dam should be available where the reservoir basin is proposed to be formed.***
- ***At the selected site the river valley should be narrow and well defined so that the length of the dam may be short.***
- ***The proposed reservoir basin should be watertight and free from cracks, fissures, etc. so that there is no loss of water due to percolation.***
- ***The reservoir water should not submerge valuable land or property.***

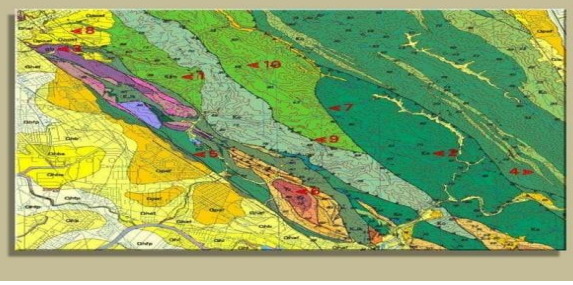
Site Selection for Reservoir



Investigation works for the Reservoir

- ***Geological Survey:*** It should be carried out to determine the following informations:
- ***(i) Dam foundation:*** The sub-surface exploration at the dam site should be carried out to locate the cracks, fissures, etc, which are responsible for the percolation loss. Necessary measures can then be recommended for percolation zones to control the losses.

Geological Survey



Hydrological Survey

BACK

Teaching through Video Lecture

Department: Information Technology

Class: SEIT

Sem: I

Subject: Audit Course (Quantitative Aptitude and Logical Reasoning)

Digital Classroom

Department of Civil Engineering

Class: SECE **Sem:** I

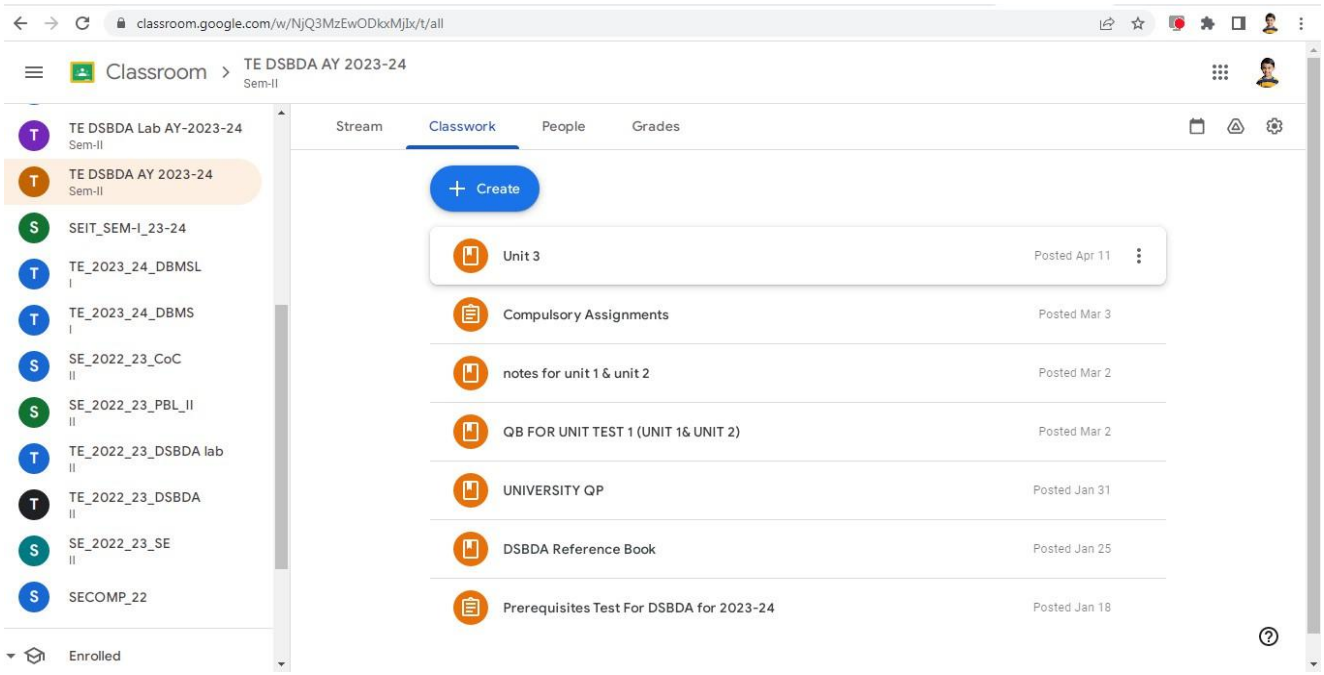
Subject: Audit Course 1 (Awareness to civil Engineering Practices)

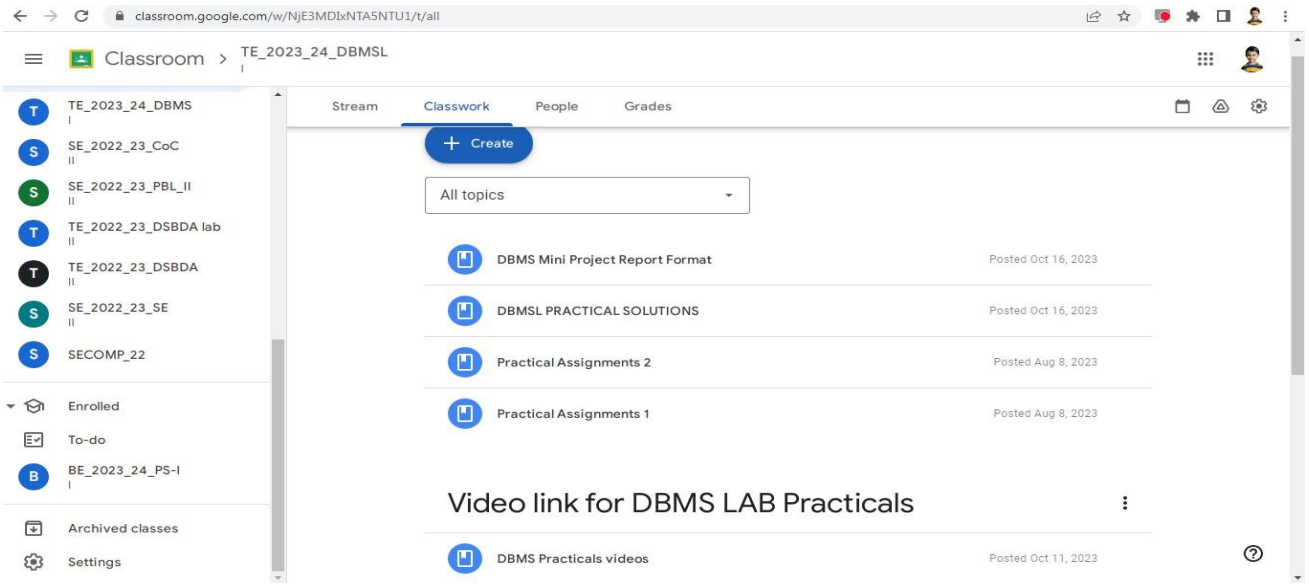
Google Classrooms

Google Classroom brings the benefits of paperless sharing, assessment, and digital collaboration to classrooms.

Department: Computer Engineering

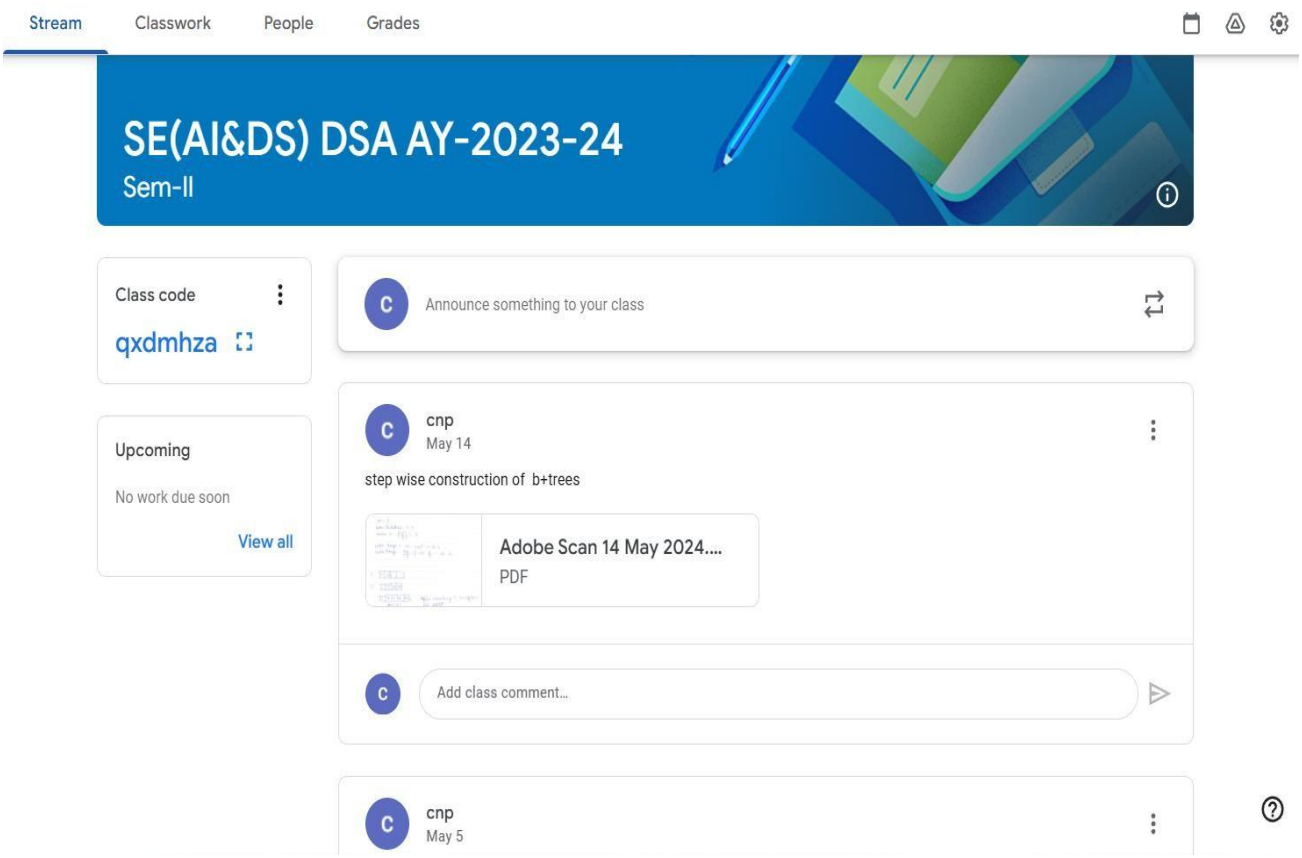
Class: TE





Department: AI&DS

Class: SE



Google Classrooms

A.Y. 2023-24 [Sem I]

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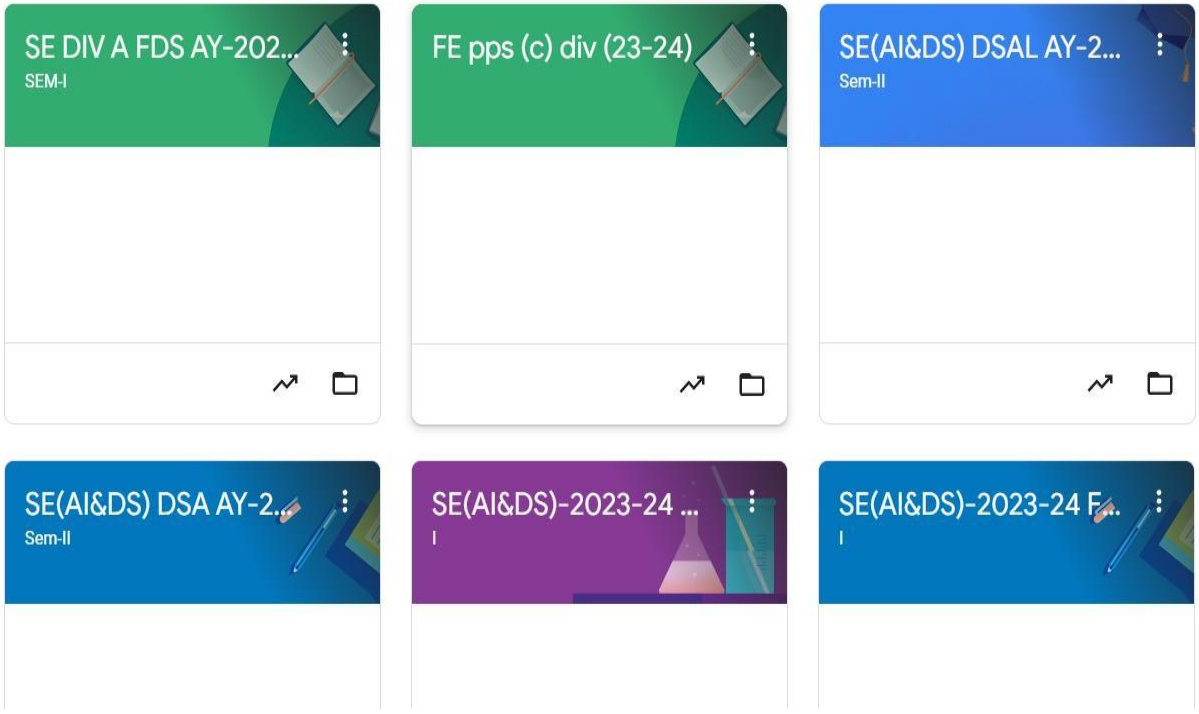
2.	SE AI&DS OOP AY-2023-24 I	https://classroom.google.com/c/NzAyOTAwODYzMTIz	fgkguvj
3.	TE DSBDA AY-2023-24 I	https://classroom.google.com/w/NjQ3MzEwODkxMjIx/t/all	qxdmhza



Department: Information Technology

Class: SEIT

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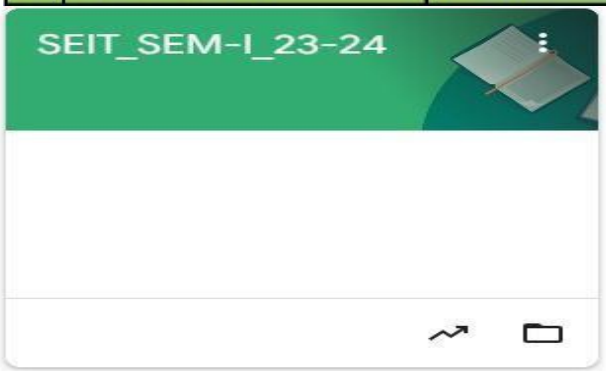
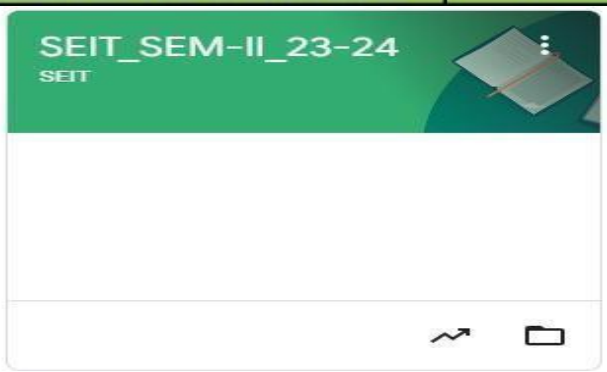
Department of Information Technology

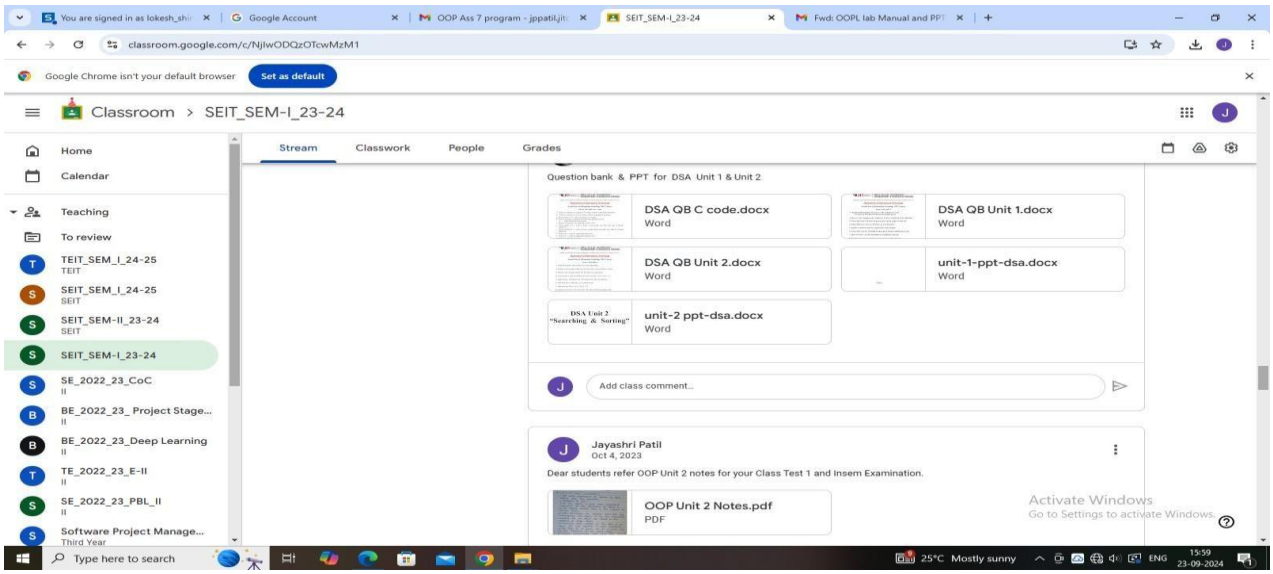
Google Classrooms

A.Y. 2023-24 [Sem - I]

Sr. No.	Classroom	Google Classroom Link	Classroom Code
1	SEIT_SEM-I_23-24	https://classroom.google.com/u/2/c/NjIwODQzOTcwMzM1	wracema
2	SEIT_SEM-II_23-24	https://classroom.google.com/u/2/c/NjQ3MTU3ODg1NzQz	riyqdim

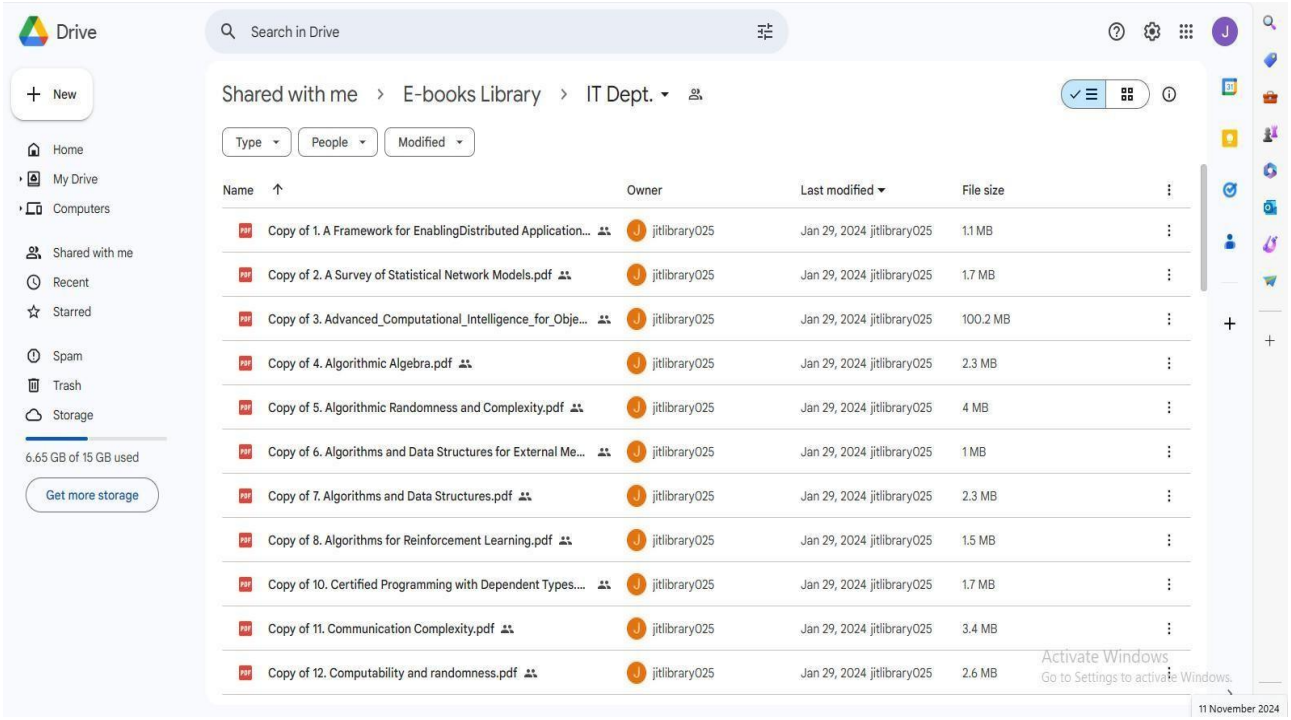


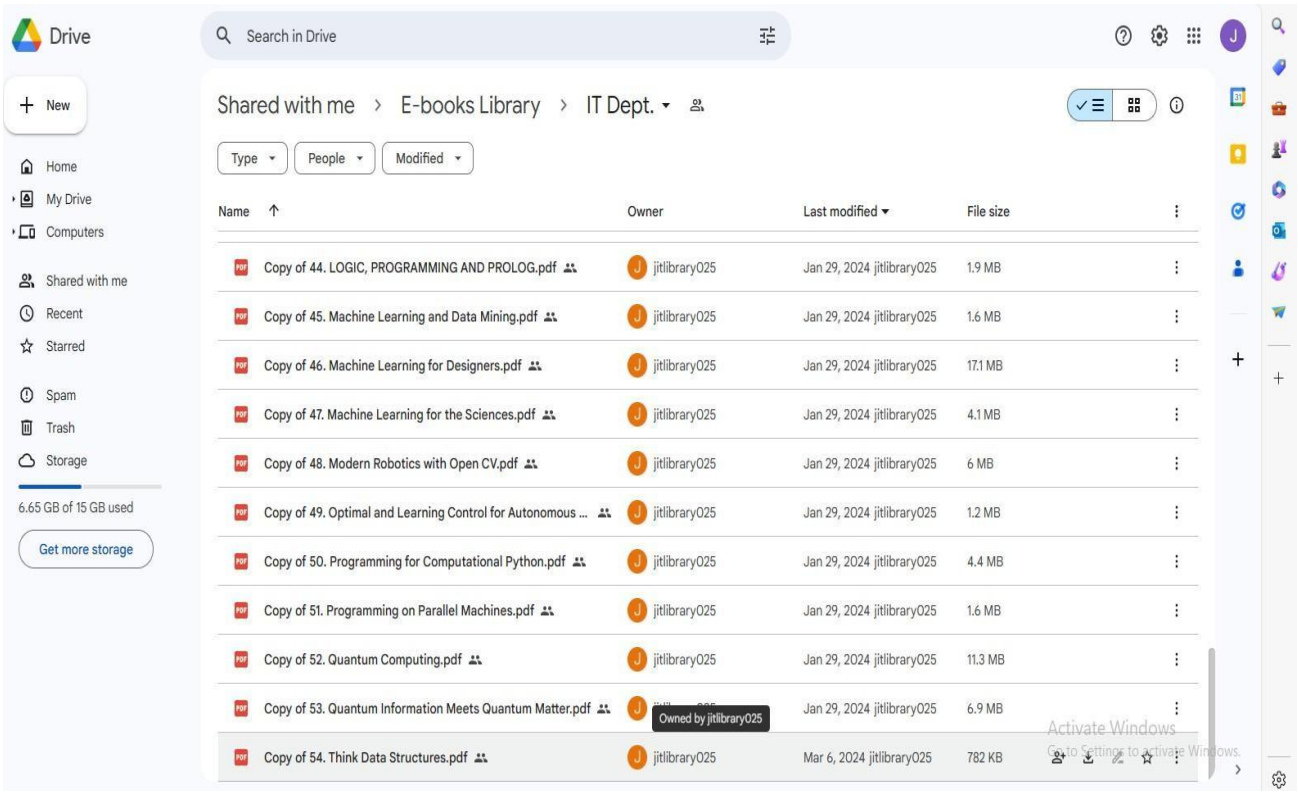




BACK

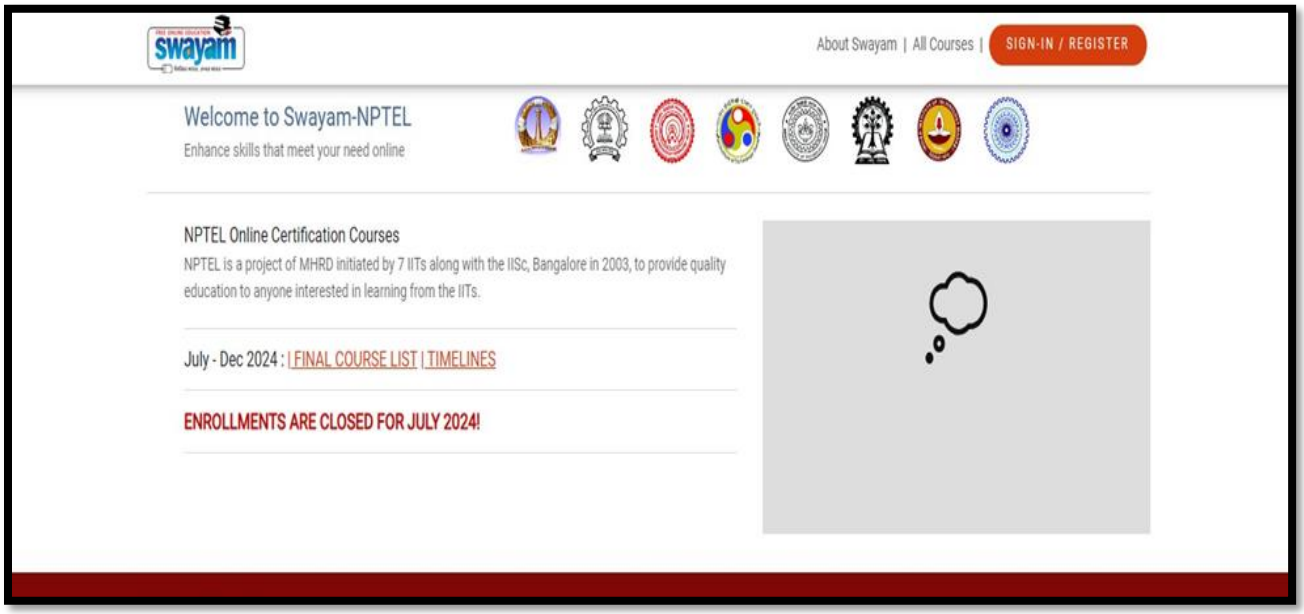
E-Resources & E- Learning

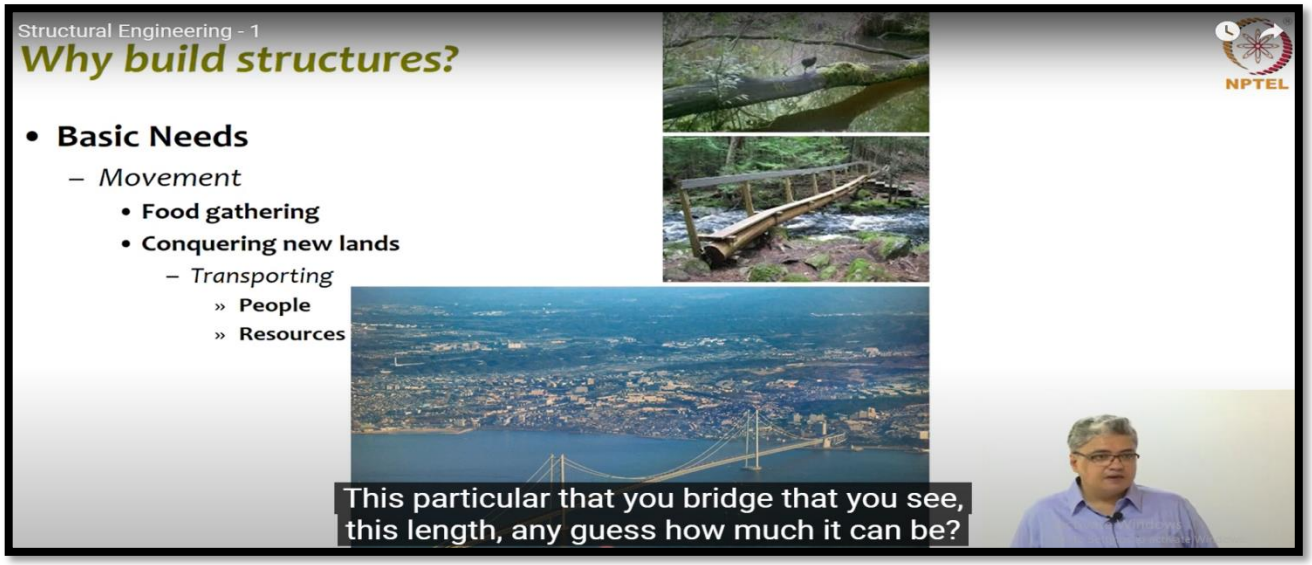




Department of Civil Engineering
E-Resources & E- Learning

NPTEL is a project of MHRD initiated by 7 IITs along with the IISc, Bangalore in 2003, to provide quality education to anyone interested in learning from the IITs.





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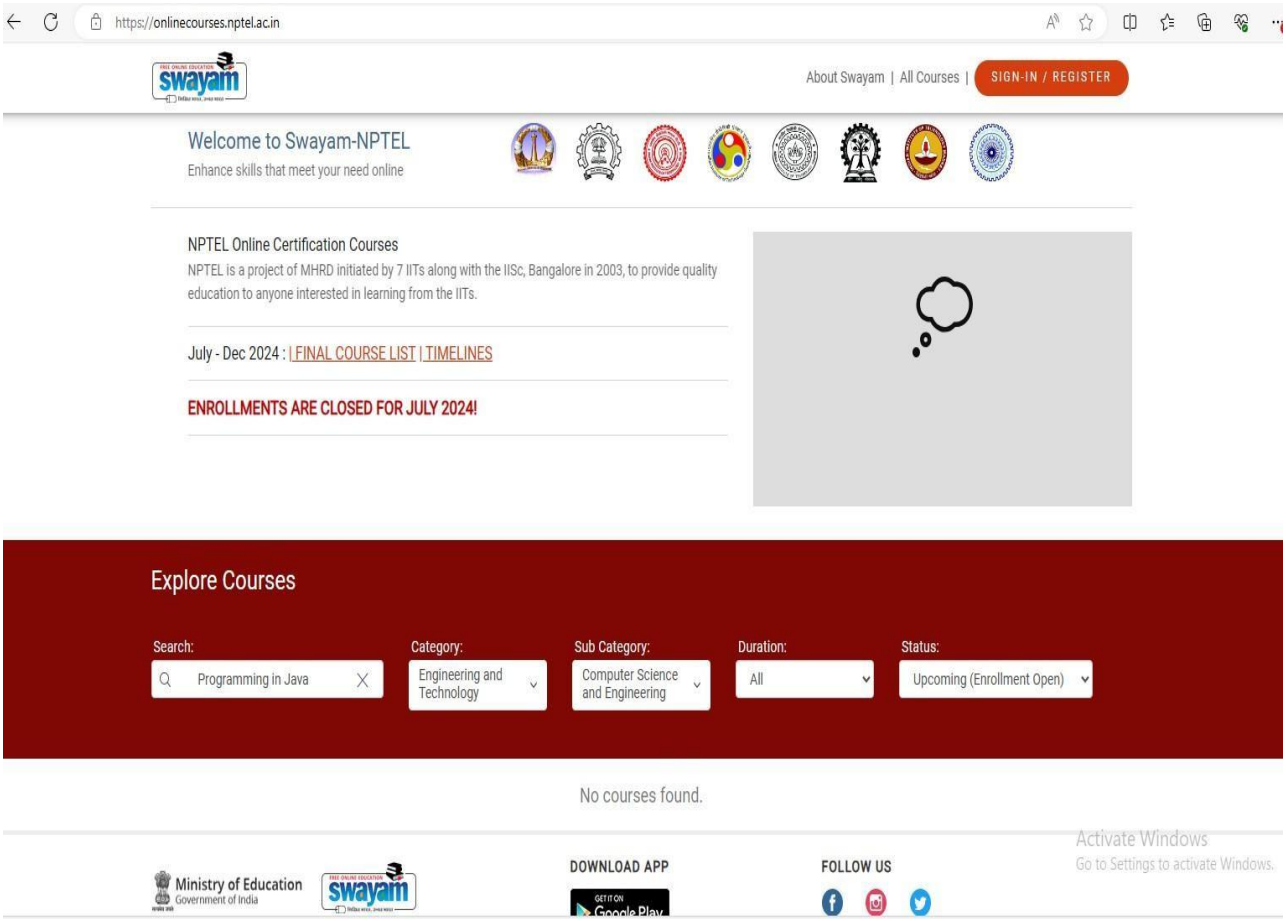
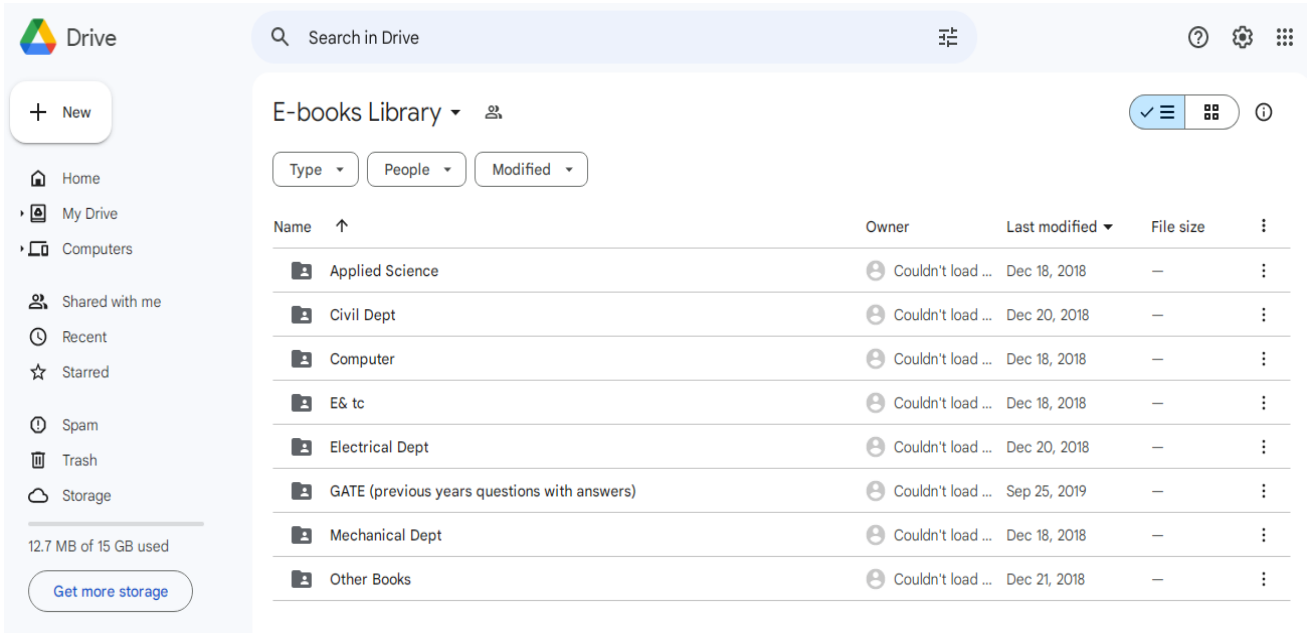
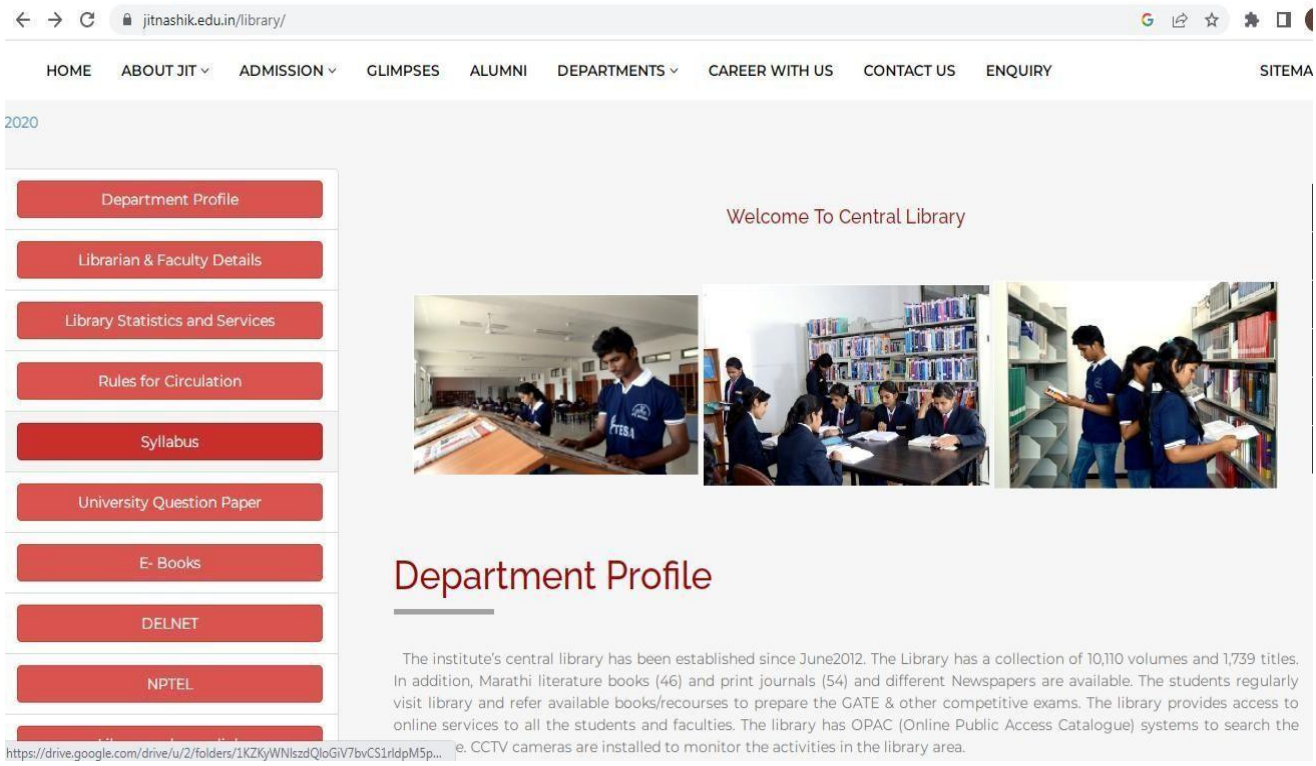


BACK

E-Books & E-Library

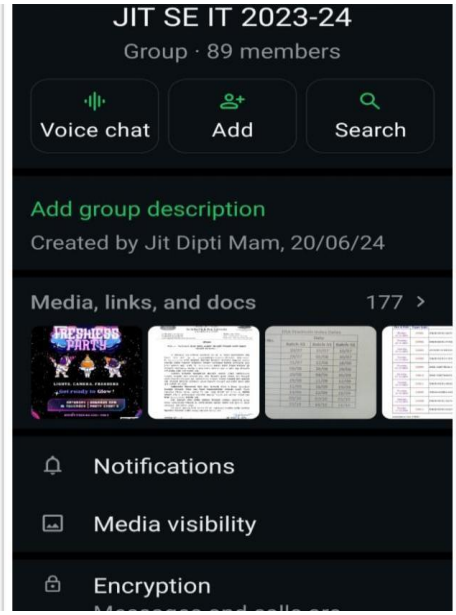


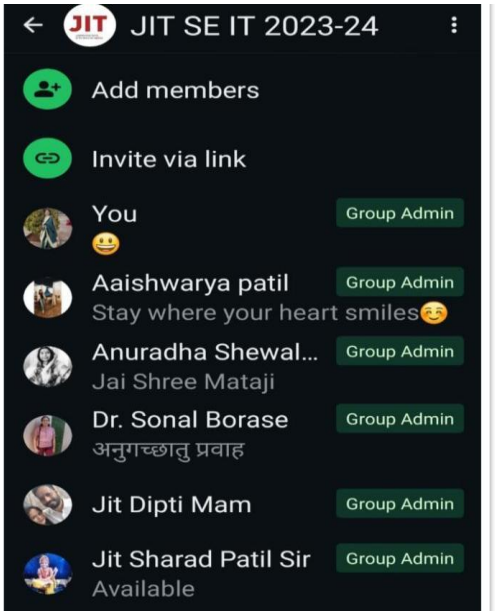


BACK

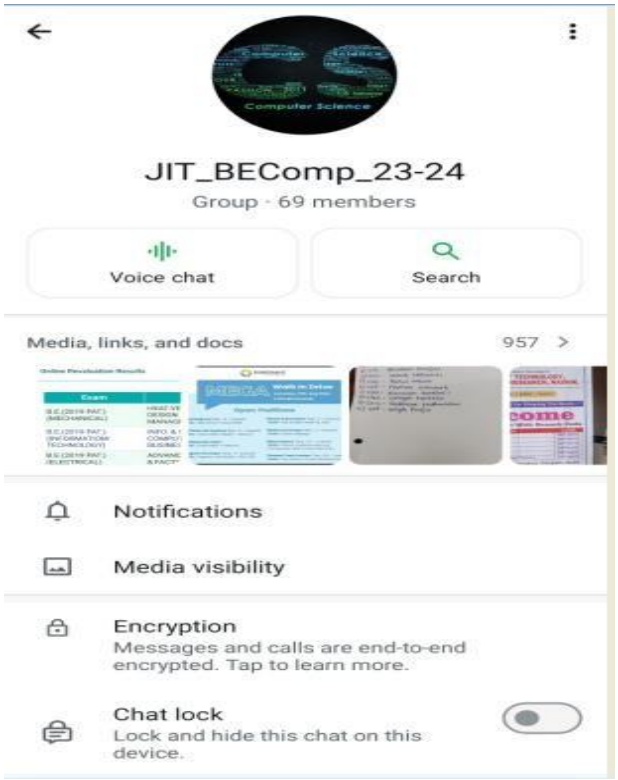
Students Whatsapp Group

Department: Information Technology
Class: SEIT

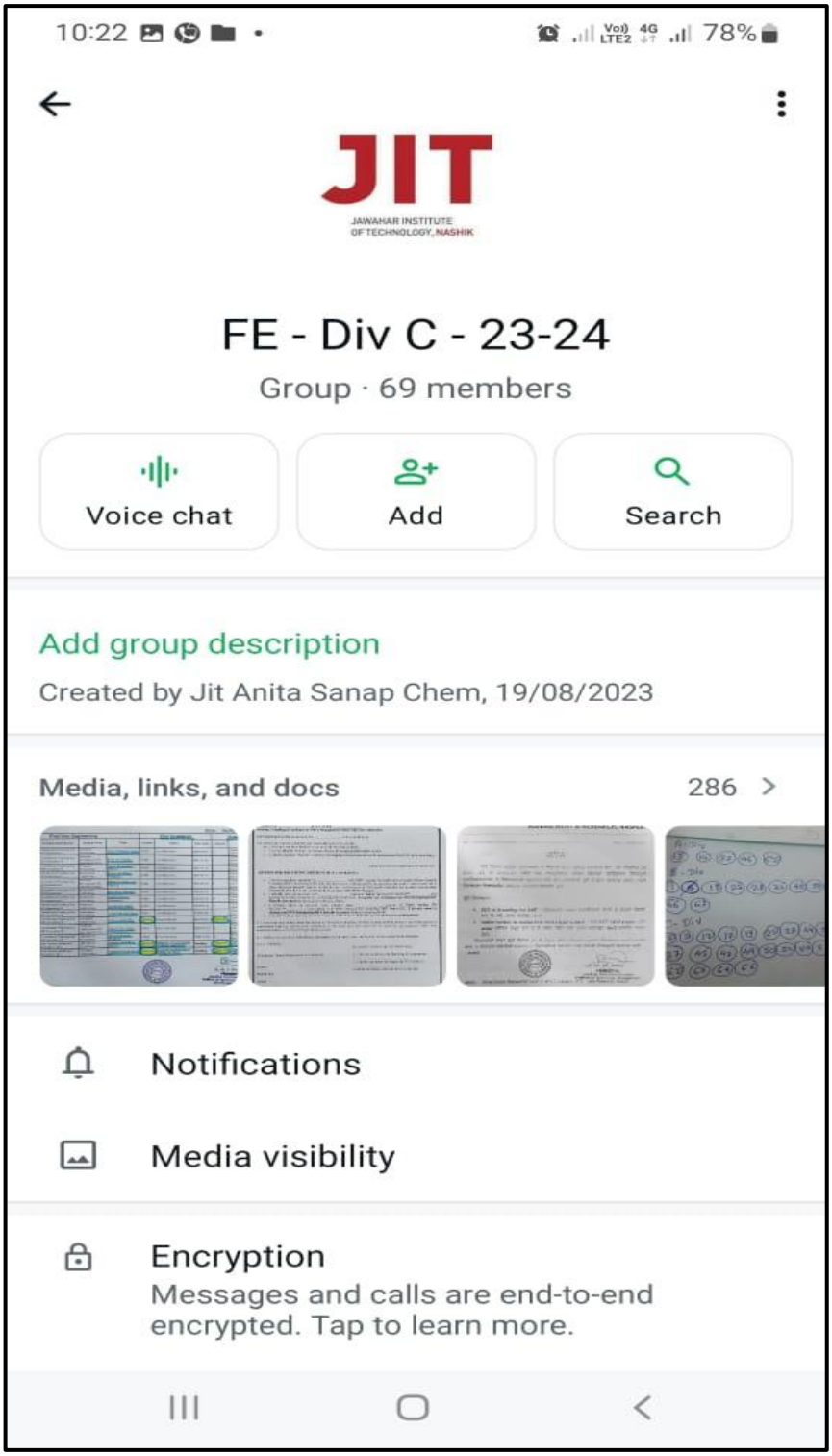


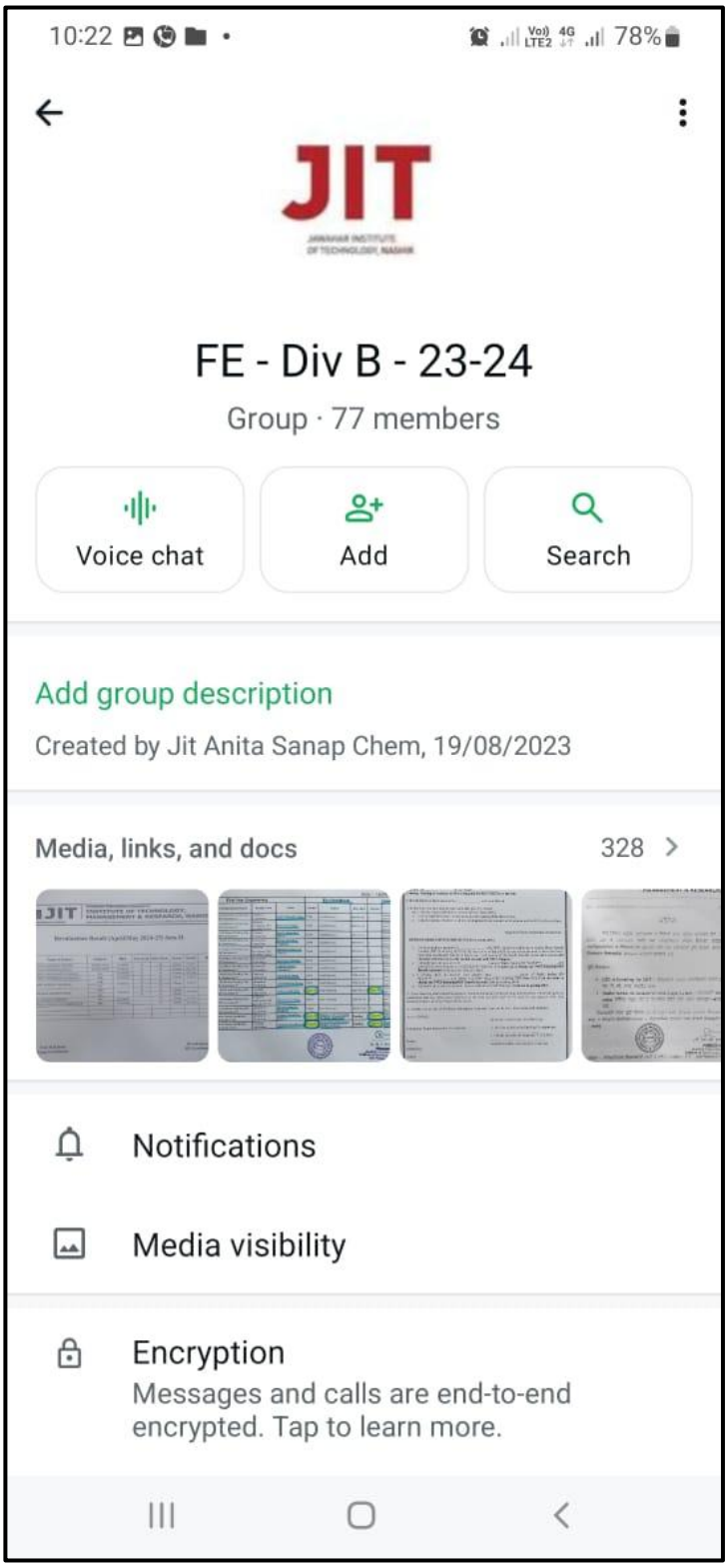


Department: Computer Engineering
Class: BE



Students Whatsapp Group

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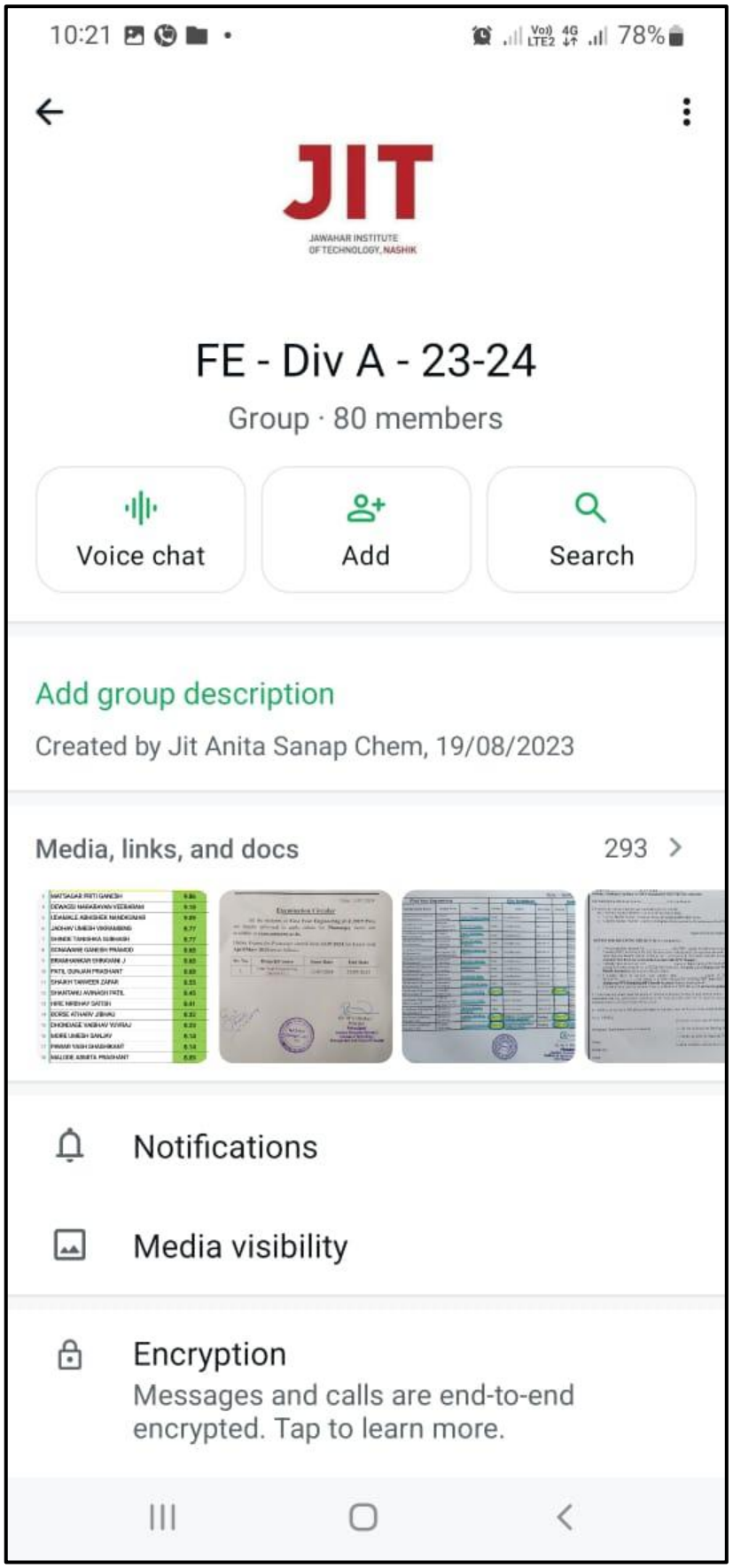
78%
JIT
FE - Div B - 23-24
Group · 77 members
Voice chat
Add
Search
Add group description
Created by Jit Anita Sanap Chem, 19/08/2023
Media, links, and docs
328
Notifications
Media visibility
Encryption
Messages and calls are end-to-end encrypted. Tap to learn more.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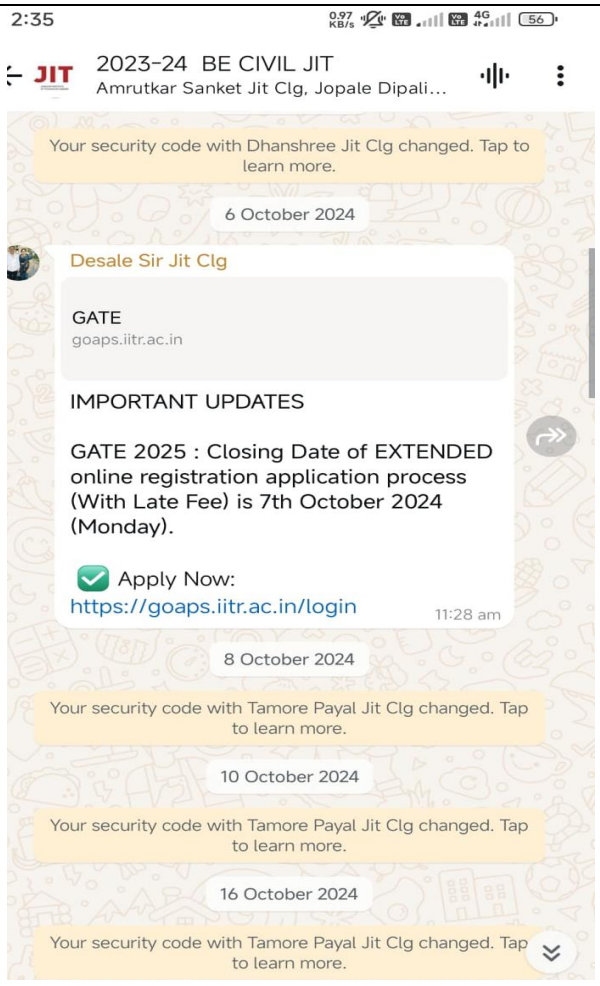
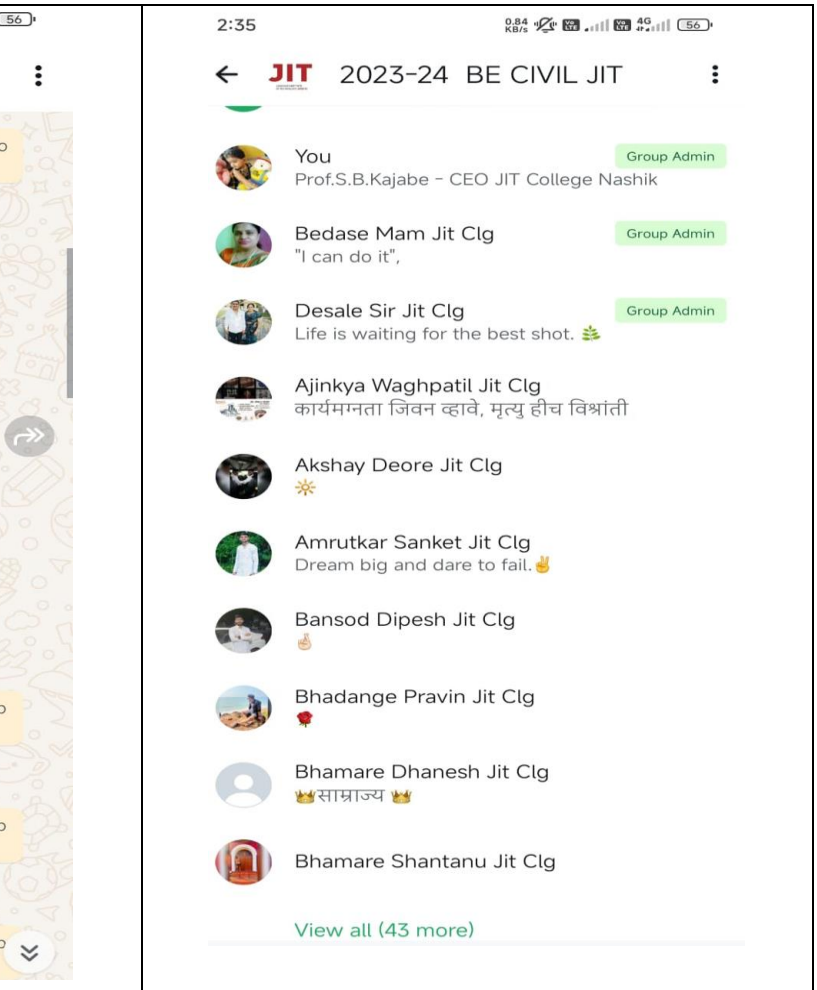
FE - Div A - 23-24
Group · 80 members
Voice chat
Add
Search
Add group description
Created by Jit Anita Sanap Chem, 19/08/2023
Media, links, and docs
293
Notifications
Media visibility
Encryption
Messages and calls are end-to-end encrypted. Tap to learn more.

Department of Civil Engineering

STUDENTS WHATSAPP GROUP 2023-2024





Puzzles

Department: Information Technology

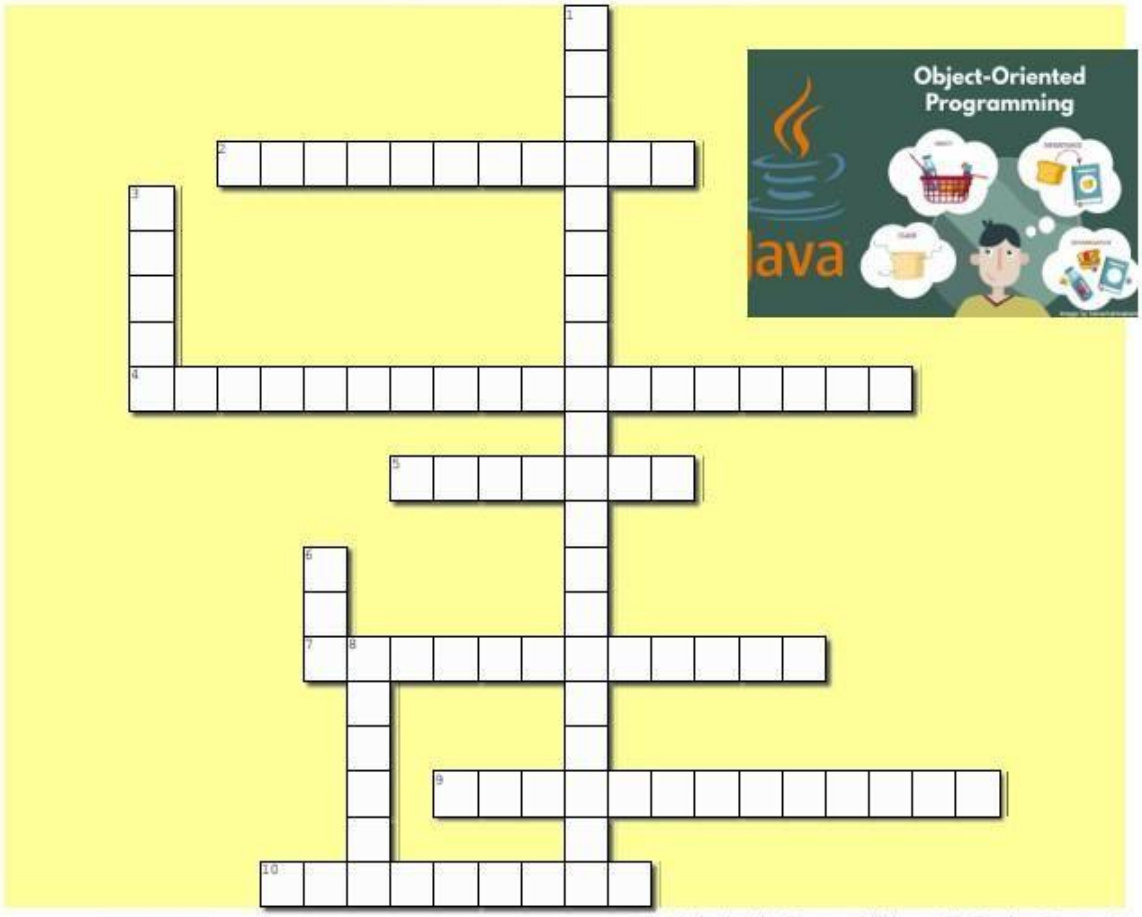
Class: SEIT

Puzzle: Crossword

Name:_____

Object Oriented Programming using Java

Complete the crossword puzzle below



Created using the Crossword Maker on TheTeachersCorner.net

Across

2. a block of code that initializes the newly created object
4. Child class derived directly from the base class
5. linking between method definition and method call.
7. having many forms
9. the binding of data and methods
10. can only have abstract methods.

Down

1. Child class derived from the class which is also derived from another base class.
3. a building block of Object Oriented Programs
6. a programming paradigm where the complete software operates as a bunch of objects talking to each other
8. an instance of a class

Name: Priya Ray

Object Oriented Programming using Java

Complete the crossword puzzle below

							m											
							u											
							l											
			2c	o	n	s	t	r	u	c	t	o	r					
			3c				i											
			l				l											
			a				e											
			s				v											
4s	i	n	g	l	e		i	n	h	e	r	i	t	a	n	c	e	
							l											
			5b	i	n	d	i	n	g									
							n											
		6o					h											
		o					e											
	7p	o	l	y	m	o	r	p	h	i	s	m						
		b					i											
		j				9e	n	c	a	p	s	u	l	a	t	i	o	n
		e					t											
		c					n											
10i	n	t	e	r	f	a	c	e										

Across

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1. Child class derived from the class which is also derived from another base class.
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BACK

Department: Information Technology

Class: SEIT

Puzzle: Scrambled Words

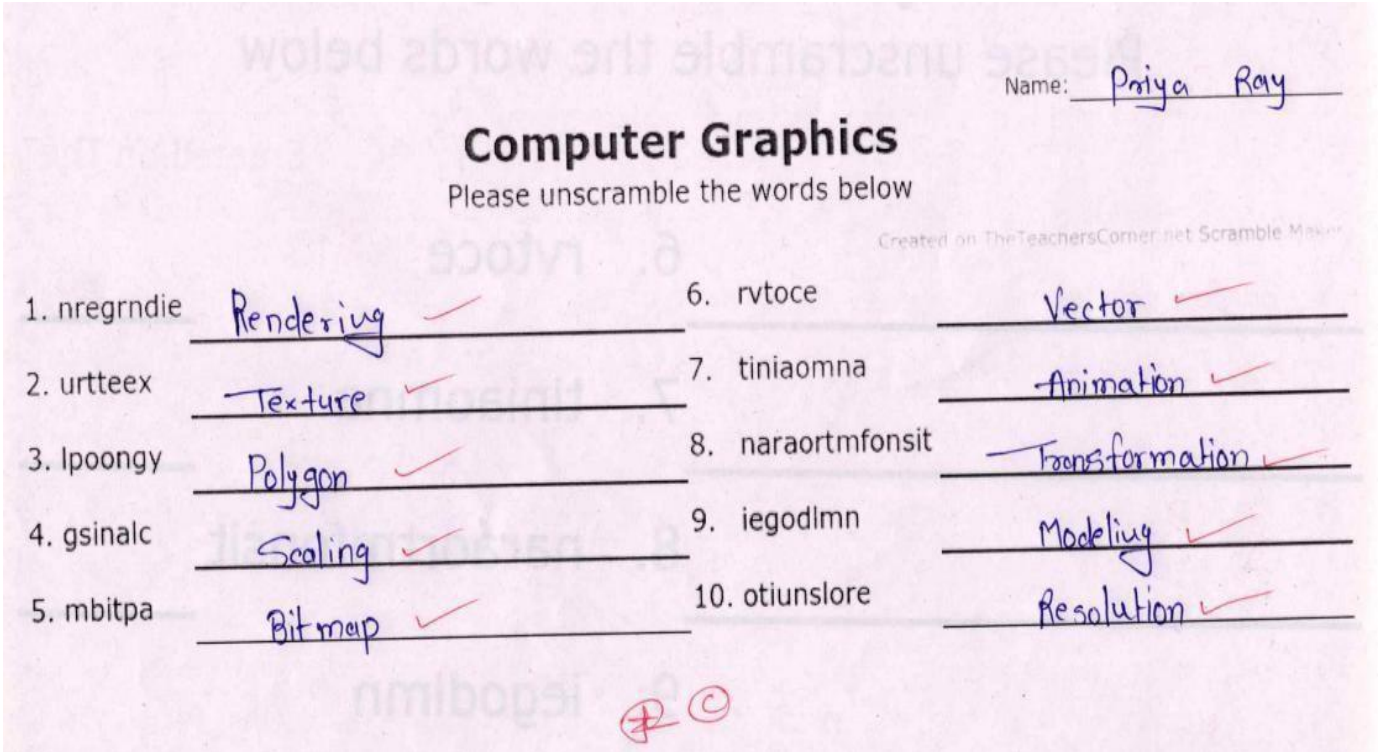
Name: _____

Computer Graphics

Please unscramble the words below

Created on TheTeachersCorner.net Scramble Maker

1. nregrndie		6. rvtoce	
2. urtteex		7. tiniaomna	
3. lpoongy		8. naraortmfonsit	
4. gsinalc		9. iegodlmn	
5. mbitpa		10. otiunslore	



Name: Priya Ray

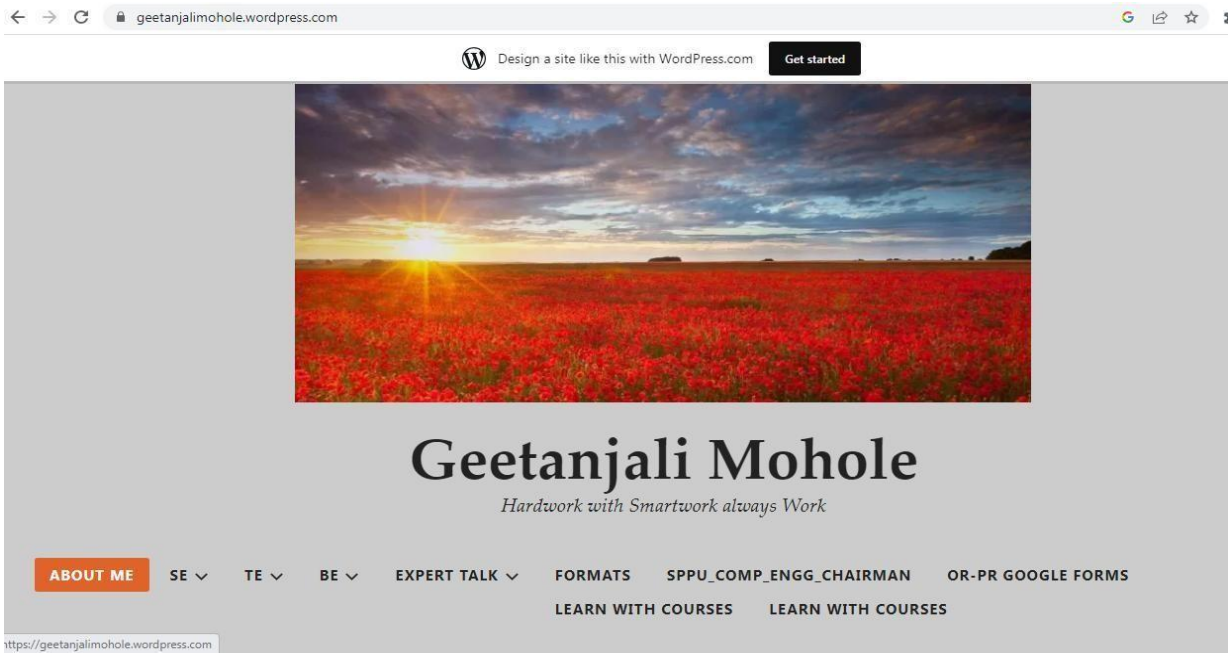
Computer Graphics

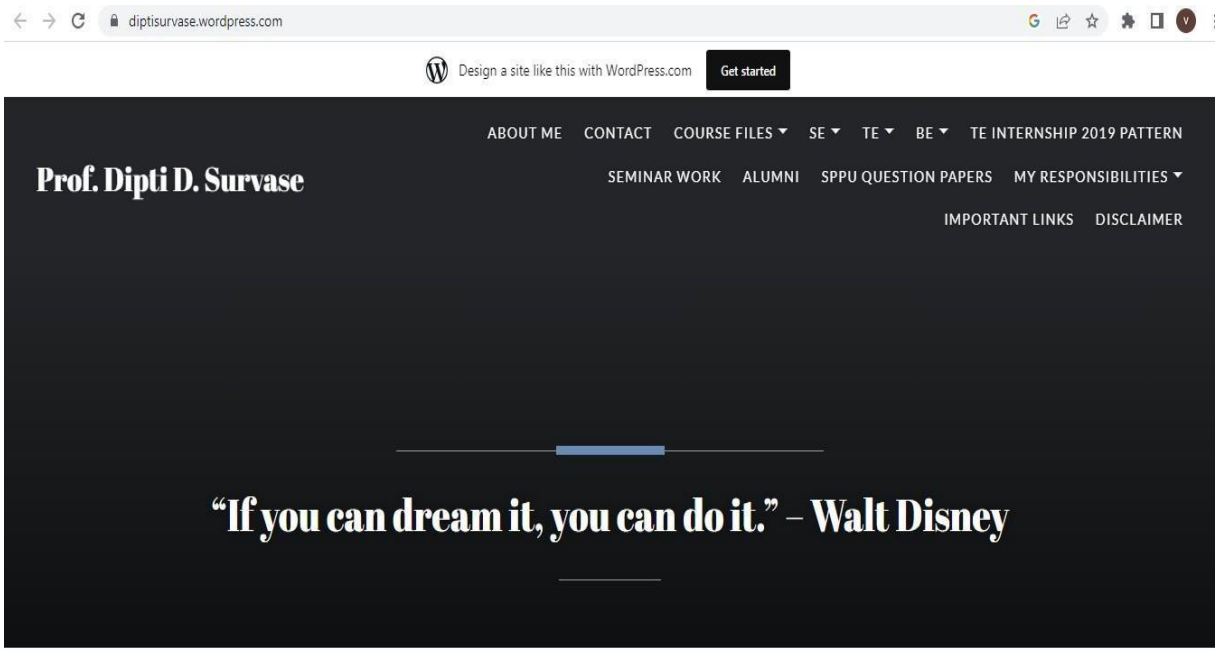
Please unscramble the words below

Created on TheTeachersCorner.net Scramble Maker

1. nregrndie	Rendering ✓	6. rvtoce	Vector ✓
2. urtteex	Texture ✓	7. tiniaomna	Animation ✓
3. lpoongy	Polygon ✓	8. naraortmfonsit	Transformation ✓
4. gsinalc	Scaling ✓	9. iegodlmn	Modeling ✓
5. mbitpa	Bitmap ✓	10. otiunslore	Resolution ✓

Blog Developed and Designed by Faculties



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Designation: Assistant Professor, Department of Computer Engineering
Organization: Jawahar Education Society's, Institute of Technology, Management & Research, Nashik
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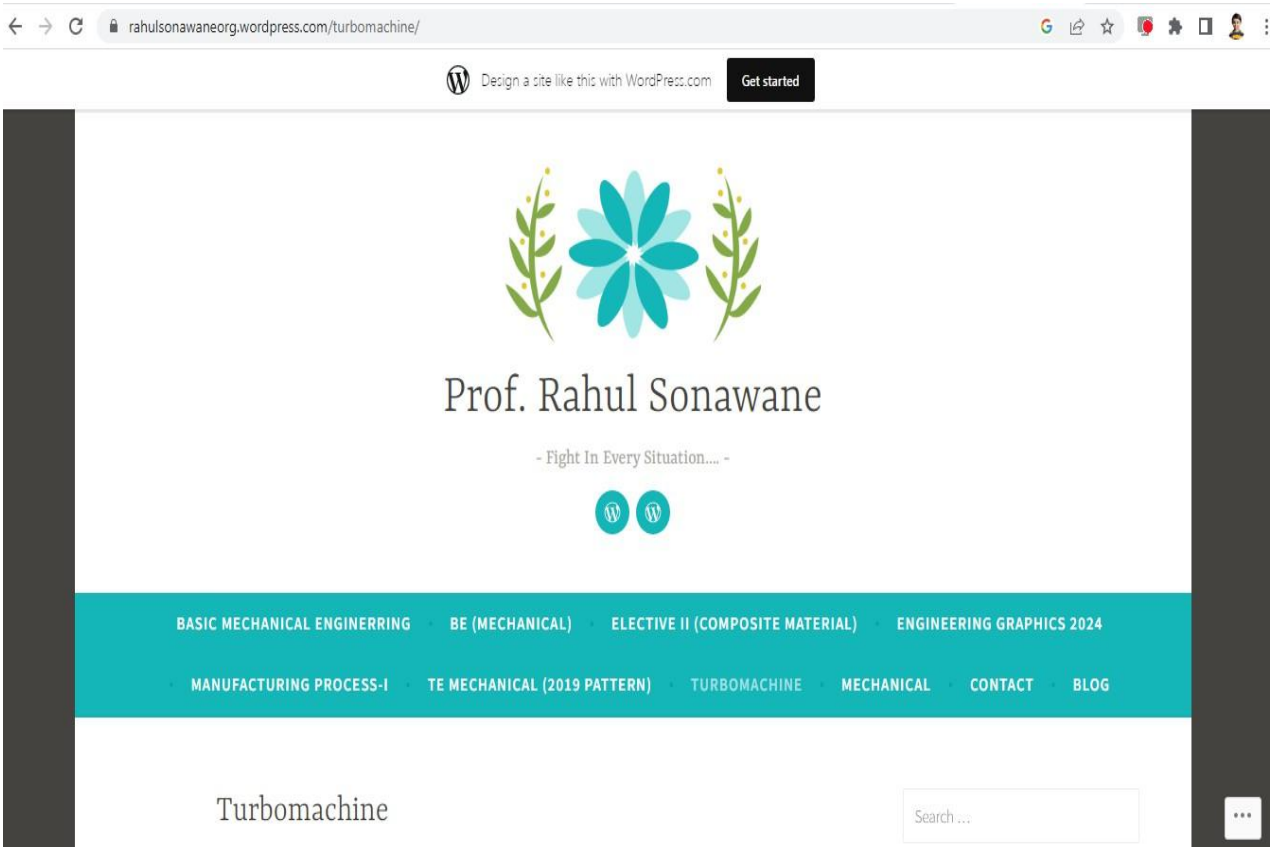
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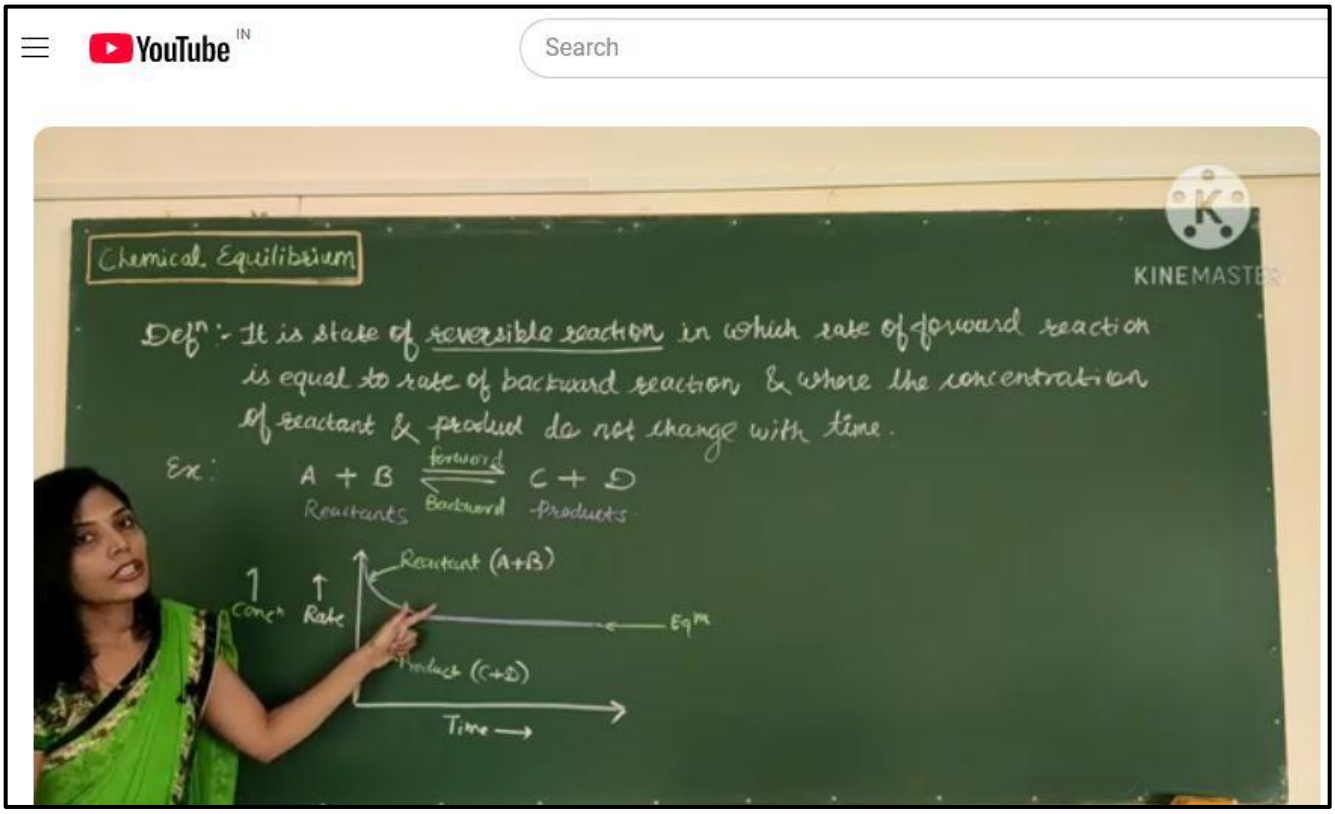

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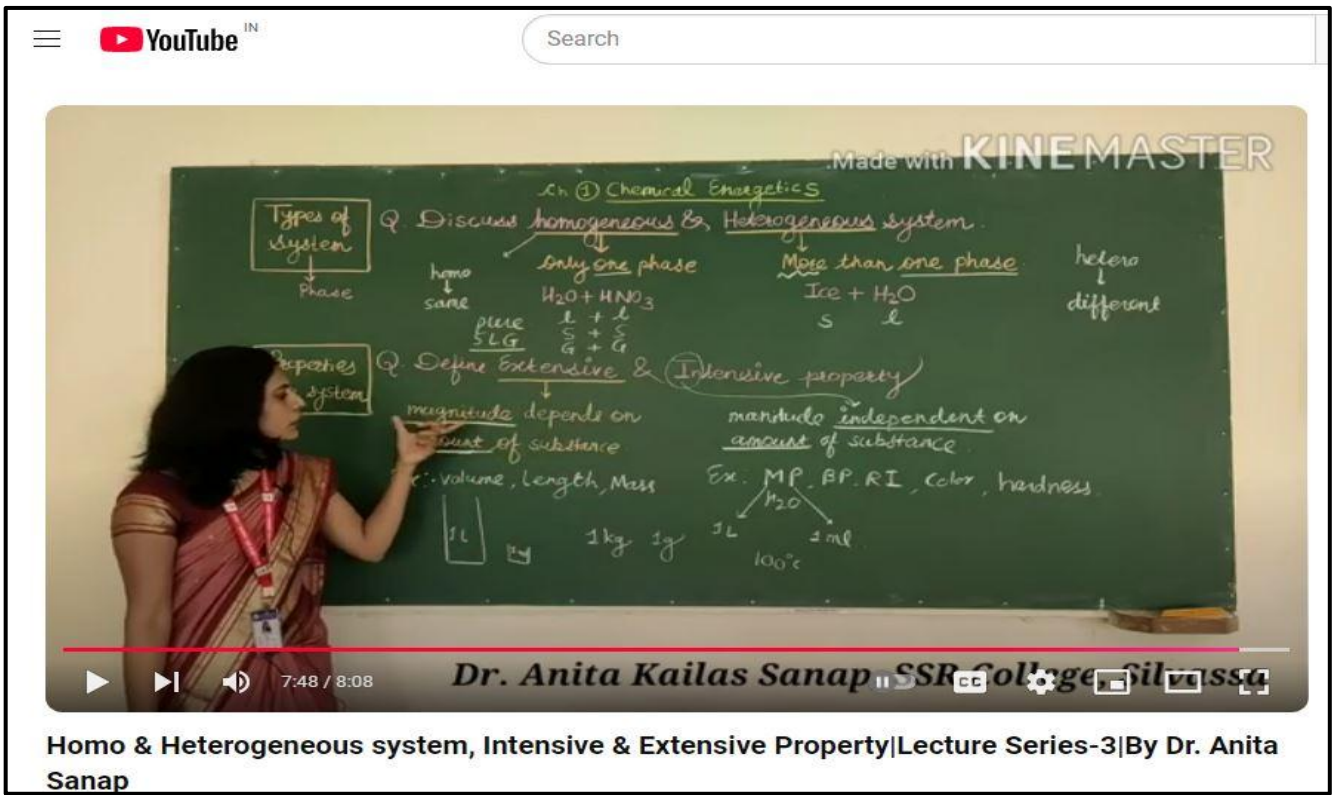

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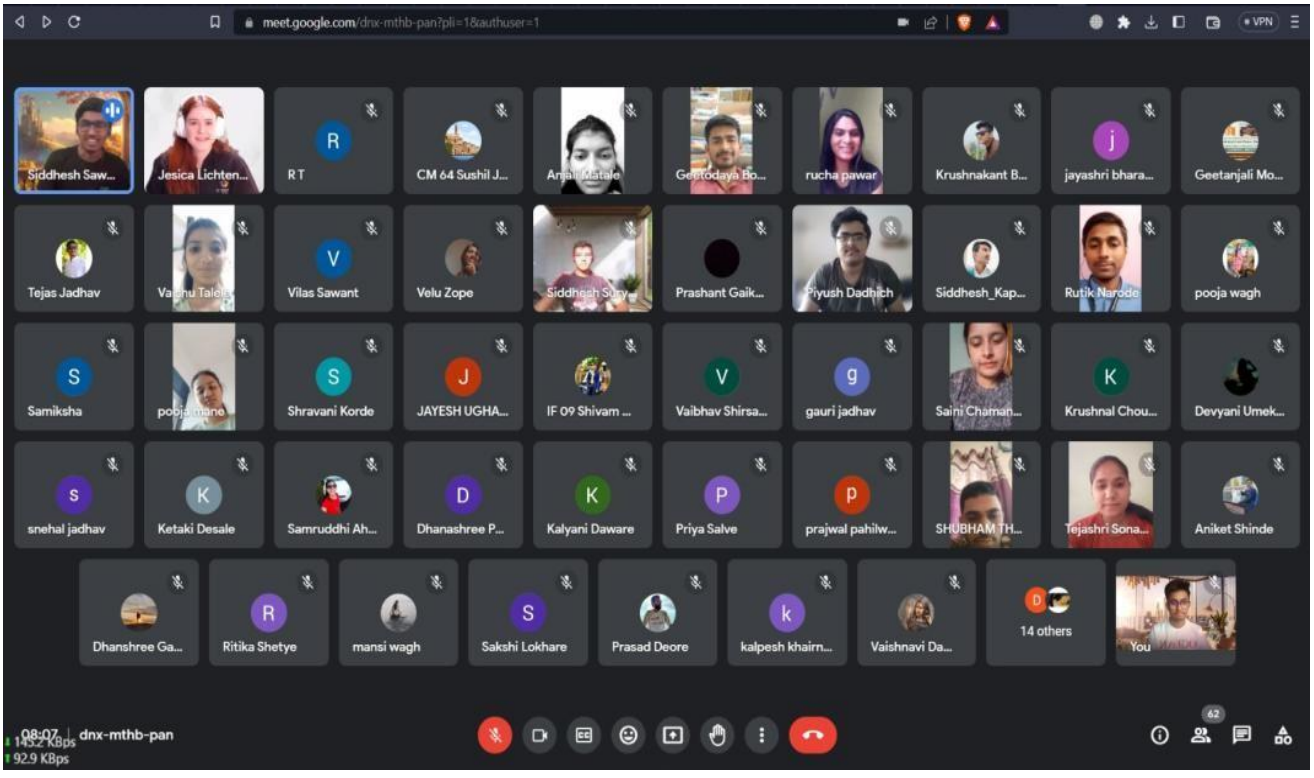
Webinar

Webinar on "Crowdsource" organized by Computer Engineering Department

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