VIGNAN'S NIRULA
INSTITUTE OF TECHNOLOGY & SCIENCE FOR WOMEN
(Approved by AICTE, New Delhi & Affiliated to JNTU Kakinada)
Vignan Avenue, Peda Palakaluru, Guntur - 522009

Department of Information Technology

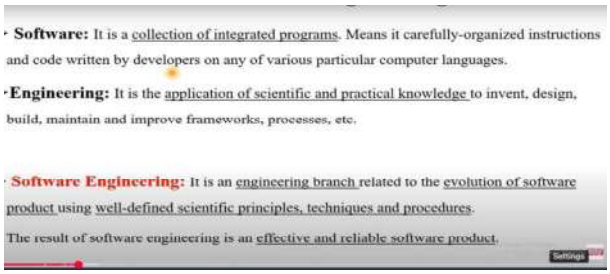
Innovative Teaching Practice

Faculty Name : Mrs. P. Sandhya Krishna, Mr. K. Nageswara Rao
Course Name : Principles Of Software Engineering
Class : II B.Tech II Semester
Academic Year : 2023-2024
Title of the Topic : Advanced Software Testing Techniques
Activity Name : Flipped Classroom

Objective of the Activity:

The objective of the Flipped Classroom is to shift traditional teaching methods by delivering instructional content outside of class, often through videos or online resources, and using in-class time for interactive activities, discussions.

Video Lecture Links



https://youtu.be/IHx9ImEMuzQ?si=DjQYRvoFI8HM3Pmf

Class Activity: Group Discussion

Objective: To understand the Advanced Software Testing Techniques by presenting their key features.

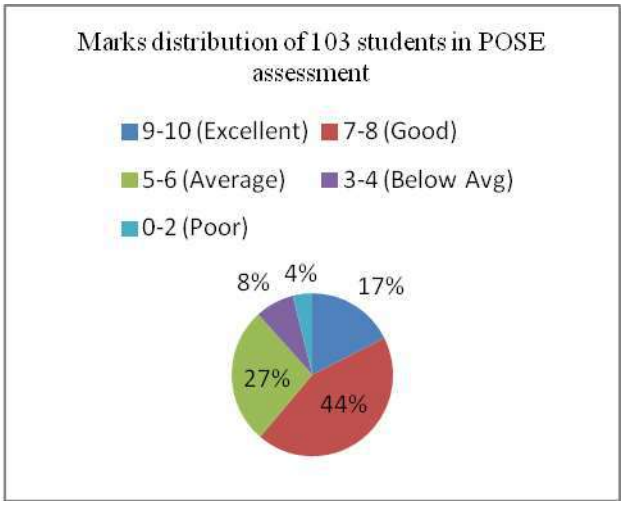
Group Division:

Group A: Test Automation
Group B: Continuous Integration and Continuous Testing
Group C: Test-Driven Development
Group D: Performance and Load Testing
Group E: Security Testing
Group F: Mobile and Cross platform testing

Screenshots of the Practice

Assessment Analysis

Marks Range	Number of Students	Percentage
9-10 (Excellent)	18	17.48%
7-8 (Good)	45	43.69%
5-6 (Average)	28	27.18%
3-4 (Below Avg)	8	7.77%
0-2 (Poor)	4	3.88%
Total	**103**	**100%**



Conclusion

Advanced software techniques are pivotal in developing efficient, scalable, and robust software solutions in today's technology-driven world. By leveraging concepts like advanced algorithms, design patterns, optimization strategies, and emerging technologies, developers can address complex challenges with precision and innovation

Signature of the Faculty **Head of the Department**

Assessment on Principles of Software Engineering

Course Name : Principles of software engineering
Academic Year : 2023-24
Marks : 10 Marks
Time : 10 Minutes
Roll Number :

1. Which design pattern ensures a class has only one instance?
A) Singleton B) Factor C) Observer D) Strategy
2. What is the primary principle behind Test-Driven Development (TDD)?
A) Refactoring B) Testing C) Debugging D) Documentation
3. Which methodology emphasizes incremental development and customer collaboration?
A) Waterfall B) Agile C) V-Model D) Spiral
4. Which of the following principles promotes minimal interaction between components?
A) Encapsulation B) Inheritance C) Coupling D) Cohesion
5. Which design pattern involves creating new objects by cloning existing ones?
A) Builder B) Prototype C) Factory D) Singleton
6. In software architecture, what term refers to breaking a system into smaller, loosely coupled services?
A) Monolith B) Microservices C) Layering D) Componentization
7. What term describes a software system's ability to handle multiple tasks simultaneously?
A) Concurrency B) Parallelism C) Scalability D) Modularity
8. Which principle suggests that a class should have one reason to change?
A) Dependency Injection B) Liskov C) SOLID D) Responsibility
9. Which process ensures that software is continuously updated and tested in a shared repository?
A) Refactoring B) Debugging C) Continuous Integration D) Code Review
10. Which design pattern allows an object to change its behavior based on its state?
A) Observer B) State C) Strategy D) Command

Answers:

Which design pattern ensures a class has only one instance?
A) Singleton
What is the primary principle behind Test-Driven Development (TDD)?
B) Testing
Which methodology emphasizes incremental development and customer collaboration?
B) Agile
Which of the following principles promotes minimal interaction between components?
A)Encapsulation
Which design pattern involves creating new objects by cloning existing ones?
B) **Prototype**
In software architecture, what term refers to breaking a system into smaller, loosely coupled services?
B) Microservices
What term describes a software system's ability to handle multiple tasks simultaneously?
A) Concurrency
Which principle suggests that a class should have one reason to change?
D) Responsibility
Which process ensures that software is continuously updated and tested in a shared repository?
C) Continuous Integration
Which design pattern allows an object to change its behavior based on its state?
B) State