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

Course Information:

Faculty Name : B.Aruna Kumari
Course Name : OOPS Through C++
Class : II B.Tech I Semester
Academic Year : 2023-2024
Activity Name : Mind Mapping
Topic : Templates in C++

Objective of the Activity:

The Object-Oriented Programming (OOP) activity using C++ was designed to help students The Templates activity using C++ was designed to help students understand how to effectively use templates, focusing on:

Pre-Class Preparation:

Students should review the fundamentals of templates in C++, focusing on function and class templates, generic programming principles, template specialization, and template parameters, while analyzing sample code and preparing questions for clarification before the activity.

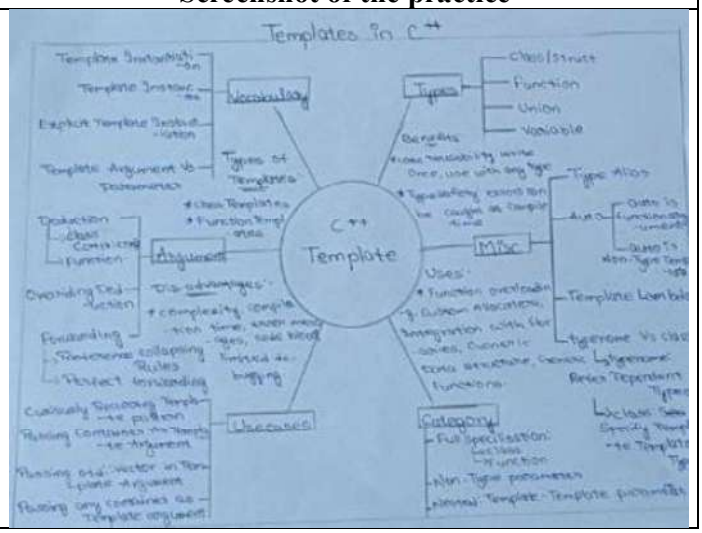
In-Class Mind Mapping:

- Students are divided into small groups, each assigned a scenario involving templates in C++.
- Groups start with a main concept e.g., Templates, branching into related concepts like Function Templates, Class Templates, Template Specialization, and Generic Programming.
- Students visualize how these concepts interact, identifying where to apply function templates for de reuse, how to use class templates to create generic classes, and when to implement template specialization for specific data types.

Group Discussion and Refinement:

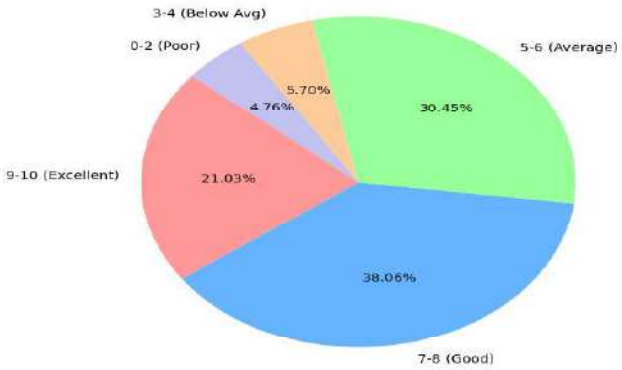
- After creating their initial mind maps, groups discuss and refine their templates maps based on feedback from peers.
- Each group explains their approach to implementing templates, focusing on function templates, class templates, template specialization, and generic programming.
- They discuss the design choices they made, how they ensured code reuse through function templates, how they structured their class templates for flexibility, and how they utilized template specialization for optimized performance.

Images / Screenshot of the practice

Mind Mapping Activity	Screenshot of the practice
Activity on Mind Map on the Topic Templates in C++ By **22NN1A01212**	

Assessment analysis:

Marks range	Number of students	percentage
9-10 (Excellent)	22	21.05%
7-8 (Good)	40	38.10%
5-6 (Average)	32	30.48%
3-4 (Below Avg)	6	5.71%
0-2 (Poor)	5	4.76%
Total	105	100%



Benefits of practice

1. **Enhances Understanding**: The activity aids students in grasping how to use templates effectively by breaking down complex concepts into manageable components.
2. **Encourages Creativity**: Students explore various ways to implement templates, fostering innovative solutions and enhancing their coding proficiency.

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