

#### **Electronics & Telecommunication Engineering**

Academic Year – 2024-2025	Class: Second Year
Semester – II	Date : 25/03/2025 to 21/04/2025
CO: 1,2,3,4,5,6	PO: 1,2,3,4 ,10,12

#### **Innovative Teaching Methods**

#### Title of Innovation method/activity: Project Based Learning

- 1. Name of Faculty: Mr. Viraj R Sonawane.
- 2. **Subject** : Object Oriented Programming

#### 3. Objective of Method:

- 1. Apply the concept of Object-Oriented Programming in the real-life problem.
- 2. Develop problem solving, and Critical Thinking ability in Student.

#### 4. Topic Covered through Activity:

Fundamental Feature of Object-Oriented Programming.

- Class and Object
- Polymorphism (Compile and Run Time)
- Inheritance
- Abstraction

## 5. Description of method with Benefits (8 – 10 lines) :

Project-Based Learning (PBL) is a dynamic and engaging approach to education where students actively explore real-world problems and challenges to acquire deeper knowledge. Students work on projects over an extended period, which allows them to apply their theoretical understanding in practical scenarios.

## **Key Features of PBL:**

• **Real-world Relevance:** Projects are often rooted in real-world issues or challenges.

- Student-Centered: Learners take ownership of their work and decisions.
- **Collaboration:** Encourages teamwork and communication among peers.
- Critical Thinking and Creativity: Students analyze, create, and innovate to solve problems.
- Assessment: Learning is assessed through the process and final outcomes rather than just exams.

## **Roles and Responsibilities**

- Teacher
  - Provide the Introduction to all the topic.
  - Aware the student about the length, Breadth, Depth of Topic
  - Provide the Study Material and appropriate guide lines at every stage
  - Remain available all the time during all stages of process.
  - Prepare assessment methodology.

## • Student

- Go through all the material provided on particular topic.
- Identify the project in nearby vicinity which is aligned with core concept learned.
- Actively participate in group and contribute by means of discussion, hand-out.
- Share the expertise topic when joins a new group.

## • Group

- Develop the guidelines to establish group.(i.e. Decide the roll of all participants)
- Develop the guidelines with which every group member can share the topic they learn.
- Asses the project work using self-evaluation sheet with rubric.
- Make appropriate changes in the work done to gain maximum using rubric.

#### 6. Assessment Tools & Rubrics:

РО	9,10	1,2,3,4	5,12		
Criteria	Code Quality (10 Marks)	Implementation of OOP Principles (10 Marks)	Innovative Solution (10 Marks)		
Excellent (9- 10)	Code is clean, well-documented, and follows consistent naming conventions. Adheres to best practices in OOP design.	Comprehensive use of encapsulation, inheritance, polymorphism ,and abstraction; <b>solutions are</b> <b>innovative and practical.</b>	Demonstrates exceptional creativity and <b>originality</b> in approach; uses OOP concepts in unique and effective ways. [ <b>Real Life Problem</b> <b>Addressing</b> ]		
Good (7-8)	Code is mostly clean, with minor inconsistencies or limited documentation.	Effective application of principles with minor omissions.	Shows creativity with a mostly <b>unique approach</b> ; some potential for further enhancement.		
Satisfactory (5-6)Code is functional but lacks clarity or proper structure.		Some principlesPartially creative but rimplemented, but with gaps oron standard approachincorrect applications.without much original			
Needs Improvement (0-4)	Code is disorganized or lacks basic readability.	<b>Limited</b> or incorrect use; reliance on procedural coding.	Lacks innovation; solution is <b>basic</b> or derivative.		

## 7. Evaluation Sheet

## A. Self-Evaluation by Student

Student were given a rubric for evaluation and assessment 2 week before the submission of the work and asked to evaluate their own project, and make appropriate changes in the project to gain maximum using rubric chart. Student were also asked to take review from classmate and friend from other department.

This helped student to improvise and critically think about their project which eventually helped to improve the quality of overall project submission of the class.



#### **B.** Evaluation by Course Teacher

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Roll Number	First Name	Last Name	Code Quality (10 Marks)	Implementation of OOP Principles (10 Marks)	Innovative Solution (10 Marks)	Total	Sign
1	Janhavi	Ahirrao	8	6	6	KC	OLAHISEN
2	Urmila	Amrutkar	6	6	C	10	tota mote
3	Arnav	Deshmukh	4	4	1.	10	Noch
4	Apurva	Arote	6	E	4	10	AL OF
5	Bhushan	Aswale		0	- 12	12	Vulle
6	Durvesh	Bagul	6	6	7	19	Quel
7	Yuvraj	Bhosale	R	6	7	11	upi o
8	Sanika	Bodke	F	6	C	19	Toms
9	Aarti	Boraste			0	1-12	Change 2
10	Duhita	Borse	8	7	C	-	allard
11	Tanmay	Chaudhari	•		6	21	UNDOR
12	Tejal	Chaudhari	-8	9	9	20	All

			G	9	9	26	Shavan
13	Siddhi	Chavan	0	5	6	18	
14	Komal	Chavhan	5	6	0	17	N'S'Dergale
15	Nikhil	Dengle	3	6	6	20	4
16	Snehal	Deore	8	6	6	18:	A
17	Tejaswini	Devare	6	6	0	18	Talamane
18	Trupti	Dhamane	6	6	6	10	(and a
19	Digambar	Dharrao	6	6	6	10	and
20	Ayush	Dhivare			-	02	(Spl x) E
21	Sanika	Dixit	8	7	-1	1.0	Parto
22	Shivam	Gadekar	6	6	6	18	Quinie
23	Harshala	Garje '	6	6	6	18	Quint
24	Ayush	Gatkal	6	6	6	18	Harka
25	Subodh	Gawale	5	5	5	15	By and
26	Nirmal	Gawali	6	6	5	17	gallet
, 27	Sahil	Gawali				_	
28	Sakshi	Gawali	7	6	6	19	gawell
29	Riya	Ghegadmal					
30	Yadnesh	Gunjal	6	6	5	17	BUDEN
31	Harsh	Patil	7	7	7	21	an
32	Nikita	Hire	8	7	7	22	Devices
33	Shivani	Jadhav	8	6	6	20	telar
34	Shravani	Jadhav	F	7	F	21	SATCHEN
35	Vidya	Jadhav	8	-7	7	22	Tighou
36	Vedant	Jagtap					
37	Sakshi	Kale	6	6	6	18	tare
38	Siddhesh	Kale		0.004			
39	Komal	Kardel	8	8	8	24	ame
40	Siddharth	Kedare	G	6	6	19	Alla
41	Dipak	Khade	¢.	0		10	98.5
42	Gargi	Khairnar			-	-	
43	Rupali	Kuwar	1.1.1			-	
44	Rohit	Mahajan					
45	Mayuri	Mali	R	A	8	24	(1. )
46	Sahil	Mandlik	7	7	7		Nout
47	Shardul	Mangrulkar	a	9	a	21	Ame
47	Riddhi	Metkar	P	A	0	25	au
40	Abbinay	Mogal	8	a	8	2	Romengi
50	Shrushti	Naphada	8	6	0	20	ALS ST
51	Khuchi	Nikam	0	6	0	22	Hono
52	Cogor	Nikam	6	6	6	18	Acres
52	Sagar	Nikam	6	0	6	18	- teager.
55 .	Vaishnavi	Pagar	6	6	5	17	Druger
54	Disha	Patil	6	6	6	18	Renter
-55	Divya	Patil	8	2	7	22	Telt
56	Purab	Patil	1	1	4	12	Ratis
57	Rushikesh	Patil	.5	5	5	14	There
58	Siddesh	Patil	7	7	6	20	Satif.
59	Prabha	Pawar	G	6	6	18	(2 para
60	Siddhant	Pawar	6	6	7	19	-8
61	Samip	Pimpalkar	7	7	6	20	Semo.
62	Yachana	Rajput	8	7	7	12	Mathet
the second se						-	



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64	Sanika	Raut	+	6	6	19	Saute:
65	Sanskruti	Raut	F	6	6	10	Sansaul
66	Nishant	Salke	75	75	36	22	6. B
67	Manoj	Salunke			-		
68	Aditya	Sandhan	6	6	6	( e	Handle.
69	Sakshi	Shelke	7	7	7	01	tonig
70	Vaishnavi	Shinde	7	8	6	21	Jus 1.
71	Saurabh	Singh	5	5	5	15	Sundar
72	Revti	Solanke		20	1		
73	Suyash	Sonawane			-	0.0	th.
74	Yukta	Sonawane	7	Ŧ	6	20	Ted
75	Saburi	Targe	8	6	6	20	mbult
76	Avashi	Vadodkar	+	6	6	19	HADDERKA

Mr. V. R. Sonawane OOP Course In charge

# 8. Impact Analysis 68 Response

SN	Yes	No	Maybe
Do you find Methodology Helpful	66	1	1
Does this helps for building a core competence in OOP	63	-	5
Does the Guidelines given were relevant	65	-	3
Do You Find Discussion with Mentor During Process Helpful	65	1	2
Would you like to participate in activity again	61	2	5

9. For review and critique contact: e-mail address of faculty and HOD Sonawane.viraj@kbtcoe.org hod@kbtcoe.org

HoD

Subject In charge

Module Coordinator