Department of Electronics & Telecommunication Engineering

Academic Year – 2025-26	Class: Third Year
Semester – II	Date : 8 -11-2025
CO: 1,2,3,4,5,6	PO: 1,2,5,9,12

Innovative Teaching Methods

Title of Innovation method/activity: Project Based Learning

1. Name of Faculty : Ms. T.S.Deshmukh.

2. Subject : Fundamental of Java Programming

3. Objective of Method:

- **To apply core Java concepts in developing real-world mini-projects, strengthening problem-solving and coding skills.**
- **To enhance teamwork, creativity, and practical understanding of the software development process through hands-on project implementation.**

4. **Topic Covered through Activity**:

Class , Object, Encapsulation, Inheritance/interface/Exception handling, DBMS connectivity,GUI.

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

- Project-Based Learning (PBL) is an instructional approach where students learn Java programming by designing, developing, and implementing real-world mini-projects. Instead of only practicing small programs, students work on complete applications that integrate Java concepts such as OOP, arrays, strings, functions, and file handling. Throughout the project, students identify a problem, plan the solution, write and test Java code, and present a working model.

The method :

- Students identify a suitable problem statement and plan the solution using Java concepts.
- They develop and test the application step-by-step to ensure correct functionality.
- Finally, they prepare a structured report documenting the design, implementation, and results of the project.

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
    - Once topic assigned understand and gain expertise on topic through collaboration.
    - 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)
    - Every group should gain the expertise on particular topic.
    - Prepare at least one page Hand-out / Report which cover all the details corresponding to the topic.
    - While preparing the report make sure all the content are covered.
    - Appropriate references should be given.
    - Grammatical mistake should be checked.
    - Develop the guidelines with which every group member can share the topic they learn

6a. Topic

1. Library Management System
Develop a system where students can **register, login, borrow/return books**, and view borrowed history. Admin can **add/update/delete books**. Use JDBC for all database interactions.

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2. Student Course Registration System
Create a platform for **students to enroll in courses**, check grades, and view course schedules. Admin can **add courses, assign teachers**, and monitor enrollments. Use JDBC to manage relational data.

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3. Online Banking System
Develop a Java application where users can **create accounts, deposit, withdraw, and transfer money**. Admin can view all accounts and transactions. Use JDBC to store **account info and transaction history**.

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4. Hotel Reservation System
Build a system to **book rooms, check availability, and cancel reservations**. Admin can manage rooms, prices, and reservations. Use JDBC to handle **room details, booking, and customer data**.

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5. Employee Management System
Create a system for a company to **store employee details, track attendance, and manage salaries**. Admin can add/update/delete employee records. JDBC should handle all CRUD operations.

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6. Inventory Management System
Design an application where users can **add products, update stock, and track sales**. Admin can generate reports of low-stock items. JDBC should manage **products, sales, and stock tables**.

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7. Online Movie Ticket Booking System
Develop a Java application to **book, cancel, and view movie tickets**. Admin can **add movies, show timings, and manage bookings**. JDBC handles **movies, users, and bookings data**.

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8. Hospital Management System
Build a system to **register patients, schedule appointments, and track medical history**. Admin can **add doctors, assign schedules, and view patient data**. JDBC handles all relational data storage.

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9. E-Commerce Order Management System
Develop a Java application where users can **browse products, place orders, and track order status**. Admin can **add/update/delete products, manage inventory, and view sales reports**.

- Use JDBC to manage **products, users, orders, and payments** tables.
- Include features like **search products by category** and **order history** for users.

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10. College Attendance Management System
Create a system for **recording and monitoring student attendance**.

- Teachers can **mark attendance for each class**.
- Students can **view their attendance record**.
- Admin can **add/update courses, students, and teachers**.
- JDBC should handle all operations on **students, courses, teachers, and attendance** tables.

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11. Online Food Delivery System
Build a system where customers can **register, view restaurants and menus, place orders, and track delivery**.

- Admin can **manage restaurants, menu items, and orders**.
- JDBC handles **users, restaurants, menu, orders, and delivery data**.
- Include a **reporting feature** to view most ordered items or top customers.

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12. You may select any project topic of your preference.

Each project includes:

- **CRUD(Create, Read, Update, Delete operations) operations using JDBC**
- **Relational database schema** (tables, primary/foreign keys)
- **Java application logic** with **OOP concepts**
- Optional: **Reports, search, and validation features**

6b. Assessment Tools & Rubrics :

Java + JDBC Project Rubric (30 Marks)

Criteria	Description	Marks
1. Java Programming & OOP Concepts	Proper use of classes, objects, methods, inheritance, encapsulation. Code is modular and readable.	12
2. JDBC & Database Operations	Correct use of JDBC to connect to database, execute CRUD operations, handle exceptions.	10
3. Functionality & Logic	Project meets core requirements (login, add/view/update data, etc.) and works correctly without runtime errors.	6
4. Documentation / Code Comments	Code is well-commented. Minimal report explaining design decisions, database schema, and program flow.	2

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7. **Evaluation Sheet**

Sn	Name	Java Programming & OOP Concepts (12)	JDBC & Database Operations (10)	Function-ality & Logic (6)	Documen Tation (2)	Final Marks
1	Janhavi Ahirrao	**10**	**10**	**6**	**2**	**28**
2	Apurva Arote	**10**	**10**	**6**	**2**	**28**
3	Urmila Amrutkar	**10**	**10**	**6**	**2**	**28**
4	Bhushan Aswale	**6**	**10**	**6**	**2**	**24**
5	Durvesh Bagul	**6**	**10**	**6**	**2**	**24**
6	Yuvraj Bhosale	**6**	**10**	**6**	**2**	**24**
7	Sanika Bodke	**9**	**10**	**6**	**2**	**27**
8	Aarti Boraste	**9**	**10**	**6**	**2**	**27**
9	Duhita Borse	**6**	**10**	**6**	**2**	**24**
10	Tanmay Chaudhari	**6**	**10**	**6**	**2**	**24**
11	Tejal Chaudhari	**6**	**10**	**6**	**2**	**24**
12	Digambar Dharrao	**6**	**10**	**6**	**2**	**24**
13	Siddhi Chavan	**6**	**10**	**6**	**2**	**24**
14	Snehal Deore	**9**	**10**	**6**	**2**	**27**
15	Arnav Deshmukh	**6**	**10**	**6**	**2**	**24**
16	Ayush Dhivare	**6**	**10**	**6**	**2**	**24**
17	Shivam Gadekar	**6**	**10**	**6**	**2**	**24**
18	Ayush Gatkal	**6**	**10**	**6**	**2**	**24**
19	Shivani Jadhav	**9**	**10**	**6**	**2**	**27**
20	Shravani Jadhav	**7**	**10**	**6**	**2**	**25**
21	Vidya Jadhav	**7**	**9**	**6**	**2**	**24**
22	Sakshi Kale	**6**	**10**	**6**	**2**	**24**
23	Siddhesh Kale	**5**	**6**	**6**	**2**	**19**

24	Komal Kardel	**7**	**10**	**6**	**2**	**25**
25	Gargi Khairnar	**8**	**10**	**6**	**2**	**26**
26	Rupali Kuwar	**6**	**10**	**6**	**2**	**24**
27	Mayuri Mali	**6**	**10**	**6**	**2**	**24**
28	Sahil Mandlik	**8**	**10**	**6**	**2**	**26**
29	Shardul Mangrulkar	**6**	**10**	**6**	**2**	**24**
30	Riddhi Metkar	**9**	**10**	**6**	**2**	**27**
31	Abhinav Mogal	**6**	**10**	**6**	**2**	**24**
32	Khushi Nikam	**6**	**10**	**6**	**2**	**24**
33	Vaishnavi Pagar	**6**	**10**	**6**	**2**	**24**
34	Disha Patil	**9**	**10**	**6**	**2**	**27**
35	Divya Patil	**9**	**10**	**6**	**2**	**27**
36	Siddesh Patil	**6**	**7**	**6**	**2**	**21**
37	Prabha Pawar	**8**	**10**	**6**	**2**	**26**
38	Siddhant Pawar	**6**	**10**	**6**	**2**	**24**
39	Samip Pimpalkar	**7**	**10**	**6**	**2**	**25**
40	Yachana Rajput	**7**	**10**	**6**	**2**	**25**
41	Arati Raut	**9**	**10**	**6**	**2**	**27**
42	Sanika Raut	**6**	**10**	**6**	**2**	**24**
43	Sanskruti Raut	**8**	**10**	**6**	**2**	**26**
44	Nishant Salke	**7**	**9**	**6**	**2**	**24**
45	Aditya Sandhan	**9**	**9**	**6**	**2**	**26**
46	Sakshi Shelke	**8**	**10**	**6**	**2**	**26**
47	Vaishnavi Shinde	**6**	**10**	**6**	**2**	**24**
48	Suyash Sonawane	**6**	**10**	**6**	**2**	**24**
49	Yukta Sonawane	**9**	**10**	**6**	**2**	**27**
50	Saburi Targe	**6**	**10**	**6**	**2**	**24**
51	Ayushi Vadodkar	**9**	**10**	**6**	**2**	**27**
52	Purab Patil	**6**	**10**	**6**	**2**	**24**
53	Saurabh Singh	**6**	**8**	**6**	**2**	**22**
54	Rushikesh Patil	**6**	**8**	**6**	**2**	**22**

8. **Impact Analysis**

SN	4-Excellent	3- High	2- Moderate	1- Slight
Do you find Methodology Helpful	**90%**	**9%**	**1%**	-
Does this helps for building a good team	**90%**	**9%**	**1%**	-
Does the content covered are relevant	**88%**	**8%**	**4%**	-
Would you like to participate in activity again	**100%**	-	-	-

9. **Activity Picture:**

10. **For review and critique contact: e-mail address of faculty and HOD**
tejaswini.deshmukh@kbtcoe.org

Ms. T.S.Deshmukh
Subject In charge

Dr. B.N.Rajole
HoD