Report on Project-Based Learning Program

Date: October 24th, 2025

Venue: CS Lab, Bishop Jerome Institute

Organised by: Department of Computer Science & Engineering, Bishop Jerome Institute (In association with ACM Students' Chapter)

Program Overview:

The Department of Computer Science & Engineering at Bishop Jerome Institute conducted a comprehensive Project-Based Learning (PBL) session focused on CS, DS & AI domains. The program aimed to enhance practical skills through real-time projects and was held on October 24th, 2025, from 9:00 AM to 4:30 PM in the CS Lab.

Participants:

Students from S3 batches of Data Science (DS), Computer Science Engineering (CSE), and Artificial Intelligence (AI) actively participated in the session, applying their classroom knowledge into practical projects.

Resource Person:

Dr. Shiju Thomas M.Y, Associate Professor at Rajagiri College of Social Sciences, led the session, providing deep insights into project development, implementation, and effective use of technologies in computer science projects.

Mini Project Guidelines Provided to Students:

1. **Project Development Environment:**

   Students were guided to use *NetBeans IDE* for Java-based project development.

   2. *Database Connectivity: *
   Emphasis was given on integrating *SQL databases* (MySQL/PostgreSQL) with Java applications using *JDBC* (Java Database Connectivity).
   - Steps included setting up the database, creating tables, and configuring connection strings in NetBeans.
   - Students learned to perform CRUD operations (Create, Read, Update, Delete) through the application.

   3. ***Form Creation in NetBeans:***

Students developed *login and registration forms* using NetBeans Swing GUI builder. These forms were connected to the backend database for authentication and user management.

4. *Theoretical Object-Oriented Concepts in Projects:*

Students were encouraged to apply key *Object-Oriented Programming (OOP)* concepts in their mini projects.

5. *Problem-Solving and Debugging:*

The session included addressing common issues like:

- Database connection failures
- SQL syntax errors
- Handling exceptions in Java
- Troubleshooting NetBeans configuration errors
- Ensuring proper closing of database connections to prevent memory leaks

6. *Best Practices: *

Students were encouraged to follow modular coding, proper commenting, and version control for better project maintenance.

Program Activities:

- Hands-on sessions where students created mini projects implementing database connectivity and OOP principles.
- Interactive discussions on project challenges and solutions.
- Guidance on integrating project learning with theoretical knowledge.
- Encouragement to work collaboratively and share learnings among peers.

Outcomes:

- Students successfully created functional Java applications with database integration, applying strong OOP principles.
- Improved skills in NetBeans IDE, Java Swing, SQL databases, and Object-Oriented design.
- Enhanced problem-solving abilities through real-time debugging exercises.

- Positive feedback on the effectiveness of project-based learning in understanding complex theoretical and practical concepts.

Coordinators:

- ***Convenor:*** Ms. **Deepa Rajan S, HoD & Associate Professor, CSE, BJI**
- ***Coordinators:*** **Ms. Amrita G I and Ms. Raseena A, Assistant Professors, CSE, BJI**

Acknowledgments:

The Department expresses gratitude to **Dr. Shiju Thomas M.Y** for his expert guidance and all participants for their active involvement. The event marks a significant step in strengthening practical and theoretical learning through projects.