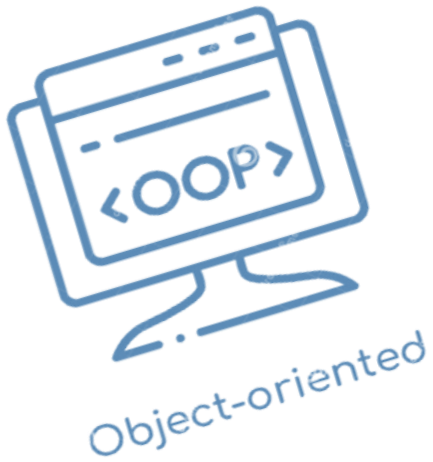
O.O.P FINAL PROJECT

2nd Year CC computer Engineering

Description of the Project

Welcome ! This project for your Object-Oriented Programming (OOP) course is your chance to showcase your mastery of OOP concepts and translate theoretical knowledge into practical software development.



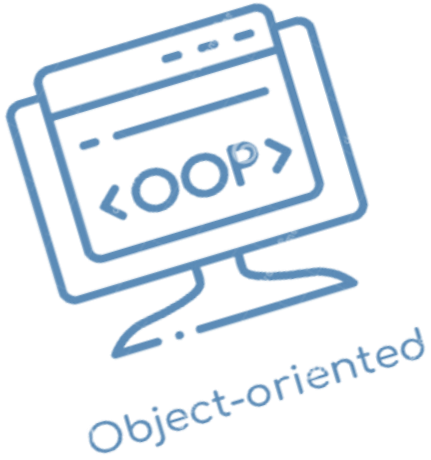
TWO IMPORTANT STARTING IDEAS

THEORY

Detailed report documenting your project's design and implementation

PRACTICE

developing real-world applications using object-oriented principles and JAVA programming language



MAIN OBJECTIVES OF THE PROJECT

OBJECTIVE 1

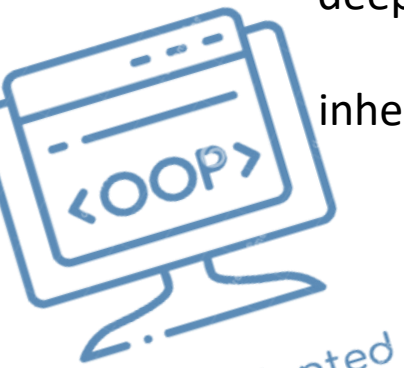
To provide you with a hands-on experience in developing real-world applications, you will deepen your understanding of encapsulation, inheritance, polymorphism, and abstraction

OBJECTIVE 2

To enhance your proficiency in creating sophisticated software with a graphical user-friendly interface (GUI) using JavaFX, Swing. This will contribute to your skillset as a developer.

OBJECTIVE 3

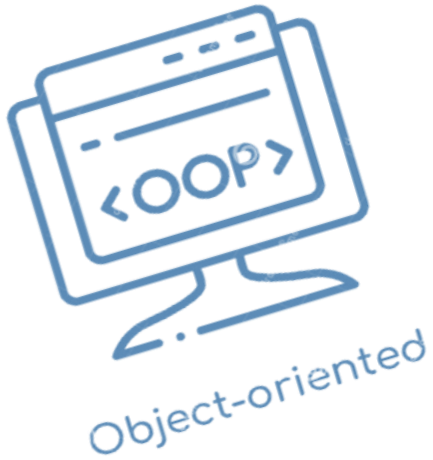
Gain practical experience in database management, including creating a local database using SQLite or working with semi-structured data formats like JSON and XML.



MAIN OBJECTIVES OF THE PROJECT

OBJECTIVE 4

Create a detailed report documenting project design and implementation, showcasing understanding and application of object-oriented principles through description of classes and objects used, their roles, and relationships.



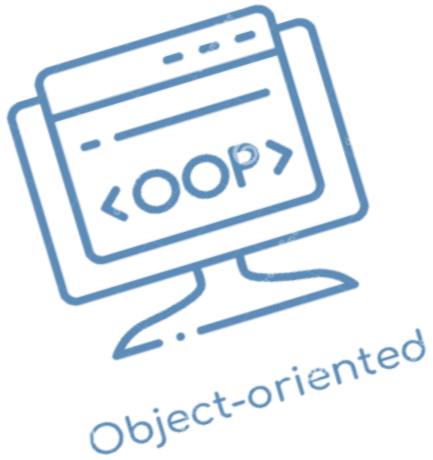
STEP TO FOLLOW FOR A GOOD PROJECT

STEP 1

Project Proposal

The project proposal serves as an initial document that outlines the overall plan and objectives of the project. In the project proposal, you should outline:

- The division of tasks by defining team roles and responsibilities.
- you should define key milestones throughout the project, specifying deliverables or achievements associated with each milestone and assigning target completion dates.
- The object of the project.
- The title of the project and team members.
- The functionalities of the software.

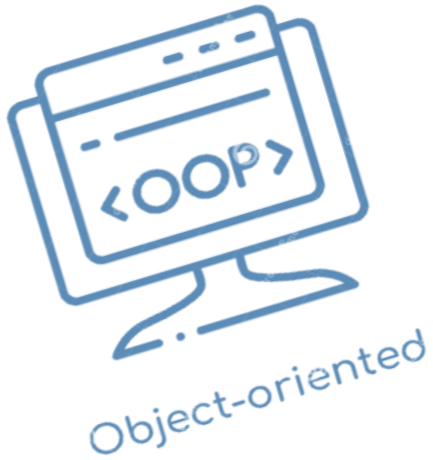


STEP TO FOLLOW FOR A GOOD PROJECT

STEP 2

START CODING

- Understand Object-Oriented Principles (encapsulation, inheritance, polymorphism, and abstraction.)
- Choose a Project Concept:
    - Select a project idea that aligns with the objectives and interests you.
    - Ensure the project involves multiple classes and objects to apply object-oriented principles.
- Design the Application
- Implement the Application
- Develop a Graphical User Interface (GUI)
- Integrate Database Management
- Test and Debug



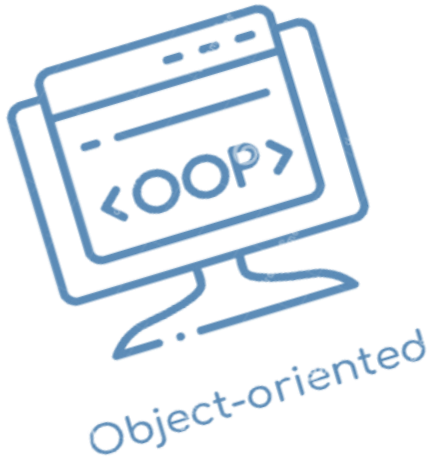
STEP TO FOLLOW FOR A GOOD PROJECT

STEP 3

Report about the project

The report about the project is a comprehensive document that provides an in-depth analysis of the project, its development process, and outcomes. The report should include :

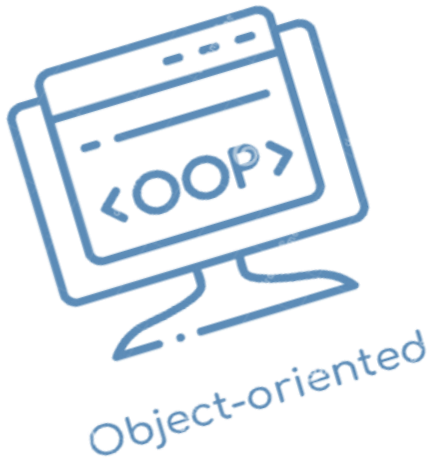
- the construction steps using Unified Modeling Language (UML) diagrams, such as use case, class, sequence, and activity diagrams.
- database design is presented through visual representations like Entity-Relationship Diagrams (ERD).
- a comprehensive list of tools, frameworks, and technologies used in the development process, highlighting their role and impact.
- etc.



SUGGESTED PROJETCS

Student Management System:

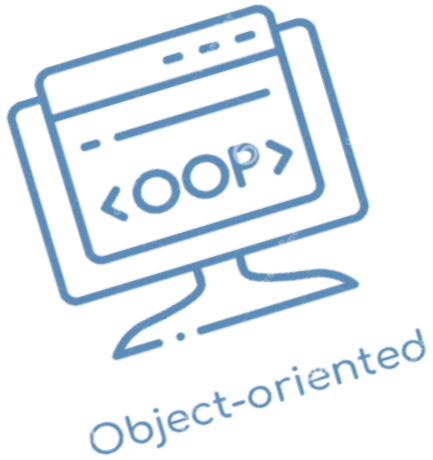
Develop a Student Management System that facilitates the efficient management of student-related information within the university. This system should be capable of adding new students, calculating their grades, creating schedules for students if possible, and incorporating other features to aid in their academic journey.



SUGGESTED PROJETCS

Hospital Management System:

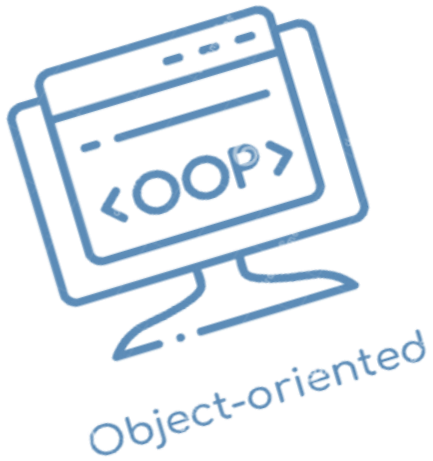
Develop a Hospital Management System designed to streamline the effective management of patient-related information within the healthcare institution. This system should have the capability to admit new patients, manage their medical records, schedule appointments, and include other features to enhance the overall hospital management process.



SUGGESTED PROJETCS

Travel Booking System:

Develop a Travel Agency System designed to efficiently manage various aspects of travel services. This comprehensive system should empower the agency to handle tasks such as booking new travel packages, managing customer details, facilitating reservations, and incorporating additional features to optimize the overall operations of the travel agency.



REQUIREMENTS

- Not more than three students per group.
- You can choose any topic of your own (preferably a real-world idea).
- Include all the concepts covered in the programming workshop (classes, objects, inheritance, abstraction, interfaces, etc.).
- Your Java application should include a graphical user interface (using Java Swing or JavaFX).
- Each project, should be connected to a database.
- A report is required for each project.