**Project report:**

**Introduction**

This project implements a hotel management system using Object-Oriented Programming (OOP) principles. It allows users to store, display, and save guest details (Premium or Normal) in a CSV file. The system utilizes abstraction, inheritance, and polymorphism to manage and manipulate guest data.

**Project Objective**

* Demonstrate OOP concepts like inheritance, encapsulation, and polymorphism.
* Allow users to input, view, and save guest details.
* Save guest information in a CSV format for record-keeping.

**Technologies Used**

* **Programming Language:** Python
* **Libraries:** **csv** for saving data into a CSV file.

**System Design**

1. **Personal Class**: Stores basic guest information (name, number of days, contact number) with getter, setter, and display methods.
2. **Premium Class**: Inherits from **Personal**, adding extra attributes (room number, service, breakfast). Overrides **display\_info()** and **to\_dict()** methods.
3. **Normal Class**: Inherits from Personal, adding room number and service attributes, overriding **display\_info()** and **to\_dict()** methods.
4. **Main Program**: Manages guest details, allows adding, displaying, and saving them to a CSV file.

**Object-Oriented Principles**

* **Abstraction**: Hides complex details of guest management, exposing simple methods.
* **Inheritance: Premium** and **Normal** inherit from **Personal**, promoting code reuse.
* **Encapsulation**: Attributes like name and number are encapsulated with getter and setter methods.
* **Polymorphism**: Overridden **display\_info()** methods in Premium and Normal classes show different information while using the same method name.

**Features**

* Add guest details (name, service type, room number).
* Display guest details.
* Save details to a CSV file for future use.
* Simple and interactive command-line interface.

#### ****Conclusion****

This hotel management system demonstrates OOP principles effectively, offering a modular approach to handling guest data. The system allows for easy data input, display, and export, making it suitable for basic hotel record management.