GLS UNIVERSITY FACULTY OF COMPUTER APPLICATIONS & IT IMScIT SEM 5
221601505 PRACTICALS ON PYTHON UNIT– 5 LAB
TASK

1. Create a Python program that allows users to maintain a personal expense tracker. Implement classes for Expense and ExpenseManager with methods to add, delete, and view expenses. Handle exceptions for invalid inputs, and store all expenses in a CSV file.

2. Develop a program to simulate a college admission system using classes Student, Course, and Admission. Allow students to apply for courses, validate their eligibility, and handle exceptions for invalid course selections or missing prerequisites.

3. Write a Python application that simulates a smart home system. Create classes for different devices such as Light, Fan, and Thermostat. Implement inheritance to handle device types and raise exceptions for invalid operations (e.g., setting negative temperature).

4. Build a Python program for a multi-user chat application using object-oriented programming. Create classes for User and ChatRoom. Ensure proper error handling when sending messages to non-existing users or empty rooms.

5. Create a program that manages an online quiz system. Use classes for Quiz, Question, and Player. Include exception handling for invalid answers, timeouts, and file errors when saving high scores.

6. Design a Python application that performs student performance analysis. Create a Student class to store marks in various subjects and calculate GPA. Handle exceptions for invalid marks and missing data files.

7. Develop a Python program to manage an online movie ticket booking system. Use classes Movie, Theater, and Booking. Include methods to book, cancel, and view tickets. Handle exceptions for overbooking and invalid seat numbers.

8. Write a Python application to simulate a simple banking system with classes Account, SavingsAccount, and CurrentAccount. Implement methods for deposit, withdraw, and transfer. Use custom exceptions for insufficient balance and invalid transactions.

9. Create a Python program that reads large text files and performs operations like word count, most frequent word, and unique word listing. Implement exception handling for missing files or read errors.

10. Develop a Python program for a library book recommendation system. Use classes Book and RecommendationEngine. Implement methods to recommend books based on genre, rating, or author. Handle exceptions for empty recommendation lists or invalid ratings.