



Government Islamia Graduate College Civil lines Lahore

Affiliated with University of Punjab (PU Lahore)

Bachelor of Science in Information Technology (BSIT)

Object Oriented Programming

Assignment#02

Questions

1. Explain the purpose of static data members and functions. Design a Counter class with a static variable to keep track of the number of objects created. Demonstrate how the count is incremented as new objects are created.
2. Write a program that overloads a calculateArea function to handle calculating the area of different shapes (e.g., circle, rectangle). Discuss the importance of function overloading in enhancing flexibility in program design.
3. Design a ComplexNumber class with real and imaginary components and overload operators for addition and subtraction. Demonstrate the use of these operators with objects of the class.
4. Explain composition and aggregation with examples. Design a Team class that contains a list of Player objects using aggregation and a Game class that has a Team object using composition. Analyze the differences in these relationships.
5. Implement a simple class hierarchy with a base class Person, derived class Student, and another derived class Teacher. Additionally, create a TeachingAssistant class that inherits from both Student and Teacher. Discuss the benefits and challenges of multiple inheritance.