Software Engineering Assignment

MODULE: 4

OOPS Concept

SUBMITTED BY:

MEMAN ASGAR ALI

SUBMITTED TO:

CHINMAYEEMAM

1.What is OOP? List OOP concepts.

- OOP (Object-oriented programming) is a computer programming model that organizes software design around data, or objects, rather than functions and logic. An object can be defined as a data field that has unique attributes and behaviour.

OOP Concepts:

- Class
- Object
- Encapsulation
- Inheritance
- Polymorphism
- Abstraction

- Class:
  - A class is blueprint/templet/collection of data member and member functions.
- Object:
  - An instance of a class. It represents a specific entity with attributes and behaviour defined by its class
- Encapsulation:
  - The wrapping up of data and function into a single unit is known as encapsulation.
- Inheritance:
  - Inheritance is the process by which objects of one class acquire the properties of object of another class.

- Polymorphism:
  - Polymorphism is a one objects multiple forms.
- Abstraction:
  - Abstraction is the concept of hiding the complex details of a system and showing only the essential features.

2. What is the difference between OOP and POP?

Object-Oriented Programming (OOP)

1. **Structure**: Programs are divided into objects.
2. **Data Security**: Data is hidden and protected within objects.
3. **Approach**: Follows a bottom-up approach.
4. **Examples**: C++, Java, Python.

Procedural-Oriented Programming (POP)

1. **Structure**: Programs are divided into functions.
2. **Data Security**: Data can be accessed and modified by any function.
3. **Approach**: Follows a top-down approach.
4. **Examples**: C, Pascal, FORTRAN.