Pass Task 7.1: Object-Oriented Programming

Name: Tran Quoc Dung

Student ID: 103803891

Introduction of OOP:

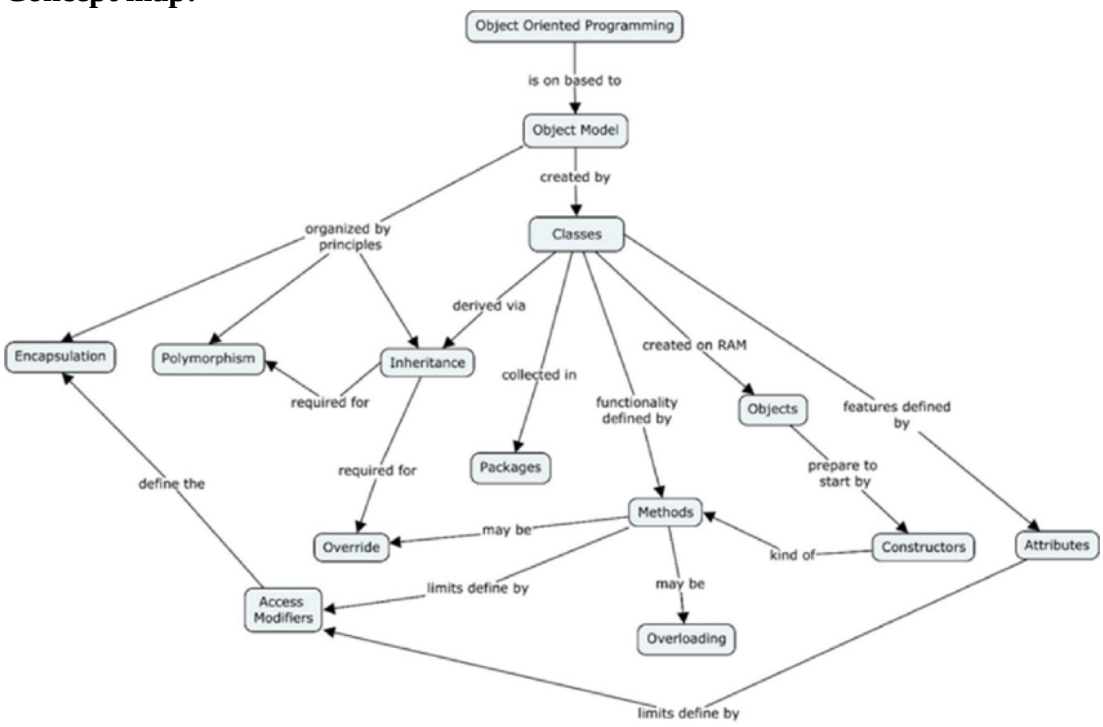
OOP (Object-Oriented Programming) is a unique programming method that gives preference to the design of software through objects, data. This paradigm allows users to divide a large problem into many small elements called objects, which then can generate data and methods by itself.

In this situation, C# is used completely throughout the course to follow OOP paradigm with a view to developing an application called Swin-Adventure, a fantasy role-playing game. In this game, the player travels among numerous locations with paths from one to others. The purpose of this game is to arrive the final destination of the game, while avoiding many obstacles that might appear during the processes.

OOP's Main Principle:

- **Abstraction:**
  Abstraction enables users to hide several unnecessary information about an object, while focusing more on inseparable data. To elaborate, in the course, we applied abstraction to the Shape Drawer project, by utilize the abstract class Draw().
- **Encapsulation:**
  This makes information of objects become more and more private, can not be accessed directly. Nevertheless, there are many ways to access this information such as through functions, methods.
- **Inheritance:**
  This is mainly used in OOP paradigm. Inheritance allows users to own functions and methods from classes that we built before (Child Class owns functions from Class for example), through many ways
- **Polymorphism:**
  Polymorphism allows users to use the exact same functions that are built before

Concept map:


Object Oriented Programming
is on based to
Object Model
created by
Classes
organized by principles
derived via
Encapsulation
Polymorphism
Inheritance
collected in
created on RAM
required for
functionality defined by
Objects
features defined by
define the
required for
Packages
prepare to start by
Methods
may be
Override
kind of
Constructors
Attributes
limits define by
may be
Access Modifiers
Overloading
limits define by