CS525 Quiz 1

Name: ***Kimtey Chav***  Student ID: ***986008***

1. What is a design pattern?

*Design pattern is a solution to a repeated problem in the context of Object Oriented Software Development.*

2. Why are design patterns important to software designers?

***to facilitate the communication:*** *instead of explain too many thing people can understand (communication become more productive.)*

***right reuse of a design that has been tested in the market.***

*Design patterns are important to software designers because they can help the designer to create a very good software with low cost and also can save them time for the solution to the repeated problem.*

3. What is a software framework?

***Software framework is kind of haft complete application that need to be customized base on the requirement of the clients to become an application for a particular organization.***

4. Why do we need software frameworks?

*We do need software frameworks because it can reduce the cost of software development, reduce software development effort, reduce software development complexity, increase productivity and increase quality and consistency. Provide generic services.*

5. Explain the 3 categories of GoF design patterns.

*The 3 categories of Gof design patterns are :*

*- creational: is the kind of designs that mostly focus on creating objects.*

*- structural: is the kind of designs that mostly focus on the how to solve the problem using the structure of the coe.* ***Concerned with class or object composition to put in place or perform a certain task.***

*- behavioral: concerned with communication between objects in a design solution*

6. Name 3 design patterns for each category.

*- creational:* ***Singleton, abstract factory, factory pattern***

*- structural:* ***Adapter, Proxy ,***

*- behavioral:* ***Command, Mediator***

7. What is the intent of the Singleton pattern?

*The intent of the singleton patter is that a class has to have only one single instance created.*

8. Conceptually how to implement a Singleton? Please explain with necessary code snippets.

*To implement a Singleton: when creating the instance of object of the class first we need to check the instance of the class is already created, if not we create the new instance of the object, otherwise we just return that object.*

* *Have a private constructor.*
* *Provide a public static getInstance() method.*
* *Store the instance with a private static field.*

*public class Singleton() {*

*private static Singleton INSTNACE;*

*public static Singleton getInstance() {*

*if(INSTANCE == null) INSTANCE= new Singleton();*

*return INSTNACE;*

*}*

*private Singleton() {*

*}*

*}*