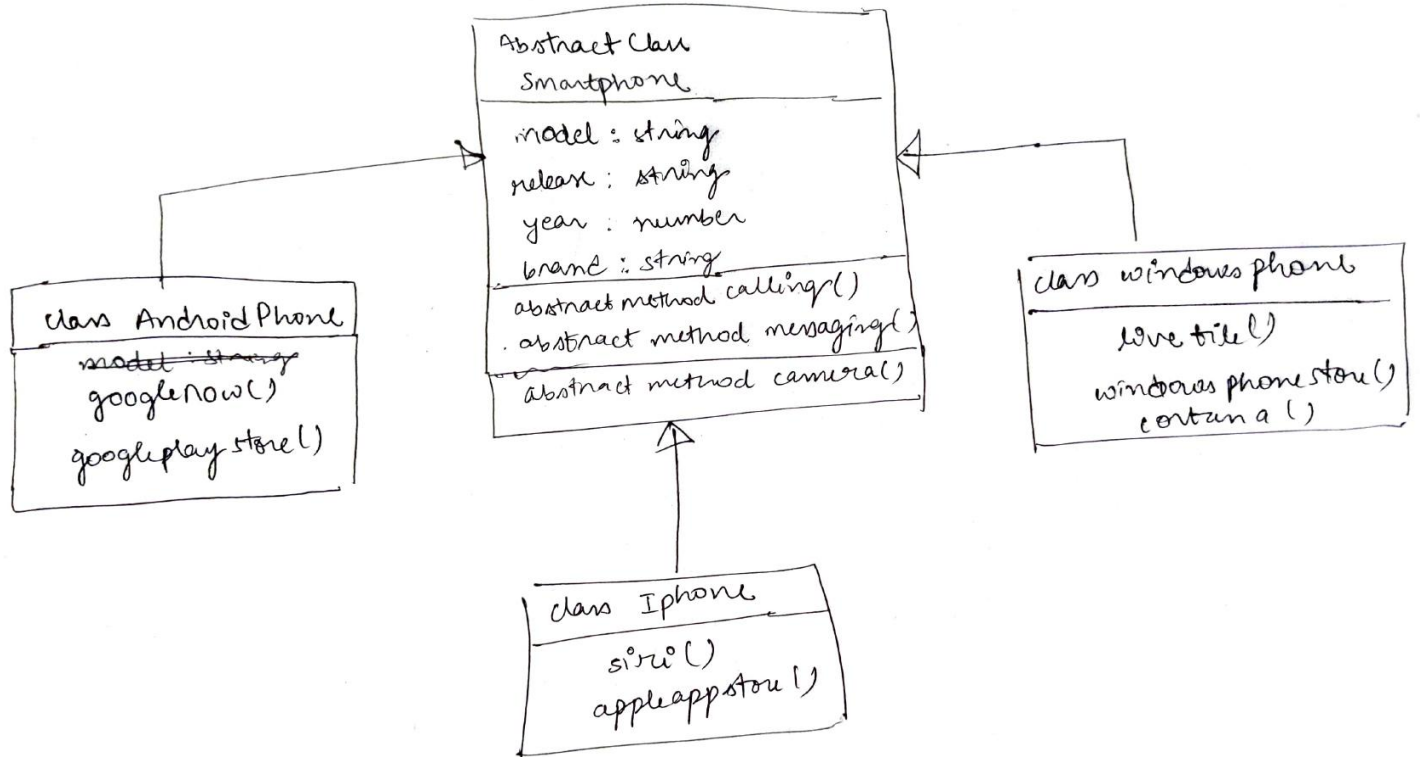
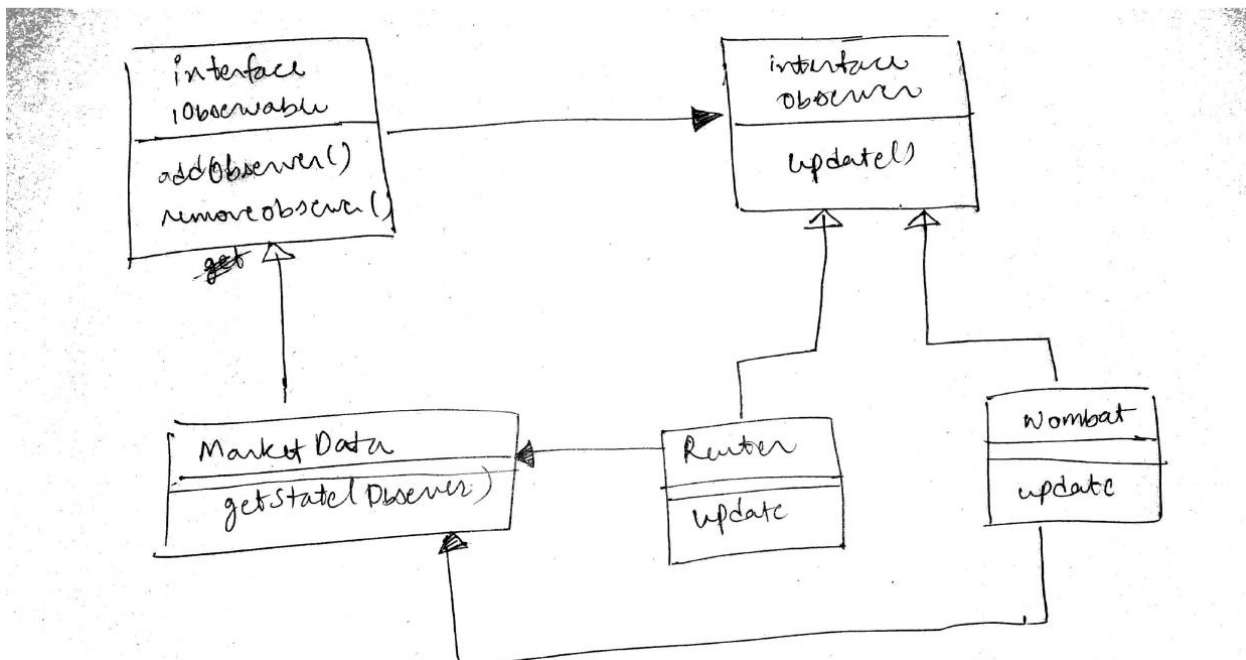


Design Principles and Patterns Assignment

Question 1 :



Question 2:



Question 3:

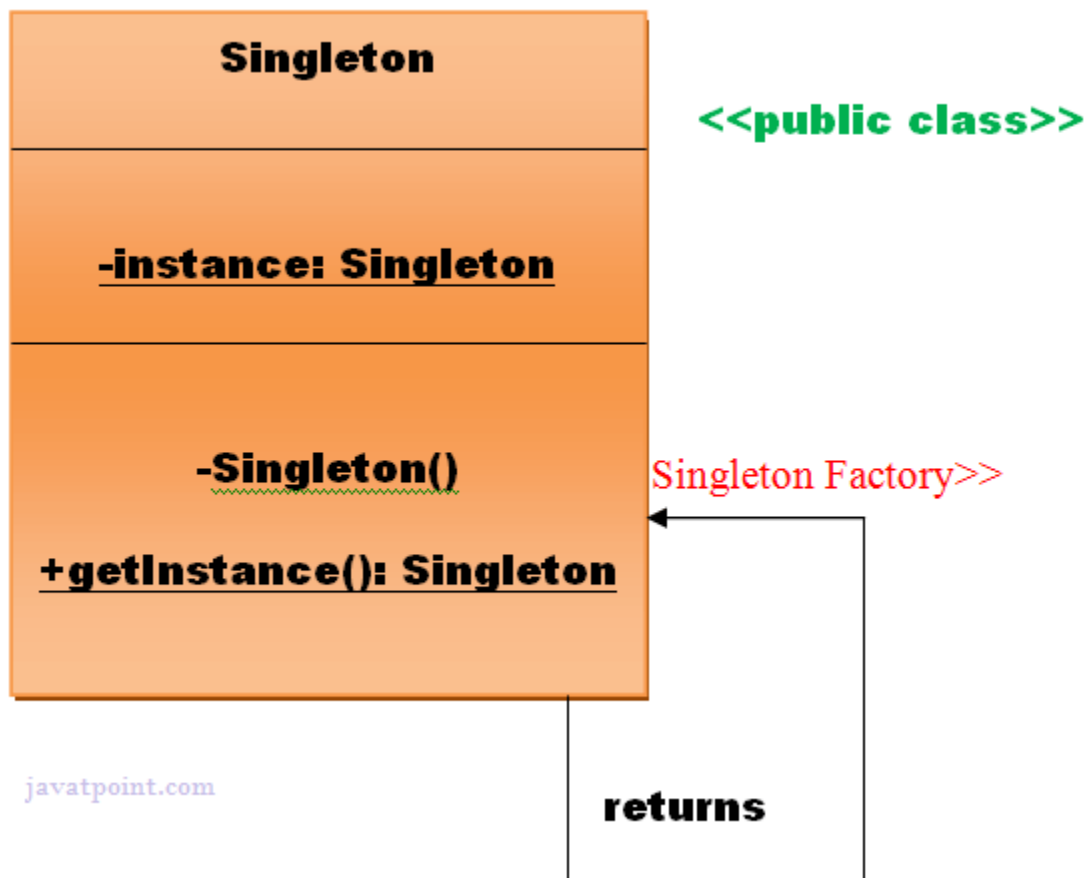
Singleton Pattern says that just"define a class that has only one instance and provides a global point of access to it".

In other words, a class must ensure that only single instance should be created and single object can be used by all other classes.

There are two forms of singleton design pattern

- Early Instantiation: creation of instance at load time.
- Lazy Instantiation: creation of instance when required.

Uml of Singleton design pattern



Thread Safe Singleton:

```
public class Singleton
{

private static instance;
```

```

private Singleton()
{
    // private constructor
}

//synchronized method to control simultaneous access
synchronized public static Singleton getInstance()
{
    if (instance == null)
    {
        // if instance is null, initialize
        instance = new Singleton();
    }
    return instance;
}
}

```

Question 4:

