Practical 06: Inheritance & Abstract Classes

Exercise 01:

Declare an interface called “MyFirstInterface”. Decalre integer type variable called “x”. Declare an abstract method called “display()”.

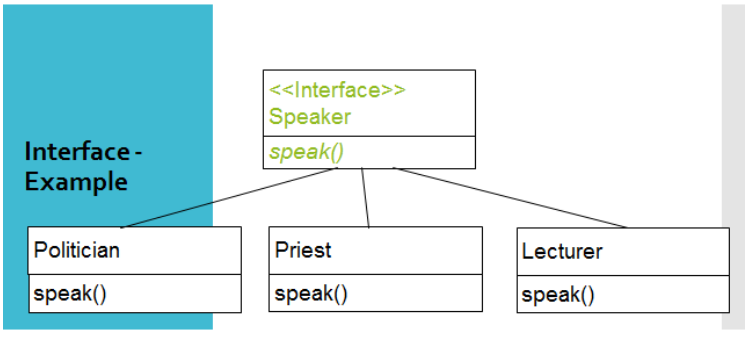
1. Try to declare the variable with/without public static final keywords. Is there any difference between these two approaches? Why?
    - Yes.
    - If we declared the variable as static, it can be reinitialized but if we declared the variable as final it cannot be reinitialized. On the other hand, final variables cannot be inherited since the static variables can access only the static members of the class and static methods can only call them.

2. Declare the abstract method with/without abstract keyword. Is there any difference between these two approaches? Why?
    - No.
    - We already created an interface which is a set of abstract methods so it is not necessary and there is no difference between using abstract keyword or not.

3. Implement this into a class called “IntefaceImplemented” . Override all the abstract methods. Try to change the value of x inside this method and print the value of x. Is it possible for you to change x? why?
    - No. it cannot be changed.
    - Because it is declared as ‘final’ in the interface and so the final keyword makes the variable constant. So the variable ‘x’ cannot be modified. If we try to do so it gives a compilation error.

Exercise 02:

Develop a code base for the following scenario. Recall what we have done at the lecture…



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```
public interface Speaker
{
   public void speak();
}


public class Politician implements Speaker
{
   public void speak()
   {
      System.out.println("Talks politics");
   }
}



public class Priest implements Speaker
{
   public void speak()
   {
      System.out.println("Talks religious");
   }
}

public class Lecturer implements Speaker
{
   public void speak()
```

```
    {
        System.out.println("Talks OOP programming");
    }
}

//main method
public class Lab05
{
    public static void main(String[] args)
    {
        Lecturer l1=new Lecturer();
        l1.speak();

        Politician p1=new Politician();
        p1.speak();

        Priest pr1=new Priest();
        pr1.speak();
    }
}
```