1. Write a program to show the working of simple abstract Class?

```java
abstract class Demo1{
  public void disp1(){
    System.out.println("Concrete method of abstract class");
  }
  abstract public void disp2();
}

class Demo2 extends Demo1{

  public void disp2()
  {
    System.out.println("\t******************************");
    System.out.println("\tI'm overriding abstract method");
    System.out.println("\t##############################");
  }
}
class Abstract1{
  public static void main(String args[]){
    Demo2 obj = new Demo2();
    obj.disp2();
    obj.disp1();
  }
}
```

2. Write a program to show how to inherit an abstract class to other classes?

```java
abstract class Shape{
  abstract void numberOfSides();
}
class Traingle extends Shape{
  public void numberOfSides() {
  System.out.println("three");
  }
}
class Rectangle extends Shape {
  public void numberOfSides(){
  System.out.println("four");
  }
}
class Hexagon extends Shape {
  public void numberOfSides() {
  System.out.println("six");
  }
}
public class Sides{
  public static void main(String arg[]){
  Traingle T=new Traingle();
```

```java
      Rectangle Rt=new Rectangle ();
      Hexagon H=new Hexagon();
      T.numberOfSides();
      Rt.numberOfSides();
      H.numberOfSides();
    }
  }
```

3. Write a program to how to inherit an abstract class to inherit into another class?

```java
abstract class Instrument {
    protected String name;
    abstract public void play();
}
abstract class StringedInstrument extends Instrument {
    protected int numberOfStrings;
}
class ElectricGuitar extends StringedInstrument {
    public ElectricGuitar() {
        super();
        this.name = "Guitar";
        this.numberOfStrings = 6;
    }

    ElectricGuitar(int numberOfStrings) {
        super();
        this.name = "Guitar";
        this.numberOfStrings = numberOfStrings;
    }
    //Override
    public void play() {
    System.out.println("An electric " + numberOfStrings + "-string " + name
+ " is rocking!");
    }
}
class ElectricBassGuitar extends StringedInstrument {

    ElectricBassGuitar() {
        super();
        this.name = "Bass Guitar";
        this.numberOfStrings = 4;
    }

 ElectricBassGuitar(int numberOfStrings) {
        super();
        this.name = "Bass Guitar";
        this.numberOfStrings = numberOfStrings;
```

```java
        }

        //Override
        public void play() {
            System.out.println("An electric " + numberOfStrings + "-string " + name
                                + " is rocking!");
        }
    }
public class Music {

    public static void main(String[] args) {
        ElectricGuitar guitar = new ElectricGuitar();
        ElectricBassGuitar bassGuitar = new ElectricBassGuitar();

        guitar.play();
        bassGuitar.play();

        guitar = new ElectricGuitar(7);
        bassGuitar = new ElectricBassGuitar(5);

        guitar.play();
        bassGuitar.play();
    }
}
```