

Question 1

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C:\Users\HP\Desktop\practical\src\TestPerson.java - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
Person.java Student.java Teacher.java TestPerson.java
1 public class TestPerson {
2     public static void main(String[] args){
3         System.out.println("Details of students \n-----");
4         Student student=new Student("Mark Fernando","67, Colombo.");
5         System.out.println(student.toString());
6         student.addCourses("IS101",97);
7         student.addCourses("IS102",68);
8         student.printGrades();
9         System.out.println();
10        System.out.println("Details of teachers \n-----");
11        Teacher teacher=new Teacher("Lori Silva","10/A, Colombo.",12000.0);
12        System.out.println(teacher.toString());
13        teacher.printBaseSalary();
14        teacher.addCourse("CS101");
15        teacher.addCourse("CS102");
16        teacher.printCoursese();
17    }
18 }
19 }
```

```
C:\Users\HP\Desktop\practical\src\Teacher.java - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
Person.java Student.java Teacher.java TestPerson.java
1
2 public class Teacher extends Person {
3     private int numCourse=2;
4     private String[] courses=new String[numCourse];
5     private int maxCourses;
6     private double baseSalary;
7     private int i=0;
8
9
10    public Teacher(String name,String address){
11        setName(name);
12        setAddress(address);
13    }
14    public Teacher(String name,String address,double salary){
15        setName(name);
16        setAddress(address);
17        this.baseSalary=salary;
18    }
19    public void addCourse(String course){
20        courses[i]=course;
21        i++;
22    }
23    public void printCoursese(){
24        for(int i=0;i<2;i++){
25            System.out.println("Course "+courses[i]+" assigned");
26        }
27    }
28    public void setBaseSalary(double salary){
29        this.baseSalary=salary;
30    }
31    public void printBaseSalary(){
32        System.out.println("BaseSalary: "+baseSalary);
33    }
34 }
```

C:\Users\HP\Desktop\practical\src\Student.java - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

Person.java Student.java Teacher.java TestPerson.java

```
1 public class Student extends Person {
2     private int numCourses=2;
3     private String[] courses=new String[numCourses];
4     private int[] grades=new int[numCourses];
5     private int maxCourses;
6     private int i=0;
7
8     public Student(String name,String address){
9         setName(name);
10        setAddress(address);
11    }
12    public void addCourses(String course,int grade){
13        courses[i]=course;
14        grades[i]=grade;
15        i++;
16    }
17    public void printGrades(){
18        for(int i=0;i<numCourses;i++){
19            System.out.println("Course "+courses[i]+" : Grade : "+grades[i]);
20        }
21    }
22 }
```

C:\Users\HP\Desktop\practical\src\Person.java - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

Person.java Student.java Teacher.java TestPerson.java

```
1 public class Person {
2     private String name;
3     private String address;
4
5     public Person(){
6
7     }
8     public Person(String name,String address){
9         this.name=name;
10        this.address=address;
11    }
12    public String getName(){
13        return name;
14    }
15    public String getAddress(){
16        return address;
17    }
18    public void setName(String name){
19        this.name=name;
20    }
21    public void setAddress(String address){
22        this.address=address;
23    }
24    public String toString(){
25        return "Name: "+getName()+" | Address: "+getAddress();
26    }
27 }
```

```

C:\Users\HP\Desktop\practical\src>javac TestPerson.java

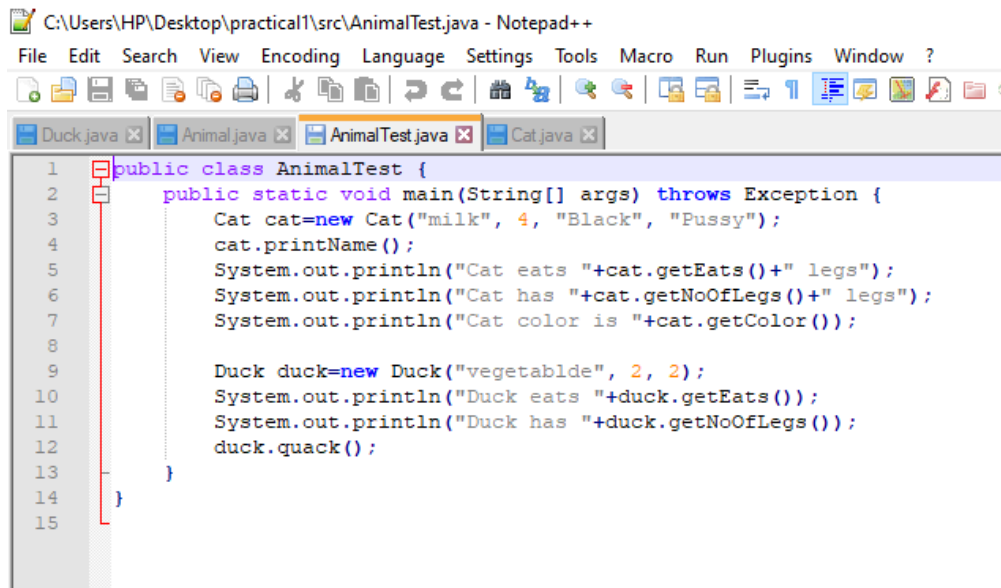
C:\Users\HP\Desktop\practical\src>java TestPerson
Details of students
-----
Name: Mark Fernando | Address: 67, Colombo.
Course IS101: Grade : 97
Course IS102: Grade : 68

Details of teachers
-----
Name: Lori Silva | Address: 10/A, Colombo.
BaseSalary: 12000.0
Course CS101 assigned
Course CS102 assigned

C:\Users\HP\Desktop\practical\src>

```

Question 2



```

C:\Users\HP\Desktop\practical1\src\AnimalTest.java - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
Duck.java x Animal.java x AnimalTest.java x Cat.java x
1 public class AnimalTest {
2     public static void main(String[] args) throws Exception {
3         Cat cat=new Cat("milk", 4, "Black", "Pussy");
4         cat.printName();
5         System.out.println("Cat eats "+cat.getEats()+" legs");
6         System.out.println("Cat has "+cat.getNoOfLegs()+" legs");
7         System.out.println("Cat color is "+cat.getColor());
8
9         Duck duck=new Duck("vegetablde", 2, 2);
10        System.out.println("Duck eats "+duck.getEats());
11        System.out.println("Duck has "+duck.getNoOfLegs());
12        duck.quack();
13    }
14 }
15

```

```
C:\Users\HP\Desktop\practical1\src\Cat.java - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
Duck.java Cat.java AnimalTest.java Cat.java
1 public class Cat extends Animal{
2     private String color;
3     private String name;
4
5     public Cat(String food,int legs){
6         setEats(food);
7         setNoOfLegs(legs);
8     }
9     public Cat(String food,int legs,String color,String name){
10        setEats(food);
11        setNoOfLegs(legs);
12        this.color=color;
13        this.name=name;
14    }
15    public String getColor(){
16        return color;
17    }
18    public void setColor(String color){
19        this.color=color;
20    }
21    public void printName(){
22        System.out.println("Name of the cat is "+name);
23    }
24 }
```

```
C:\Users\HP\Desktop\practical1\src\Animal.java - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins
Duck.java Animal.java AnimalTest.java Cat.java
1 public class Animal {
2     private String eats;
3     private int noOfLegs;
4
5     public Animal() {
6
7     }
8     public Animal(String food,int legs){
9         this.eats=food;
10        this.noOfLegs=legs;
11    }
12    public String getEats(){
13        return eats;
14    }
15    public void setEats(String eats){
16        this.eats=eats;
17    }
18    public int getNoOfLegs(){
19        return noOfLegs;
20    }
21    public void setNoOfLegs(int noOfLegs){
22        this.noOfLegs=noOfLegs;
23    }
24
25 }
```

C:\Users\HP\Desktop\practical1\src\Duck.java - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins

Duck.java x Animal.java x AnimalTest.java x Cat.java x

```
1 public class Duck extends Animal{
2     private int noOfWings;
3
4     public Duck(String food,int legs,int noOfWings){
5         setEats(food);
6         setNoOfLegs(legs);
7         this.noOfWings=noOfWings;
8     }
9     public int getNoOfWings(){
10         return noOfWings;
11     }
12     public void setNoOfWings(int noOfWings){
13         this.noOfWings=noOfWings;
14     }
15     public void quack(){
16         System.out.println("Duck can quack.");
17     }
18 }
```

Command Prompt

```
C:\Users\HP\Desktop\practical1\src>javac AnimalTest.java

C:\Users\HP\Desktop\practical1\src>java AnimalTest
Name of the cat is Pussy
Cat eats milk legs
Cat has 4 legs
Cat color is Black
Duck eats vegetablde
Duck has 2
Duck can quack.
```