

Ans. to the q no: 1

```
(a) public class calculator {  
    int add (int a, int b) {  
        return (a + b);  
    }  
    double add (int a, double b) {  
        return (a + b);  
    }  
    double add (int a, double b, double c) {  
        return (a + b + c);  
    }  
    public static void main (String[] args) {  
        calculator calculator = new calculator();  
        calculator.add (5, 5);  
        calculator.add (10, 15.5);  
        calculator.add (15, 20.5, 21.7);  
    }  
}
```

```
1(b) abstract class Car {  
    protected String model;  
    protected String color;  
    protected int maxSpeed;  
    public abstract void accelerate();  
    public abstract void brake();  
}
```

```
class Audi extends Car
```

```
    @Override  
    public void accelerate() {  
        System.out.println("First method.");  
    }
```

```
    @Override  
    public void brake() {  
        System.out.println("Second method.");  
    }
```

```
    Audi(String model, String color, int maxSpeed) {  
        this.model = model;  
        this.color = color;  
        this.maxSpeed = maxSpeed;  
    }
```

```
}
```

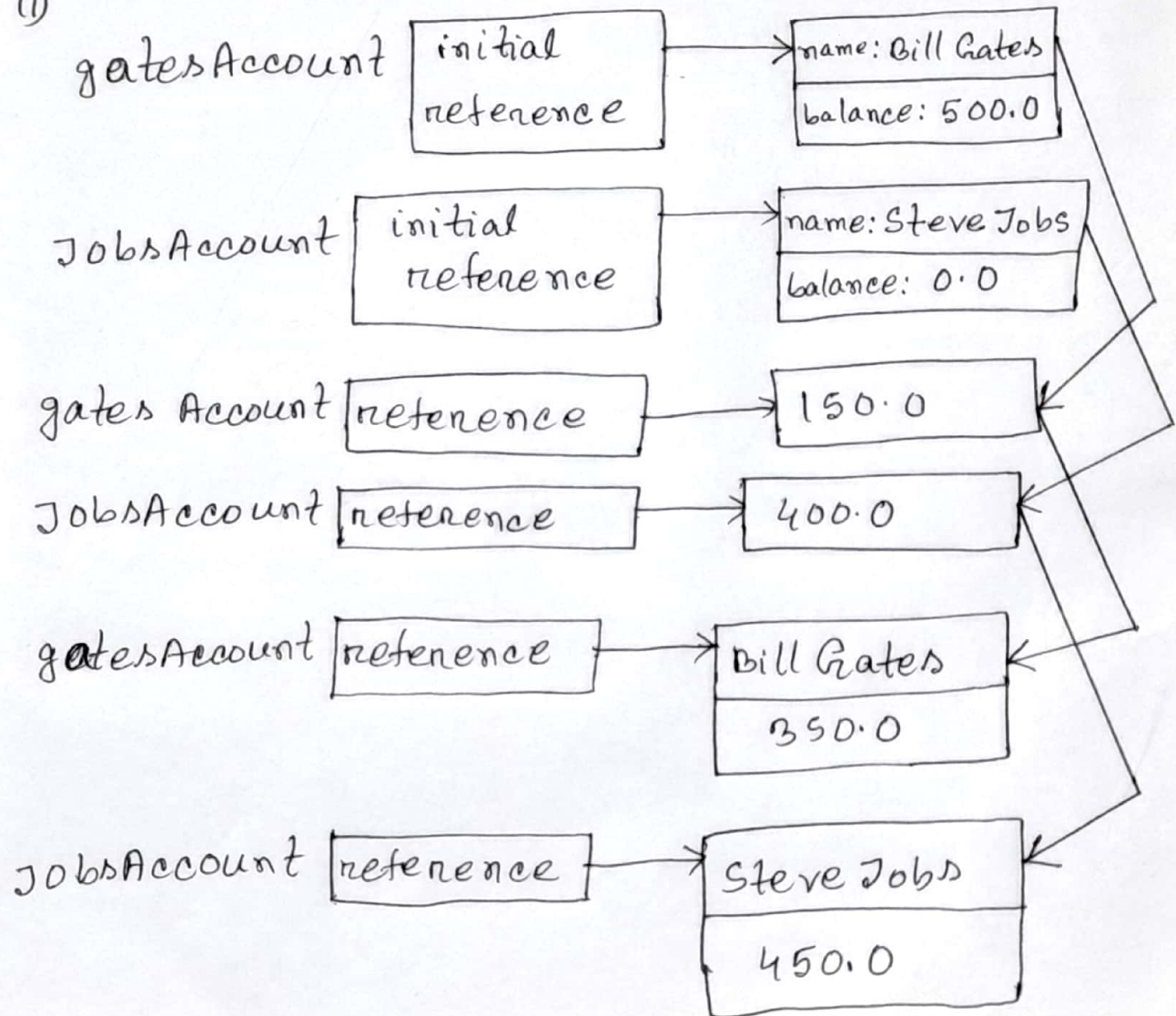
Ans. to the Q. no: 2

(a) i) output:

Bill Gates 350.0

Steve Jobs 400.0

ii)



(b) Output:

L-567

450.0

L-567

490.0

Ans. to the Q. no: 3

(a) i) class Book{

String name;

String author;

Book(String n, String a){

name = n;

author = a;

System.out.println("This is a Book");
}

Book() { // default constructor
}

}

class Novel extends Book{

Novel(String a, String b){

System.out.println(name + " is a novel");
}

}

```
class TextBook extends Book{
```

```
    String edition;
```

```
    TextBook(){
```

```
        System.out.println("This is a textbook");
```

```
    }
```

```
    public void setGenre(String e){
```

```
        edition = e;
```

```
    }
```

```
}
```

```
public class Test{
```

```
    public static void main(String[] args){
```

```
        Novel n = new Novel("Himur Mama",
```

```
                               "Humayun Ahmed");
```

```
    }
```

```
}
```

ii) Output:

null is a novel

3] b OR,

```
class Fraction{
```

```
    int num = 1;
```

```
    int denom = 2;
```

```
    Fraction(int num, int denom){
```

```
        this.num = num;
```

```
        this.denom = denom;
```

```
public class Main{
```

```
    public static void main(String[] args){
```

```
        Fraction f1 = new Fraction();
```

```
        System.out.println(f1.num + "/" + f1.denom);
```

```
        Fraction f2 = new Fraction(2, 5);
```

```
        System.out.println(f2.num + "/" + f2.denom);
```

```
    }
```

```
}
```


Ans. to the Q. no: 4

a) Package Pack1;

```
public class Vehicle{
```

```
    protected int id;
```

```
    String name;
```

```
    public Vehicle (String name){
```

```
        this.name = name;
```

```
    }
```

```
    public String getName(){
```

```
        return name;
```

```
    }
```

```
}
```

```
Package pack1;
```

```
public class Bike extends Vehicle{
```

```
    public Bike (String name, int id){
```

```
        super(name);
```

```
        this.id = id;
```

```
    public void Print(){
```

```
        System.out.println(name + " " + id);
```

```
    }
```

```
}
```



```

Package pack1.pack2;
import pack1.Vehicle;
public class car extends Vehicle{
    public car(String name, int id){
        super(name);
        this.id;
    }
    public void print(){
        System.out.println(getname()+" "+id);
    }
}

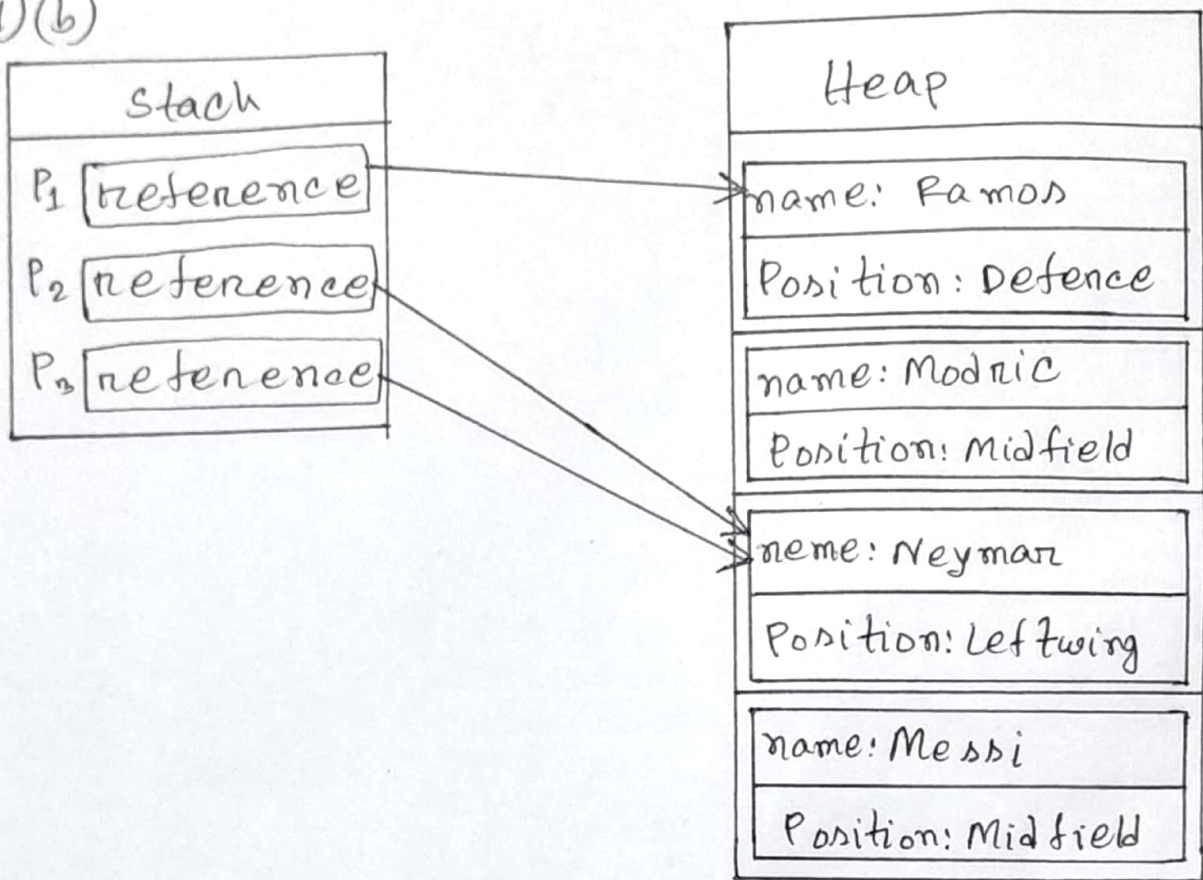
```

```

Package Pack1.Pack2;
import Pack1.*;
public class Main{
    public static void main(String[] args){
        Vehicle v = new Vehicle("Car");
        System.out.println(v.getname);
        Car c = new Car("BMW", 101);
        c.print();
        Bike b = new Bike("Pulsar", 102);
        b.print();
    }
}

```

(4)(b)



After executing the code P₂'s data will be overridden to P₃'s data. Hence if we try to access P₂'s name and position it will be shown P₃'s data. And the last Messi's position will be changed after executing the code. His new position shows Midfield.

Ans. to the Q.no:5

a)

Output:

I am human

I am student

I am graduate student

I am graduate student

I am graduate student

I am graduate student

5(b)

```
import java.util.Scanner;
```

```
public class Array{
```

```
    public static void main(String[] args){
```

```
        Scanner input = new Scanner(System.in);
```

```
        int array[] = {1, 3, 2, 4, 1, 10, 10, 20, 5};
```

```
        boolean isfound = false;
```

```
        int scan = input.nextInt();
```

```
        for (int x; array){
```

```
            if (x == scan){
```

```
                isfound = true;
```

```
            }
```

```
        }
```

```
        if (isfound){
```

```
            System.out.println("Found");
```

```
        }
```

```
        else{
```

```
            System.out.println("Not Found");
```

```
        }
```

```
    }
```

```
}
```