Ans. to the a 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;
    }
}
```

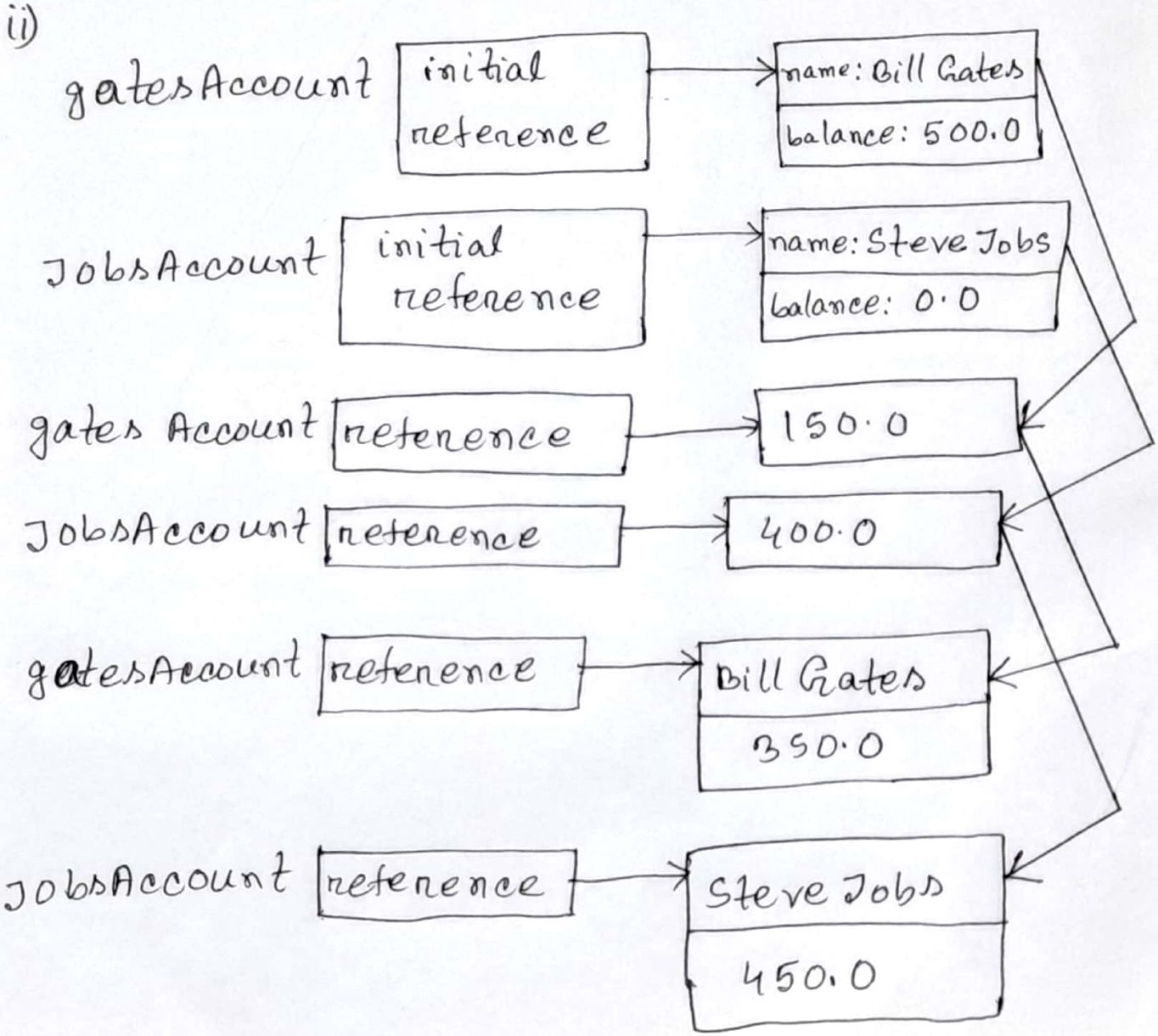
Ans. to the Q. no: 2

(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("Himu 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

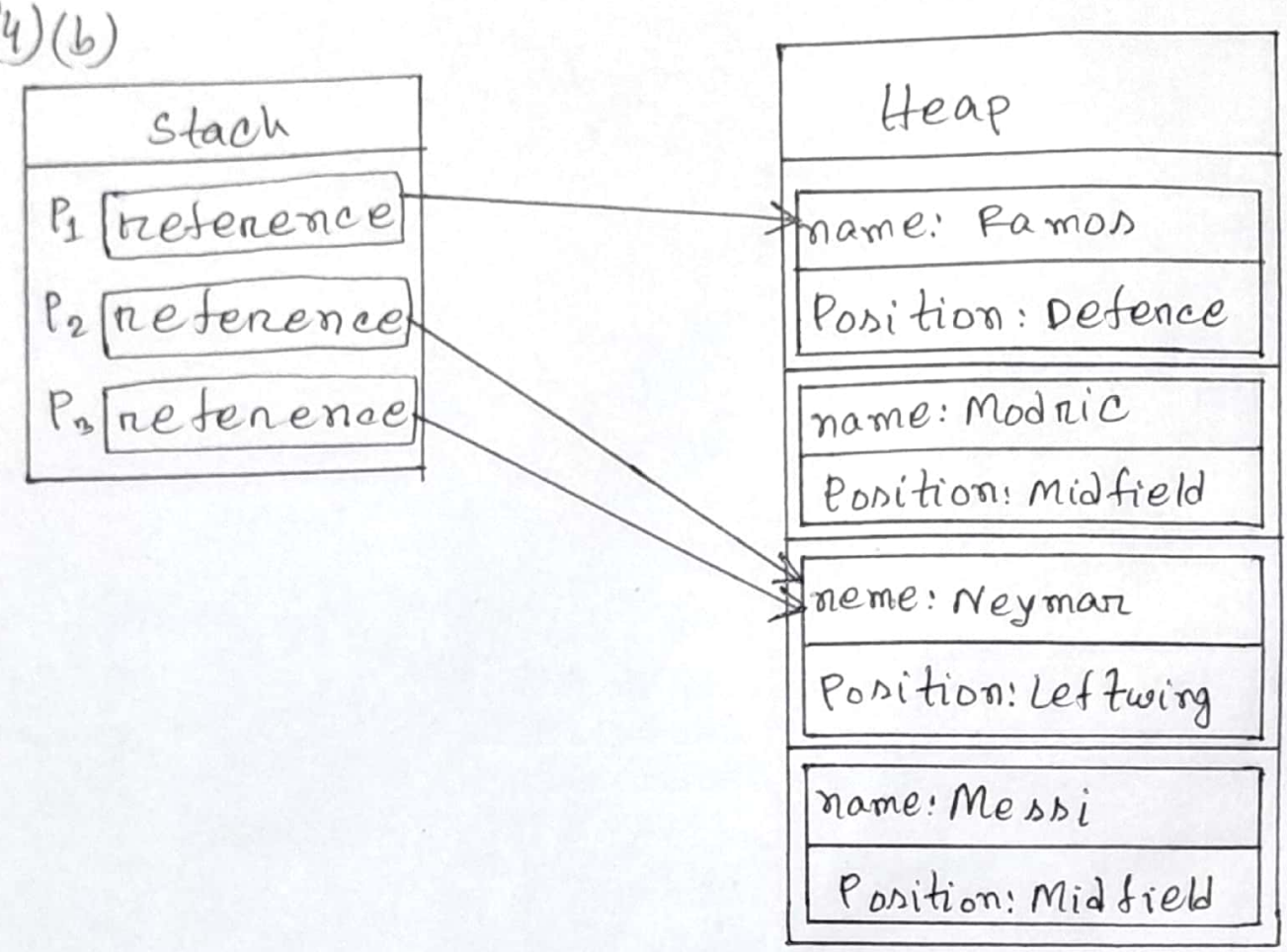
a)
```
Package Pack1;
public class Vehicle{
  protected int id;
  String name;
  public Vehicle (String name){
      this.name = name;
  }
public String getname(){
      return name;
    }
}
```

```
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("Cart");
  System.out.println(v.getname);
  Car c=new Car("BMW", 101);
   c.print();
   Bike b=new Bike("Pulsar", 102);
    b.print();
 }
}
```

(4)(b)



After executting the code P_2'S data will be override to P_3's data. Hence if we try to access P_2'S name and position it will be shown P_3'S data. And the last Messi's position will be change after execute the code. His new position show 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, 19, 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");
 }
 }
}
```