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Programme	:	**BTech. CSE Core**	Semester	:	**Win 2021-22**
Course	:	**Java Programming**	Code	:	**CSE1007**
Faculty	:	**Dr. Pradeep K**	Slot	:	**L9+L10**
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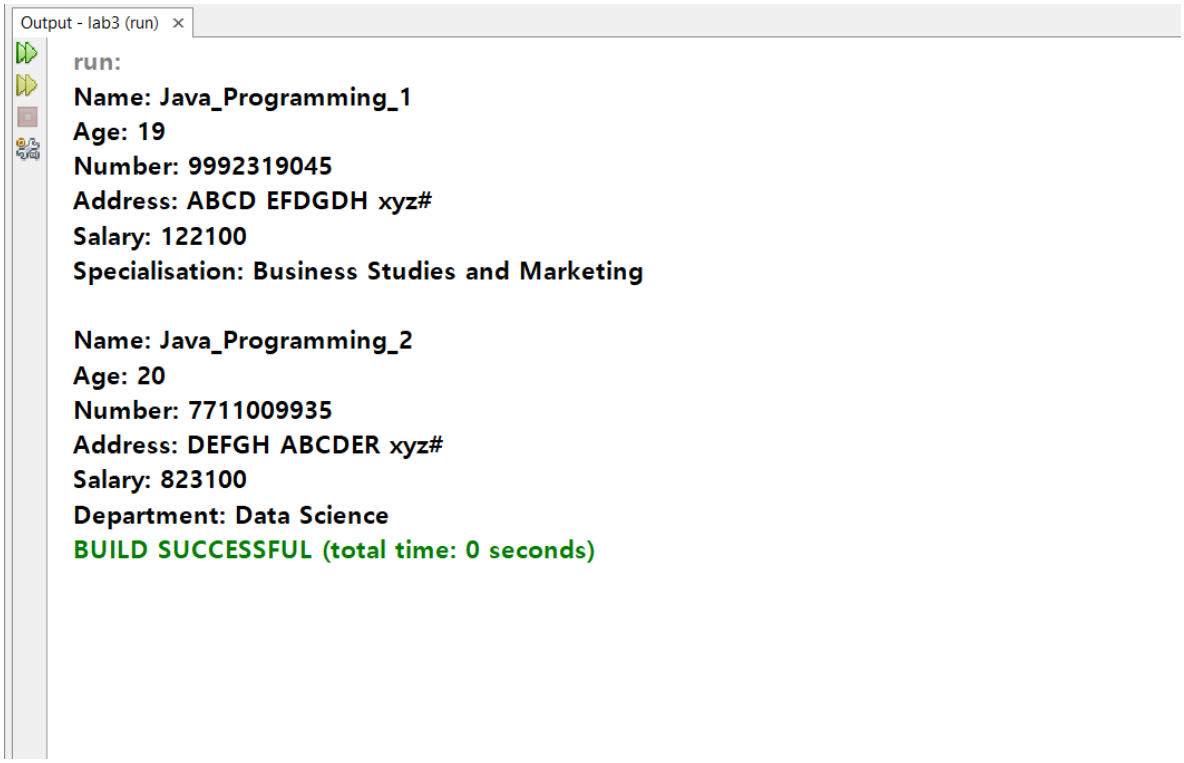
1. Create a class named '**Membe**r' having the following members:
Data members
1 - Name
2 - Age
3 - Phone number
4 - Address
5 - Salary
It also has a method named 'printSalary' which prints the salary of the members.
Two classes 'Employee' and 'Manager' inherits the 'Member' class. The 'Employee' and 'Manager' classes have data members 'specialization' and 'department' respectively. Now, assign name, age, phone number, address and salary to an employee and a manager and display the details.

```java
package lab3;

class Member {
    String name;
    int age;
    String number;
    String address;
    int salary;

    public void printSalary() {
        System.out.println(salary);
    }

    public void print() {
        System.out.println("Name: " + name);
        System.out.println("Age: " + age);
        System.out.println("Number: " + number);
```

```
        System.out.println("Address: " + address);
        System.out.println("Salary: " + salary);
    }
}

class Employee extends Member {
    String specialization;
    public void print() {
        super.print();
        System.out.println("Specialisation: " + specialization);
    }
}

class Manager extends Member {
    String department;
    public void print() {
        super.print();
        System.out.println("Department: " + department);
    }
}

class Lab3 {
    public static void main(String[] args) {
        Employee e1 = new Employee();
        e1.name = "Java_Programming_1";
        e1.age = 19;
        e1.number = "9992319045";
        e1.address = "ABCD EFDGDH xyz#";
        e1.salary = 122100;
        e1.specialization = "Business Studies and Marketing";
        e1.print();
        System.out.println();
        Manager m1 = new Manager();
        m1.name = "Java_Programming_2";
        m1.age = 20;
        m1.number = "7711009935";
        m1.address = "DEFGH ABCDER xyz#";
        m1.salary = 823100;
        m1.department = "Data Science";
        m1.print();
    }

}
```

Output:



2. A software company has recently revised the salary structure of all the employees of various designations. The employees of the company are broadly categorized into three groups namely Project Managers, System Engineers and Technical Assistants.
   In addition to Basic pay, various allowances are offered in the company such as Additional grade pay (AGP), Dearness allowances (DA), Travel Allowances (TA) & House Rental allowances (HRA).

   - Project Manager enjoys all the allowances offered by company except TA.
   - System Engineer gets only basic pay and TA.
   - Technical Assistant will get only fixed basic pay.

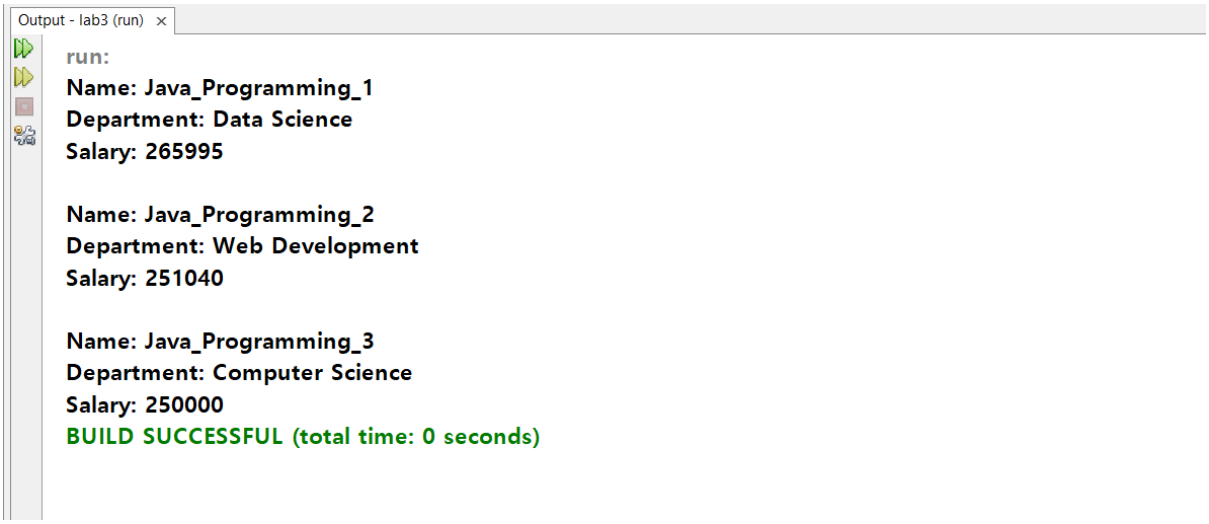
   Incorporate this salary scheme in a Java Program by using redefining the method ComputeSalary() in the derived classes ProjectManager, SystemEngineer and TechnicalAsst to calculate the salary for all the employees

```
package lab3;

class Employee{
  String name;
  int basic_pay = 250000, da=12500, hra=2500, agp=995, ta=1040;
  String department;
  int salary = basic_pay;
```

```java
  public void printSalary(){
    System.out.println("Salary: "+basic_pay);
  }

  public void print(){
      System.out.println("Name: "+name);
      System.out.println("Department: "+department);
      System.out.println("Salary: "+salary);
  }
}

class ProjectManager extends Employee{
    public void print(){
      salary = basic_pay + da + hra + agp;
      super.print();
  }
}

class SystemEngineer extends Employee{
    public void print(){
      salary = basic_pay + ta;
      super.print();
  }
}

class TechnicalAssistant extends Employee{
    public void print(){
      super.print();
  }
}

class Lab3 {
    public static void main(String[] args) {
        ProjectManager p1 = new ProjectManager();
        p1.name = "Java_Programming_1";
        p1.department = "Data Science";
        p1.print();
        System.out.println();
        SystemEngineer s1 = new SystemEngineer();
        s1.name = "Java_Programming_2";
        s1.department = "Web Development";
        s1.print();
        System.out.println();
        TechnicalAssistant t1 = new TechnicalAssistant();
        t1.name = "Java_Programming_3";
        t1.department = "Computer Science";
```

```
        t1.print();
    }

}
```

Output:



3. Write a java program for the following scenario: Assume that a bank maintains two kinds of accounts for customers, one called as savings account and the other as current account. The savings account provides compound interest and withdrawal facilities but no cheque book facility. The current account provides cheque book facility but no interest. Current account holders should maintain a minimum balance and if the balance falls below this level, a service charge is imposed. Create a class account that stores customer name, account number and type of account. From this derive the classes cur_acct and sav_acct to make them more specific to their requirements. Include necessary member functions in order to achieve the following tasks:

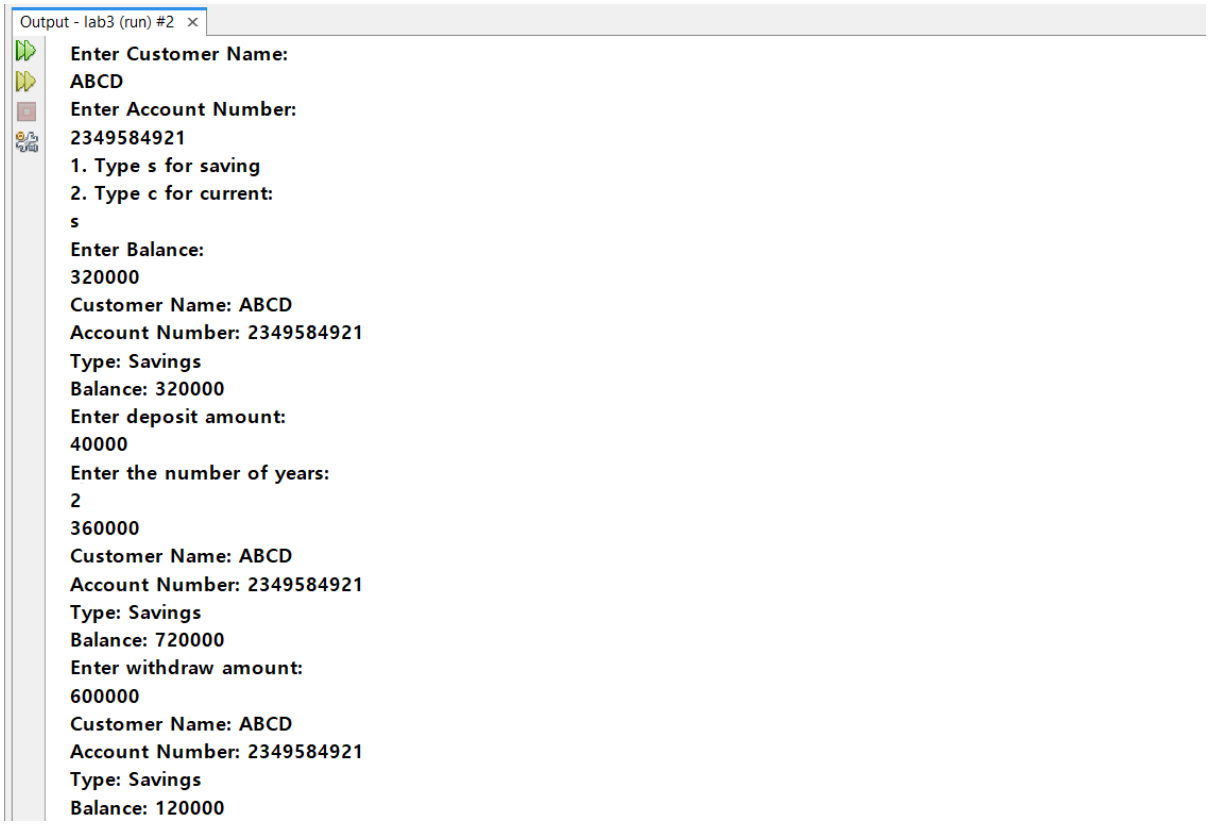
a) Accept deposit from a customer and update the balance.
b) Display the balance
c) Compute and deposit interest

```
package lab3;

import java.util.*;
import java.lang.Math;

class Account {
    String cust_name, type;
    char temp;
    long acc_no, balance;
```

```
    Scanner sc = new Scanner(System.in);
    void get() {
        System.out.println("Enter Customer Name: ");
        cust_name = sc.nextLine();
        System.out.println("Enter Account Number:");
        acc_no = sc.nextLong();
        System.out.println("1. Type s for saving \n2. Type c for current: ");
        temp = sc.next().charAt(0);
        type = ((temp=='s')?"Savings":"Current");
        System.out.println("Enter Balance:");
        balance = sc.nextLong();
    }
    void display() {
        System.out.println("Customer Name: " + cust_name);
        System.out.println("Account Number: " + acc_no);
        System.out.println("Type: " + type);
        System.out.println("Balance: " + balance);
    }
    void deposit() {
        int amt;
        System.out.println("Enter deposit amount: ");
        amt = sc.nextInt();
        balance += amt;
    }
};

class sav_acct extends Account {
    Scanner sc = new Scanner(System.in);
    int intr;
    void comp_intrest() {
        int t1, r1 = 10;
        System.out.println("Enter the number of years: ");
        t1 = sc.nextInt();
        intr = (int)(balance * (Math.pow(1 + r1 / 12, t1)));
        System.out.println(intr);
        balance += intr;
    }
    void withdraw() {
        int amt;
        System.out.println("Enter withdraw amount: ");
        amt = sc.nextInt();
        if (balance > amt)
            balance -= amt;
        else
            System.out.println("Amount can't be withdrawn due to insufficient balance");
    }
```

```
}
class curr_acct extends Account {
    void min_bal() {
        if (balance < 200)
            System.out.println("Service Charge imposed: New Balance is: " + (balance -
20));
        else
            System.out.println("No Service charge imposed");
    }
    void withdraw() {
        int amt;
        System.out.println("Enter withdraw amount: ");
        amt = sc.nextInt();
        if (amt > balance)
            System.out.println("Amount can't be withdrawn due to insufficient balance");
        else
            balance -= amt;
    }
}

class Lab3 {
    public static void main(String[] args) {
        sav_acct s1 = new sav_acct();
        curr_acct c1 = new curr_acct();
        s1.get();
        s1.display();
        s1.deposit();
        s1.comp_intrest();
        s1.display();
        s1.withdraw();
        s1.display();
        c1.get();
        c1.display();
        c1.deposit();
        c1.display();
        c1.withdraw();
        c1.display();
        c1.min_bal();

    }
}
```

Output:




```
Enter Customer Name:
DEBCFR
Enter Account Number:
7878329201
1. Type s for saving
2. Type c for current:
c
Enter Balance:
300000
Customer Name: DEBCFR
Account Number: 7878329201
Type: Current
Balance: 300000
Enter deposit amount:
10000
Customer Name: DEBCFR
Account Number: 7878329201
Type: Current
Balance: 310000
Enter withdraw amount:
60000
Customer Name: DEBCFR
Account Number: 7878329201
Type: Current
Balance: 250000
No Service charge imposed
BUILD SUCCESSFUL (total time: 1 minute 22 seconds)
```

4. Write a Program to display different rate of interest banks using Inheritance concepts

```
package lab3;

import java.util.*;
import java.lang.Math;

class Account {
    String cust_name;
    long balance, interest;
    Scanner sc = new Scanner(System.in);
    void get() {
        System.out.println("Enter Customer Name: ");
        cust_name = sc.nextLine();
        System.out.println("Enter Balance:");
        balance = sc.nextLong();
    }
    void display() {
        int amt = (int)(balance * 2 * interest / 100);
        System.out.println("Customer Name: " + cust_name);
        System.out.println("Balance: " + balance);
        System.out.println("Interest by Bank: " + interest);
        System.out.println("Amount: " + (balance + amt));
    }

};

class HDFC extends Account {
    void display() {
        super.get();
        interest = 12;
        super.display();
    }
}

class ICICI extends Account {
    void display() {
        super.get();
        interest = 9;
        super.display();
    }
}
class SBI extends Account {
    void display() {
        super.get();
```

```
        interest = 11;
        super.display();
    }
}

class Lab4 {
    public static void main(String[] args) {
        HDFC h1 = new HDFC();
        ICICI i1 = new ICICI();
        SBI s1 = new SBI();
        h1.display();
        i1.display();
        s1.display();

    }
}
```

Output:

```
Output - lab3 (run) #3
run:
Enter Customer Name:
ABCD
Enter Balance:
300000
Customer Name: ABCD
Balance: 300000
Interest by Bank: 12
Amount: 372000
Enter Customer Name:
ABCD
Enter Balance:
300000
Customer Name: ABCD
Balance: 300000
Interest by Bank: 9
Amount: 354000
Enter Customer Name:
ABCD
Enter Balance:
300000
Customer Name: ABCD
Balance: 300000
Interest by Bank: 11
Amount: 366000
BUILD SUCCESSFUL (total time: 15 seconds)
```

5. Write a Program to display Method overloading concept

```
package lab3;

class Overload {
    int a,b,c;
    float d,e,f;
    int operation(int a, int b){
        return a+b;
    }
    int operation(int a, int b, int c){
        return (a+c-b);
    }
    float operation(float a, float b){
        return (a*b);
    }
    float operation(float a, float b, float c){
        return(a*c+b);
    }

};

class Lab4 {
    public static void main(String[] args) {
        Overload o1 = new Overload();
        System.out.println("Result: "+o1.operation(2,3,5));
        System.out.println("Result: "+o1.operation(2.4f,3.9f));
        System.out.println("Result: "+o1.operation(9,3));
        System.out.println("Result: "+o1.operation(9.8f, 3.4f, 4.5f));
    }
}
```

Output: