| **Name:** | Mahadev Balla |
| --- | --- |
| **UID:** | 2023300010 |
| **Experiment No.** | 2B |

| **AIM:** | To study method overloading. |
| --- | --- |
| **Program 1** | |
| **PROBLEM STATEMENT :** | Write a menu-driven program to perform payment with the following options:  1- COD---default option of payment  2-Netbanking---read bank details from a user  3-Creditcard-read credit card details from a user |
| **PROGRAM:** | import java.util.Scanner;  class Purchase{  String item;  double price,qty;    Purchase(){  this.item=item;  this.price=price;  this.qty=qty;  }  double Billing(double price,double qty){  System.out.println("Total amount : " + price\*qty);  return price\*qty;  }  void Payment(double amt){  System.out.println("Your product will be delivered to the above address within 7 working days.\nAmount to be paid : " + (amt+50));  }  void Payment(double amt,String Bnkname,long accno){  System.out.println("Rs." + 1.01\*amt + " have been debited from your account.(Account Number : " + accno + ")");  }    void Payment(double amt, long cdtno){  System.out.println("Rs." + 1.02\*amt + " have been debited from your account.(Credit Card number : " + cdtno + ")");  }  }  public class ecom {  public static void main(String [] arr){  Scanner sc = new Scanner(System.in);  double p1 = 3499;  double p2 = 1299;  double p3 = 199;  int x = 0;  do{  System.out.println("Do you want to exit ?(Enter '1' to exit or any other digit to proceed)");  int z = sc.nextInt();  if(z!=1){  System.out.print("\nAvailable products :\n1. Puma Cavens 2.0(White/Gum) - Rs.3499\n2. Manyavar Men's Kurta(Red) - Rs. 1299\n3. Think & Grow Rich(Paperback) - Rs.199\nEnter your choice(digit) : ");  int i = sc.nextInt();  System.out.print("Enter quantity : ");  int qty = sc.nextInt();  Purchase a = new Purchase();  if(i==1){  double amt = a.Billing(p1,qty);  System.out.print("Choose mode of payment -\n1. COD(Delivery Charge - Rs.50)\n2. Net Banking(Convenience Fee - 1%)\n3. Credit Card(Convenience Fee - 2%)\nEnter your choice(digit) : ");  x = sc.nextInt();  switch(x){  case 1: System.out.print("Enter your address : ");  sc.nextLine();  String add = sc.nextLine();  a.Payment(amt);  break;    case 2: System.out.print("Enter the following details -\nName of your bank : ");  sc.nextLine();  String bnk1 = sc.nextLine();  System.out.print("User ID : ");  String uid1 = sc.nextLine();  System.out.print("Password : ");  String pass = sc.nextLine();  System.out.print("Account Number : ");  long accno1 = sc.nextLong();  if(accno1>=1000000000 && accno1<=9999999999L){  a.Payment(amt,bnk1,accno1);  }  else{  System.out.println("Invalid account number. Payment Cancelled!!");  }  break;    case 3: System.out.print("Enter the following details -\nName of your bank : ");  sc.nextLine();  String bnkc1 = sc.nextLine();  System.out.print("Credit Card Number : ");  Long cdt1 = sc.nextLong();  if(cdt1>=1000000000 && cdt1<=9999999999L){  System.out.print("CVV : ");  int cvv = sc.nextInt();  if(cvv>=100 && cvv<=999){  a.Payment(amt,cdt1);  }  else{  System.out.println("Invalid CVV. Payment Cancelled!!");  }  }  else{  System.out.println("Invalid credit card number. Payment Cancelled!!");  }  break;    default: System.out.println("Invalid input. Payment cancelled!!");  }    }  else if(i==2){  double amt = a.Billing(p2,qty);  System.out.print("Choose mode of payment -\n1. COD(Delivery Charge - Rs.50)\n2. Net Banking(Convenience Fee - 1%)\n3. Credit Card(Convenience Fee - 2%)\nEnter your choice(digit) : ");  x = sc.nextInt();  switch(x){  case 1: System.out.print("Enter your address : ");  sc.nextLine();  String add = sc.nextLine();  a.Payment(amt);  break;    case 2: System.out.print("Enter the following details -\nName of your bank : ");  sc.nextLine();  String bnk1 = sc.nextLine();  System.out.print("User ID : ");  String uid1 = sc.nextLine();  System.out.print("Password : ");  String pass = sc.nextLine();  System.out.print("Account Number : ");  long accno1 = sc.nextLong();  if(accno1>=1000000000 && accno1<=9999999999L){  a.Payment(amt,bnk1,accno1);  }  else{  System.out.println("Invalid account number. Payment Cancelled!!");  }  break;    case 3: System.out.print("Enter the following details -\nName of your bank : ");  sc.nextLine();  String bnkc1 = sc.nextLine();  System.out.print("Credit Card Number : ");  Long cdt1 = sc.nextLong();  if(cdt1>=1000000000 && cdt1<=9999999999L){  System.out.print("CVV : ");  int cvv = sc.nextInt();  if(cvv>=100 && cvv<=999){  a.Payment(amt,cdt1);  }  else{  System.out.println("Invalid CVV. Payment Cancelled!!");  }  }  else{  System.out.println("Invalid credit card number. Payment Cancelled!!");  }  break;    default: System.out.println("Invalid input. Payment cancelled!!");  }    }  else if(i==3){  double amt = a.Billing(p3,qty);  System.out.print("Choose mode of payment -\n1. COD(Delivery Charge - Rs.50)\n2. Net Banking(Convenience Fee - 1%)\n3. Credit Card(Convenience Fee - 2%)\nEnter your choice(digit) : ");  x = sc.nextInt();  switch(x){  case 1: System.out.print("Enter your address : ");  sc.nextLine();  String add = sc.nextLine();  a.Payment(amt);  break;    case 2: System.out.print("Enter the following details -\nName of your bank : ");  sc.nextLine();  String bnk1 = sc.nextLine();  System.out.print("User ID : ");  String uid1 = sc.nextLine();  System.out.print("Password : ");  String pass = sc.nextLine();  System.out.print("Account Number : ");  long accno1 = sc.nextLong();  if(accno1>=1000000000 && accno1<=9999999999L){  a.Payment(amt,bnk1,accno1);  }  else{  System.out.println("Invalid account number. Payment Cancelled!!");  }  break;    case 3: System.out.print("Enter the following details -\nName of your bank : ");  sc.nextLine();  String bnkc1 = sc.nextLine();  System.out.print("Credit Card Number : ");  Long cdt1 = sc.nextLong();  if(cdt1>=1000000000 && cdt1<=9999999999L){  System.out.print("CVV : ");  int cvv = sc.nextInt();  if(cvv>=100 && cvv<=999){  a.Payment(amt,cdt1);  }  else{  System.out.println("Invalid CVV. Payment Cancelled!!");  }  }  else{  System.out.println("Invalid credit card number. Payment Cancelled!!");  }  break;    default: System.out.println("Invalid input. Payment cancelled!!");  }  }  else{  System.out.println("Please enter a valid input!!");  }  }  else{  break;  }  }  while(x!=4);  }  } |
| **RESULT:** | |
| **Program 2** | |
| **PROBLEM STATEMENT :** | Create a Date class with data int year, int month, int date, int hrs, int min, int sec. Create a  default, no-argument constructor which sets the default date to January 1, 2000, 00:00:00  Create 3 overloaded setter methods  void setDate(int year, int month, int date)  void setDate(int year, int month, int date, int hrs, int min)  void setDate(int year, int month, int date, int hrs, int min, int sec)  Also write a displayDate() method which will display the date depending on the type of date  object created.  1-add a function calculating the date of retirement at age of 60 for the given input date.  2- You are given the dates of birth of two persons, not necessarily from the same family.  Your task is to find the younger of the two. If both of them share the same date of birth,  then the younger of the two is assumed to be that person whose name comes first in  alphabetical order  The input will have four lines. The first two lines correspond to the first person, while the  last two lines correspond to the second person. For each person, the first line  corresponds to the name and the second line corresponds to the date of birth in DDMM-YYYY format. Your output should be the name of the younger of the two. |
| **PROGRAM:** | import java.util.Scanner;  class Date{  int year, month, date, hrs, min, sec;  Scanner s = new Scanner(System.in);  Date(){  this.year = 2000; this.month = 01; this.date = 01; this.hrs = 00; this.min = 00; this.sec = 00;  }  void setDate(int year, int month, int date){  System.out.print("Set Date(DD-MM-YYYY) : ");  int x = s.nextInt();  this.date = x/1000000;  this.month = ((x/10000)-(date\*100));  this.year = x%10000;  }  void setDate(int year, int month, int date, int hrs, int min){  setDate(year,month,date);  System.out.print("Set Time(HrsHrs:MinMin) - ");  int y = s.nextInt();  this.hrs = y/100; this.min = y%100;  }  void setDate(int year, int month, int date, int hrs, int min, int sec){  setDate(year,month,date);  System.out.print("Set Time(HrsHrs:MinMin:SecSec) - ");  int y = s.nextInt();  this.hrs = y/10000; this.min = ((y/100)-(hrs\*100)); this.sec = y%100;  }  void displayDate(){  System.out.printf("Date : %02d-%02d-%04d \nTime - %02d:%02d:%02d\n", date, (month-(date\*100)), year, hrs, min, sec);  }  }  public class retire {  public static void main(String [] arr){  Scanner sc = new Scanner(System.in);  int year=0, month=0, date=0, hrs=0, min=0, sec=0;  System.out.println("Choose Date & Time Format -\n1. DD-MM-YYYY\n2. DD-MM-YYYY HrsHrs:MinMin\n3. DD-MM-YYYY HrsHrs:MinMin:SecSec\nEnter your choice : ");  int c = sc.nextInt();  Date a = new Date();  switch(c){  case 1: a.setDate(year,month,date);  System.out.println("Default time has been set.");  break;  case 2: a.setDate(year, month, date, hrs, min);  break;  case 3: a.setDate(year, month, date, hrs, min, sec);  break;  default: System.out.println("Default date and time have been set.");  }  System.out.println("1. Display Date & Time\nTo proceed further enter any digit\nEnter your choice : ");  int t = sc.nextInt();  if(t==1){  a.displayDate();  }    System.out.print("Enter details of first person -\nName : ");  sc.nextLine();  String n1 = sc.nextLine();  int temp1 = n1.indexOf(' ');  String sub1 = (n1.substring(0, temp1)).toLowerCase();  String sub2 = (n1.substring(temp1+1,n1.length())).toLowerCase();  //sc.nextInt();  System.out.print("DOB(DD-MM/YYYY) : ");  int dob1 = sc.nextInt();  int d1 = dob1/1000000;  if(d1>0 && d1<32){  int m1 = (dob1/10000)-(d1\*100);  if(m1>0 && m1<13){  int y1 = dob1%10000;  if(y1>0){  System.out.print("Enter details of second person -\nName : ");  sc.nextLine();  String n2 = sc.nextLine();  int temp2 = n2.indexOf(' ');  String sub3 = (n2.substring(0, temp2)).toLowerCase();  String sub4 = (n2.substring(temp2+1,n2.length())).toLowerCase();  System.out.print("DOB(DD/MM/YYYY) : ");  int dob2 = sc.nextInt();  int d2 = dob2/1000000;  if(d2>0 && d2<32){  int m2 = (dob2/10000)-(d2\*100);  if(m2>0 && m2<13){  int y2 = dob2%10000;  if(y2>0){  System.out.println("\nDate of retirement of first person : " + d1 + "-" + m1 + "-" + (y1 + 60));  System.out.println("Date of retirement of first person : " + d2 + "-" + m2 + "-" + (y2 + 60));    if(y1==y2){  if(m1==m2){  if(d1==d2){  int m = sub1.compareTo(sub3);  if(m==0){  int n = sub2.compareTo(sub4);  if(n==0){  System.out.println("Birth dates as well as names of both persons are same!!");  }  else if(n>0){ System.out.println(n2 + " is younger than " + n1); }  else{ System.out.println(n1 + " is younger than " + n2); }  }  else if(m>0){ System.out.println(n2 + " is younger than " + n1); }  else{ System.out.println(n1 + " is younger than " + n2); }  }  else if(d1>d2){ System.out.println(n1 + " is younger than " + n2); }  else{ System.out.println(n2 + " is younger than " + n1); }  }  else if(m1>m2){ System.out.println(n1 + " is younger than " + n2); }  else{ System.out.println(n2 + " is younger than " + n1); }  }  else if(y1>y2){  System.out.println(n1 + " is younger than " + n2);  }  else{  System.out.println(n2 + " is younger than " + n1);  }  }  else { System.out.println("Invalid Date!!"); }  }  else{ System.out.println("Invalid Date!!"); }  }  else{ System.out.println("Invalid Date!!"); }  }  else{ System.out.println("Invalid Date!!"); }  }  else{ System.out.println("Invalid Date!!"); }  }  else{ System.out.println("Invalid Date!!"); }  }  } |
| **RESULT:** | |
| **CONCLUSION:** | Studied the implementation of overloaded methods. |