OBJECT ORIENTED PROGRAMMING PROJECT

(THEORY AND LAB)

SUBMITTED TO:

MISS RIDA AYESHA AND MISS ASMA YOUSAF

SUBMITTED BY:

SHAHZAIB HAZMA(FA20-BSSE-0062)

KHADEEJA SHARIF(FA20-BSSE-0029)

UNIVERSITY MANAGEMENT SYSTEM

TABLE OF CONTENT

1.DESCRIPTION:

This program cover all 4 pillars of Object Oriented Programming inheritance, encapsulation, polymorphism and abstraction.

This is university management system, in which we make students portal in which students can enroll in courses by paying fee and can enroll in 5 different courses, we code this program data and info according to our own university, we also have menu for teachers portal where teachers can take their salary by providing data to through program.

2.MENU CLASS:

In this class we have to methods one is for display the title (WELCOME TO MUHAMMAD ALI JINNAH UNIVERSITY) and other one is menu method in which we have a condition that if user press 1 , program take him to the students portal and if user press 2 program take him to the teachers portal, we also use inheritance in this class.

Source History

```
1   //OOP LAB PROJECT
2   //SUBMITTED TO: MISS RIDA AYESHA
3   //TOPIC: UNIVERSITY MANAGEMENT SYSTEM
4   //MEMBERS:
5   //1.SHAHZAIB HAMZA(FA20-BSSE-0062)
6   //2.Khadeeja Sharif(FA20-BSSE-0029)
7
8   //MENU CLASS
9   package universitymanagementsystem;
10  import java.util.*;
11  public class Menu extends studentsPortal{
12  int number;
13  void display(){
14  System.out.println("****************************************\nWELCOME TO MUHAMMAD
15  }
16
17  void menu(){
18  Scanner s=new Scanner(System.in);
19  number=s.nextInt();
20  switch(number){
21      case 1: student(); break;
22      case 2: teacher(); break;
23
24  }
25  }
26
27   void teacher(){}
28
29  }
```

universitymanagementsystem.Menu

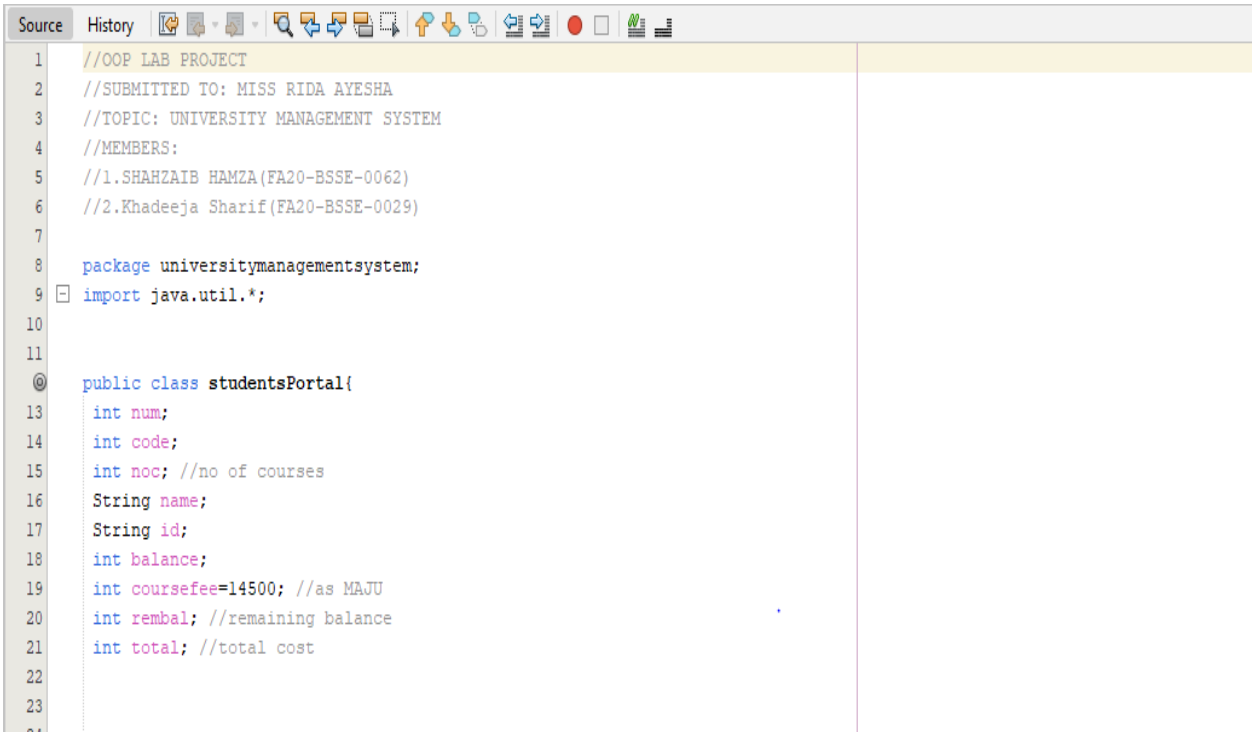
3. STUDENTS PORTAL CLASS:

If user choose 1 in menu class, he/she comes to this class. In this class

User can enter its name and id and balance also, then program ask him to enroll in 5 different courses and each course cost rupees 14500 according to MAJU and then program asks user to enter the number of courses in which user want to enroll in and then program ask user to enter code of that courses in which he want to enroll.

Then program display the whole resultant view of the student's info

It shows balance and name id also with total fees remaining balance etc.



```
Source  History
1  //OOP LAB PROJECT
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3  //TOPIC: UNIVERSITY MANAGEMENT SYSTEM
4  //MEMBERS:
5  //1.SHAHZAIB HAMZA(FA20-BSSE-0062)
6  //2.Khadeeja Sharif(FA20-BSSE-0029)
7
8  package universitymanagementsystem;
9  import java.util.*;
10
11
   public class studentsPortal{
13  int num;
14  int code;
15  int noc; //no of courses
16  String name;
17  String id;
18  int balance;
19  int coursefee=14500; //as MAJU
20  int rembal; //remaining balance
21  int total; //total cost
22
23
```

Source History

```
24
25      void student(){System.out.println("**********\nWELCOME TO STUDENTS ENROLLEMNT\n**********");
26      Scanner s=new Scanner(System.in);
27      System.out.println("ENTER YOUR NAME: ");
28      name=s.nextLine();
29      System.out.println("ENTER YOUR ID: ");
30      id=s.nextLine();
31
32
33      System.out.println("\nEnter 1 for Enrollment: ");
34      num=s.nextInt();
35      if(num==1){enrollment();}
36      else
37      System.out.println("ERROR!!!!!!!!!!");
38
39  }
40
41
42
43
44
45
46  public void enrollment(){
47      {
48  Scanner s=new Scanner(System.in);
49      System.out.println("ENTER BALANCE: ");
50      balance=s.nextInt();
51
52      System.out.println("-------------\nCourses Enrollment\n-----------\nEach Course Cost Rs.14500 \n1.CALCULUS (CODE 000
53
54
55  System.out.println("\nHOW MANY COURSES YOU WANT TO ENROLL IN: ");
56  noc=s.nextInt();
57
58  for(int a=1;a<=noc;a++){
59  System.out.println("Enter Code To Enroll IN The Course");
60  code=s.nextInt();
```

```
for(int a=1;a<=noc;a++){
System.out.println("Enter Code To Enroll IN The Course");
code=s.nextInt();

if(code==0001)
System.out.println("**********\nYOU ARE SUCCESSFULLY ENROLLED IN CALCULUS\n**********");
if(code==0002)
System.out.println("**********\nYOU ARE SUCCESSFULLY ENROLLED IN APPLIED PHYSICS\n**********");
if(code==0003)
System.out.println("**********\nYOU ARE SUCCESSFULLY ENROLLED IN OOP\n**********");
if(code==0004)
System.out.println("**********\nYOU ARE SUCCESSFULLY ENROLLED IN ORAL COMMUNICATION\n**********");
if(code==0005)
System.out.println("**********\nYOU ARE SUCCESSFULLY ENROLLED IN DISCRETE STRUCTURES\n**********");
}
```

Source History

```
73
74      total=coursefee*noc;
75      rembal=balance-total;
76
77      System.out.println("\n-------------RESULTANT INFO----------\n");
78      System.out.println("STUDENTS NAME: "+name);
79      System.out.println("STUDENTS ID: "+id);
80      System.out.println("YOUR BALANCE: "+balance);
81      System.out.println("ENROLLED COURSES: "+noc);
82      System.out.println("TATAL FEE: "+total);
83      System.out.println("YOUR REMAINING BALANCE: "+rembal);
84      System.out.println("----------------------------------------");
85
86      }}
87
88
```

4.TEACHERS PORTAL CLASS:

in this class we can enter name and id and then we have a switch menu in which user can select his/her faculty and his salary is based upon his faculty and number of classes he conduct.

And at last it shows that how much salary he earned and its use abstraction, encapsulation and polymorphism.

```java
//OOP LAB PROJECT
//SUBMITTED TO: MISS RIDA AYESHA
//TOPIC: UNIVERSITY MANAGEMENT SYSTEM
//MEMBERS:
//1.SHAHZAIB HAMZA(FA20-BSSE-0062)
//2.Khadeeja Sharif(FA20-BSSE-0029)

//teachers portal class
package universitymanagementsystem;
import java.util.*;

interface teachersPortal{   //here we use pillar of java oop (Abstraction)
public abstract void getname();
public abstract void setname();
public abstract void getid();
public abstract void setid();
public abstract void faculty();
public abstract void salary();
public abstract void printdata();

}
//this is class which implements abstract methods of teachersportal and extends menu
class Teacher extends Menu implements teachersPortal {

String name;
String id;
int salaryperclass;
int classes;
float netsalary;


@Override
public void teacher(){
System.out.println("\n\n**********************************\nWELCOME TO TEACHERS PORTAL\n**********************************");
}
```

Source History

```java
37
38      @Override
        public void getname(){
40      System.out.println("TEACHERS NAME: "+name);
41      }
42
43
44      @Override
        public void setname(){
        Scanner s=new Scanner(System.in);
47      System.out.println("ENTER NAME: ");
48      name=s.nextLine();
49      }
50
51
52      @Override
```

teachersPortal.java | UniversityManagementSystem.java | Menu.java | teachersPortal.java

Source | History

```
51
52      @Override
53      public void getid(){
54      System.out.println("TEACHERS ID: "+id);}
55
56
57      @Override
58      public void setid(){
59      Scanner s=new Scanner(System.in);
60      System.out.println("ENTER ID: ");
61      id=s.nextLine();
62      }
63
64      //here we use pillar of inheritance (Encapsulation)
65      private String faculty;
66
67      Scanner s=new Scanner(System.in);
68      void setfaculty(){
69          System.out.println("\n-------------------------------\nFROM WHICH FACUI
70          System.out.println("ENTER FACULTY: ");
71      faculty=s.nextLine();
72      }
73
74      void getfaculty(){System.out.println("FACULTY: "+faculty);}
75
76
77      //method over riding (polymorphysm)
78      @Override
79      public void faculty(){
80      switch(faculty){
81          case "computing": salaryperclass=3000; break;
82          case "bio": salaryperclass=1800; break;
83          case "bba": salaryperclass=2000; break;
84      }
85      }
86
87
```

teachersPortal.java | UniversityManagementSystem.java | Menu.java | teachersPortal.java | studentsPortal.java | studentsPo

Source | History

```
85  }
86
87
88  @Override
89  public void salary(){
90  Scanner scanner=new Scanner(System.in);
91  System.out.println("ENTER CLASSES YOU CONDUCT THIS MONTH: ");
92  classes=scanner.nextInt();
93  netsalary=classes*salaryperclass;
94  }
95
96  //print final details
97  @Override
98  public void printdata(){
99      System.out.println("\n\n---------------------RESULTANT INFO---------------------------");
100 getname();
101 getid();
102 System.out.println("FACULTY: "+faculty);
103 System.out.println("SALARY PER CLASS FOR "+faculty+" faculty IS: "+salaryperclass);
104 System.out.println("CLASSES YOU CONDUCT: "+classes);
105 System.out.println("SALARY YOU EARNED THIS MONTH: "+netsalary);
106 System.out.println("-----------------------------------------------------------------");
107 }
108 }
```

5. MAIN CLASS:

So in this class we finalize all methods by creating objects of classes and giving them sequence.

Source History

```
1   //OOP LAB PROJECT
2   //SUBMITTED TO: MISS RIDA AYESHA
3   //TOPIC: UNIVERSITY MANAGEMENT SYSTEM
4   //MEMBERS:
5   //1.SHAHZAIB HAMZA(FA20-BSSE-0062)
6   //2.Khadeeja Sharif(FA20-BSSE-0029)
7   //MAIN CLASS
8   package universitymanagementsystem;
9   import java.util.*;
10
11  public class UniversityManagementSystem {
12
13
14      public static void main(String[] args) {
15       Menu menu=new Menu();
16        studentsPortal sp=new studentsPortal();
17        Teacher tp=new Teacher();
18
19
20       menu.display();
21       menu.menu();
22
23
24      // sp.student();
25
26
27      tp.teacher();
28      tp.setname();
29      tp.setid();
30      tp.setfaculty();
31      tp.faculty();
32      tp.salary();
33      tp.printdata();
34
35
36
37
```

6. POLYMORPHISM.

Source History

```
77    //method over riding (polymorphysm)
78    @Override
      public void faculty(){
80    switch(faculty){
81        case "computing": salaryperclass=3000; break;
82        case "bio": salaryperclass=1800; break;
83        case "bba": salaryperclass=2000; break;
84    }
85    }
86
87
88    @Override
      public void salary(){
90    Scanner scanner=new Scanner(System.in);
91    System.out.println("ENTER CLASSES YOU CONDUCT THIS MONTH: ");
92    classes=scanner.nextInt();
93    netsalary=classes*salaryperclass;
94    }
95
96    //print final details
97    @Override
      public void printdata(){
99        System.out.println("\n\n--------------------RESULTANT INFO--------
100   getname();
101   getid();
102   System.out.println("FACULTY: "+faculty);
103   System.out.println("SALARY PER CLASS FOR "+faculty+" faculty IS: "+sala
104   System.out.println("CLASSES YOU CONDUCT: "+classes);
105   System.out.println("SALARY YOU EARNED THIS MONTH: "+netsalary);
106   System.out.println("-------------------------------------------------
```

7.INHERITANCE

```
//MENU CLASS
package universitymanagementsystem;
import java.util.*;
public class Menu extends studentsPortal{ //Inheritance
int number;
void display(){
System.out.println("*********************************************\nWELCOME TO
}

void menu(){
Scanner s=new Scanner(System.in);
```

8.ENCAPSULATION

Source History

```
public void getname(){
System.out.println("TEACHERS NAME: "+name);
}



public void setname(){
Scanner s=new Scanner(System.in);
System.out.println("ENTER NAME: ");
name=s.nextLine();
}



public void getid(){
System.out.println("TEACHERS ID: "+id);}


public void setid(){
Scanner s=new Scanner(System.in);
System.out.println("ENTER ID: ");
id=s.nextLine();
}

//here we use pillar of inheritance (Encapsulation)
```

9.ABSTRACTION

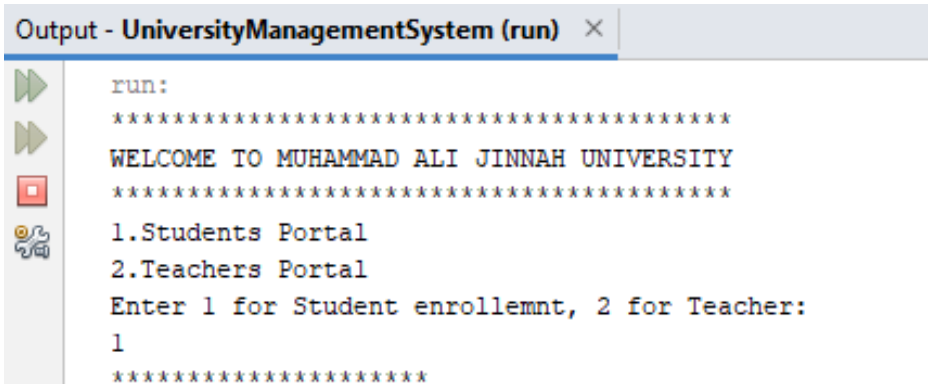
```
package universitymanagementsystem;
import java.util.*;

interface teachersPortal{    //here we use pillar of java o
public abstract void getname();
public abstract void setname();
public abstract void getid();
public abstract void setid();
public abstract void faculty();
public abstract void salary();
public abstract void printdata();

}
//this is class which implements abstract methods of teach
class Teacher extends Menu implements teachersPortal {

String name;
String id;
```

10. OUTPUTS:




```
**********
WELCOME TO STUDENTS ENROLLEMNT
**********
ENTER YOUR NAME:
Shahzaib
ENTER YOUR ID:
Fa20-BSSE-0062

Enter 1 for Enrollment:
1
ENTER BALANCE:
67000
-------------
Courses Enrollment
-----------
Each Course Cost Rs.14500
1.CALCULUS (CODE 0001)
2.APPLIED PHYSISCS (CODE 0002)
3.OBJECT ORIENTED PROGRAMMING (CODE 0003)
4.ORAL COMMUNICATION (CODE 0004)
5.DISCRETE STRUCTURES (CODE 0005)
```

```
HOW MANY COURSES YOU WANT TO ENROLL IN:
3
Enter Code To Enroll IN The Course
0001
*****************************************
YOU ARE SUCCESSFULLY ENROLLED IN CALCULUS
*****************************************
Enter Code To Enroll IN The Course
0004
*****************************************
YOU ARE SUCCESSFULLY ENROLLED IN ORAL COMMUNICATION
*****************************************
Enter Code To Enroll IN The Course
0002
*****************************************
YOU ARE SUCCESSFULLY ENROLLED IN APPLIED PHYSICS
*****************************************
```

```
-------------RESULTANT INFO----------

STUDENTS NAME: Shahzaib
STUDENTS ID: Fa20-BSSE-0062
YOUR BALANCE: 67000
ENROLLED COURSES: 3
TATAL FEE: 43500
YOUR REMAINING BALANCE: 23500
-----------------------------------------
```

```
************************************
WELCOME TO TEACHERS PORTAL
************************************
ENTER NAME:
Alishba
ENTER ID:
fa21

------------------------------
FROM WHICH FACULTY YOU ARE:
1.computing (salary per class: 3000)
2.bio (salary per class: 1800)
3.bba (salary per class: 2000)

ENTER FACULTY:
computing
ENTER CLASSES YOU CONDUCT THIS MONTH:
45
```

```
----------------------RESULTANT INFO----------------------------
TEACHERS NAME: Alishba
TEACHERS ID: fa21
FACULTY: computing
SALARY PER CLASS FOR computing faculty IS: 3000
CLASSES YOU CONDUCT: 45
SALARY YOU EARNED THIS MONTH: 135000.0
------------------------------------------------------------
BUILD SUCCESSFUL (total time: 21 seconds)
```