**UNIVERSITY OF BUEA**

**FACULTY OF ENGINEERING AND TECHNOLOGY**

**DEPARTMENT OF COMPUTER ENGINEERING**

**CEF346: OBJECT ORIENTED PROGRAMMING WITH JAVA**

**PROJECT REPORT**

**IMPLEMENTATION OF A SIMPLE STUDENT MANAGEMENT SYSTEM**

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INTRODUCTION

This is a simple school management system for adding new students into an existing database, enrolling them in existing courses, and generating unique student IDs. The program also displays the status of each student, including personal information, ID, fee balance, and courses which the student has enrolled in.

PROJECT OVERVIEW AND DESCRIPTION

When the application is run;

* It prompts the user to enter the number of new students to be added to the database. If say 3 is entered, there will be 3 students added to the database one at a time. The features of a student are completed before moving to the next.
* The user is prompted to name the student
* Once the student name field is completed, the user is required to choose a domain (faculty or college) in which the student is to be enrolled. The domain is chosen by entering the ‘initial’ to the left of the domain name. The ‘initial’ is used to generate a unique student id for each student registered.
* The program proceeds to a section for the student to enroll in a series of courses (any number). Enter ‘Q’ to break out of this loop.
* Each course costs 1.000 FCFA to enroll. Every time a student enrolls in a course, he is billed another 1.000 FCFA
* The student can pay his bill, view balance and can see the courses enrolled in.
* When these actions are complete, then it will exit this student and move to the next student to enter their information

IMPLEMENTATION AND RESULTS

import java.util.Scanner;

public class Student{

    private String firstName;

    private String lastName;

    private String gradeYear;

    private String studentID;

    private String courses= "";

    private int tuitionBalance= 0;

    private int costOfCourse = 1000;

    private static int id = 10;

    // Constructor: prompt user to enter student's name and year

    public Student(){

        Scanner in = new Scanner(System.in);

        System.out.print("Enter Student first name: ");

        this.firstName = in.nextLine();

        System.out.print("Enter Student Last Name: ");

        this.lastName = in.nextLine();

        System.out.print("FE19A0 - F.E.T\nCO19A0 - C.O.T\nHS19A0 - F.H.S\nAS19A0 - A.S.T.I\nEnter Student's Domain: ");

        this.gradeYear = in.nextLine();

        setStudentID();

    }

     //Generate an ID

     private void setStudentID(){

         //Grade Level + ID

         id++;

         this.studentID = gradeYear + "" + id;

     }

    // Enroll in courses

    public void enroll(){

        do{

            System.out.print("Enter course to enroll (Q to quit): ");

            Scanner in = new Scanner(System.in);

            String course = in.nextLine();

            if (!course.equals("Q")){

               courses= courses + "\n  " + course;

               tuitionBalance= tuitionBalance + costOfCourse;

           }

           else{

               break;

           }

       } while (1!=0);

    }

    //view balance

    public void viewBalance(){

        System.out.println("Your balancee is: "+tuitionBalance+" FCFA");

    }

    //pay Tuition

    public void payTuition(){

        viewBalance();

        System.out.println("Enter your payment (FCFA): " );

        Scanner in = new Scanner(System.in);

        int payment = in.nextInt();

        tuitionBalance = tuitionBalance - payment;

        System.out.println("Thank you for your payment of "+payment+" FCFA");

        viewBalance();

    }

    // show status

    public String toString(){

        return "Name: " + firstName + " " + lastName +

               "\nStudent ID: " + studentID +

               "\nCourses Enrolled: " + courses +

               "\nBalance: " + tuitionBalance + " FCFA";

    }

}

import java.util.Scanner;

public class StudentDatabase {

    public static void main(String[] args){

        //Ask how many new students to add

        System.out.print("Enter number of new students to enroll: ");

        Scanner in = new Scanner(System.in);

        int numOfStudents = in.nextInt();

        Student[] students= new Student[numOfStudents];

        //Create n number of new students

        for(int n=0; n<numOfStudents; n++){

            students[n] = new Student();

            students[n].enroll();

            students[n].payTuition();

            System.out.println(students[n].toString());

        }

   }

}

RESULTS

PS C:\Users\manouri\Desktop\Java Project> c:; cd 'c:\Users\manouri\Desktop\Java

Project'; & 'c:\Users\manouri\.vscode\extensions\vscjava.vscode-java-debug-0.31.0\scripts\launcher.bat' 'C:\Program Files\Java\jdk-11.0.10\bin\java.exe' '-Dfile.encoding=UTF-8' '-cp' 'C:\Users\manouri\AppData\Roaming\Code\User\workspaceStorage\eaad89a7f089ba2b04e2650c2bb0903d\redhat.java\jdt\_ws\Java Project\_5efc31e5\bin' 'StudentDatabase'

Enter number of new students to enroll: 2

Enter Student first name: Nyami

Enter Student Last Name: Declan

FE19A0 - F.E.T

CO19A0 - C.O.T

HS19A0 - F.H.S

AS19A0 - A.S.T.I

Enter Student's Domain: HS19A0

Enter course to enroll (Q to quit): MED 203

Enter course to enroll (Q to quit): CHEM 209

Enter course to enroll (Q to quit): HIST 201

Enter course to enroll (Q to quit): Q

Your balancee is: 3000 FCFA

Enter your payment (FCFA):

2500

Thank you for your payment of 2500 FCFA

Your balancee is: 500 FCFA

Name: Nyami Declan

Student ID: HS19A011

Courses Enrolled:

MED 203

CHEM 209

HIST 201

Balance: 500 FCFA

Enter Student first name: Sundze

Enter Student Last Name: Mike

FE19A0 - F.E.T

CO19A0 - C.O.T

HS19A0 - F.H.S

AS19A0 - A.S.T.I

Enter Student's Domain: FE19A0

Enter course to enroll (Q to quit): OOP346

Enter course to enroll (Q to quit): LAN364

Enter course to enroll (Q to quit): ENG101

Enter course to enroll (Q to quit): FRE102

Enter course to enroll (Q to quit): Q

Your balancee is: 4000 FCFA

Enter your payment (FCFA):

4000

Thank you for your payment of 4000 FCFA

Your balancee is: 0 FCFA

Name: Sundze Mike

Student ID: FE19A012

Courses Enrolled:

OOP346

LAN364

ENG101

FRE102

Balance: 0 FCFA

CONCLUSION

The Java programming language can be used to implement a vast number of applications using skills, ranging from simple through intermediate to advanced programming.

REFRENCES

javahungry.blogspot.com

google.com

https://youtu.be/GOGt7PACl10