import java.util.Scanner;

public class GPA {

public static void main(String[] args) {

System.out.println("Welcome to Humber College");

boolean condition = true;

while (condition = true){

int count = 0;

for(int i = 0 ; i < 3; i++)

{

count++;

Scanner input = new Scanner(System.in);

System.out.println("Enter the password");

String password = input.nextLine();

if(checkPassword(password)==true)

{

System.out.println("Valid Password");

break;

}

else if(count<3)

{

System.out.println("Invalid Password, try again");

}

else

{

System.out.println("Password incorrectly entered three times");

System.out.println("TERMINATING PROGRAM!");

condition = false;

}

}

if (condition == false)

{

break;

}

int count\_students =0;

for(int k = 0; k <3;k++)

{

count\_students++;

Scanner input = new Scanner(System.in);

System.out.println("Enter the number of Students");

System.out.println("Number of entered students should be between 1 to 50");

int student\_count = input.nextInt();

if(student\_count >=1 && student\_count <=50)

{

Student\_info(student\_count);

break;

}

else

if(count\_students<3)

{

System.out.println("Invalid Number: Try again");

}

else

{

System.out.println("Number of students incorrectly entered three times");

System.out.println("TERMINATING PROGRAM!");

condition = false;

}

}

break;

}

}

public static boolean checkPassword(String password)

{

if (password.length() < 10) {

return false;

}

int upcase = 0, nums = 0, spchars = 0;

String spcharsString = "!@#$%&\*()'+,-./:;<=>?[]^\_`{|}";

for (int i = 0; i < password.length(); i++) {

if (Character.isUpperCase(password.charAt(i))) {

upcase++;

}

if (Character.isDigit(password.charAt(i))) {

nums++;

}

if (spcharsString.contains(Character.toString(password.charAt(i)))){

spchars++;

}

}

if (upcase < 1 || nums != 2 && nums != 3 || spchars != 1) {

return false;

}

else {

return true;

}

}

public static void Student\_info(int n)

{

Scanner input = new Scanner(System.in);

String[] name= new String[n];

int [] creditHours = {4, 5, 4, 3, 2, 4};

for(int i =0; i<n; i++)

{

System.out.println("Enter the name of the " + (i+1) + " student");

name[i]= input.nextLine();

}

String [] subjects = {"Math", "Science","Language", "Drama", "Music", "Biology"};

String [] schools = {"School of Engineering", " School of Business", "Law School", "Not accepted"};

int row = name.length;

int column = subjects.length;

double [][] grades = new double [row][column];

for(int l=0;l<grades.length;l++)

{

for (int k = l; k <= l; k++)

{

for (int m = 0; m < column; m++)

{

System.out.println("Input " +name[l]+ "'s mark in "+ subjects[m]);

grades[k][m] = input.nextDouble();

}

}

}

double GPA[] = new double[n];

double individual\_GPA =0;

double total\_marks[] =new double[n];

for(int b = 0; b<row ; b++)

{

for(int c = 0; c<column ;c++)

{

total\_marks[b] = total\_marks[b] + grades[b][c]\*creditHours[c];

}

}

for(int i=0; i<GPA.length;i++)

{

for(int j =0; j<=i;j++)

{

GPA[i]= total\_marks[j]/22;

}

}

int engineering\_count =0, business\_count =0, law\_count =0, not\_accepted\_count =0;

String[] college = new String[n];

for(int i =0; i<GPA.length;i++)

{

if(GPA[i]>= 90 && GPA[i]<=100)

{

engineering\_count++;

college[i]= "School of Engineering";

}

else if(GPA[i]>= 80 && GPA[i]<90)

{

business\_count++;

college[i]= "School of Business";

}

else if(GPA[i]>= 70 && GPA[i]<80)

{

law\_count++;

college[i]= "Law School";

}

else

{

not\_accepted\_count++;

college[i]= "Not accepted";

}

}

int total\_accepted\_students = engineering\_count + business\_count + law\_count;

System.out.println("Report 1");

for(int t =0; t<name.length;t++)

{

System.out.println("Student name: "+name[t]+ "; College name: "+college[t]);

}

System.out.println("Report 2");

System.out.println("Total students accepted in Humber College: "+total\_accepted\_students);

System.out.println(" Number of students in School of Engineering = " +engineering\_count);

System.out.println(" Number of students in School of Business = " +business\_count);

System.out.println(" Number of students in Law School = " +law\_count);

System.out.println("Report 3");

System.out.println("Number of students Not Accepted = " +not\_accepted\_count);

System.out.println();

System.out.println("Report 4");

for(int i = 0; i<total\_marks.length;i++)

{

System.out.println(" Total Marks for "+name[i]+ " are: "+total\_marks[i]);

}

for(int i=0; i<GPA.length;i++)

{

for(int j =0; j<=i;j++)

{

GPA[i]= total\_marks[j]/22;

}

System.out.println(" GPA for "+ name[i]+ " is: " +GPA[i]);

}

}

}