THE STATE UNIVERSITY OF ZANZIBAR

SCHOOL OF SOCIAL AND NATURAL SCIENCE

DEPARTMENT OF SOCIAL SCIENCE

TUNGUU CAMPUS

COURSE CODE:	**INF 21O5**
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QUESTION:1

```
import java.util.Scanner;

class Student {
String regNo;
String name;
float cgpa;
String programName;
String schoolName;
String proctorName;
}



import java.util.Scanner;
public class Main {
public static void main(String[] args) {
Scanner AM = new Scanner(System.in);
System.out.print("Enter the number of students: ");
int n = AM.nextInt();

Student[] students = new Student[n];
AM.nextLine();

for (int i = 0; i < n; i++) {
students[i] = new Student();

System.out.print("Enter registration number of student " + (i + 1) + ": ");
students[i].regNo = AM.nextLine();

System.out.print("Enter name of student " + (i + 1) + ": ");
students[i].name = AM.nextLine();

System.out.print("Enter CGPA of student " + (i + 1) + ": ");
students[i].cgpa = AM.nextFloat();
sc.nextLine();

System.out.print("Enter programme name of student " + (i + 1) + ": ");
students[i].programName = AM.nextLine();

System.out.print("Enter school name of student " + (i + 1) + ": ");
students[i].schoolName = AM.nextLine();

System.out.print("Enter proctor name of student " + (i + 1) + ": ");
students[i].proctorName = AM.nextLine();
}

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

```
System.out.println("Details of student " + (i + 1) + ":");
System.out.println("Registration number: " + students[i].regNo);
System.out.println("Name: " + students[i].name);
System.out.println("CGPA: " + students[i].cgpa);
System.out.println("Programme name: " + students[i].programName);
System.out.println("School name: " + students[i].schoolName);
System.out.println("Proctor name: " + students[i].proctorName);
}
}
}
```

QUESTION:2

```
import java.util.Scanner;

public class AirlineReservationSystem {
public static void main(String[] args) {
boolean[] seats = new boolean[10];
Scanner KY = new Scanner(System.in);

while (true) {
System.out.println("Please type 1 for First Class or 2 for Economy: ");
int section = KY.nextInt();

if (section == 1) {
for (int i = 0; i < 5; i++) {
if (!seats[i]) {
seats[i] = true;
System.out.println("First Class. Seat number: " + (i + 1));
break;
}
if (i == 4 && seats[i]) {
System.out.println("First Class is full. Would you like to be placed in Economy? (yes/no)");
String choice = KY.next();
if (choice.equals("yes")) {
section = 2;
} else {
System.out.println("Next flight leaves in 3 hours.");
break;
}
}
}
}

if (section == 2) {
for (int i = 5; i < 10; i++) {
if (!seats[i]) {
```

```
seats[i] = true;
System.out.println("Economy Class. Seat number: " + (i + 1));
break;
}
if (i == 9 && seats[i]) {
System.out.println("Economy Class is full. Would you like to be placed in First Class?
(yes/no)");
String choice =KY.next();
if (choice.equals("yes")) {
section = 1;
} else {
System.out.println("Next flight leaves in 3 hours.");
break;
}
}
}
}
}
}
}
```

QUESTION:3

```
class MathpremearLegue {
int standard;
int numOfStudents;
int[] marks;
int firstMark;

public MathpremearLegue(int standard, int numOfStudents) {
this.standard = standard;
this.numOfStudents = numOfStudents;
this.marks = new int[numOfStudents];

Scanner sc = new Scanner(System.in);
for (int i = 0; i < numOfStudents; i++) {
System.out.print("Enter marks of student " + (i + 1) + ": ");
marks[i] = sc.nextInt();
}

firstMark = marks[0];
for (int i = 1; i < numOfStudents; i++) {
if (marks[i] < firstMark) {
firstMark = marks[i];
}
}
}

public void findBestClass() {
```

```
int maxStandard = 0;
int maxFirstMark = 0;
for (int i = 0; i < 4; i++) {
if (MathpremearLegue[i].firstMark > maxFirstMark) {
maxStandard = MathpremearLegue[i].standard;
maxFirstMark = MathpremearLegue[i].firstMark;
}
}
System.out.println("The standard with the highest first mark is: " + maxStandard);
}

public void findBestClass(int option) {
int maxStandard = 0;
int maxAverage = 0;
int sum;
int average;
for (int i = 0; i < 4; i++) {
sum = 0;
for (int j = 0; j < MathpremearLegue[i].numOfStudents; j++) {
sum += MathpremearLegue[i].marks[j];
}
average = sum / MathpremearLegue[i].numOfStudents;
if (average > maxAverage) {
maxStandard = MathpremearLegue[i].standard;
maxAverage = average;
}
}
System.out.println("The standard with the highest class average is: " + maxStandard);
}
}

public class Main {
public static void main(String[] args) {
MathpremearLegue] MathpremearLegue = new MathpremearLegue[4];
for (int i = 0; i < 4; i++) {
System.out.print("Enter standard: ");
int standard = sc.nextInt();
System.out.print("Enter number of students: ");
int numOfStudents = sc.nextInt();
MathpremearLeguei] = new MathpremearLegue(standard, numOfStudents);
}

MathpremearLegue.findBestClass();
MathpremearLegue.findBestClass(1);
}
}
```

QUESTION:4

```
import java.util.Scanner;
public class Details {
public static void main(String[] args) {
Scanner za = new Scanner(System.in);
System.out.println("Enter number of students:");
int rows = za.nextInt();
System.out.println("Enter number of tests:");
int cols = za.nextInt();
TestDetails TD = new TestDetails(rows, cols);
TD.storeMarks();
TD.displayMarks();
NoticePeriod NP = new NoticePeriod(rows, cols);
NP.countAndPrintNoticePeriodStudents();
}
}
```

```
import java.util.Scanner;

class TestDetails {
float[][] marks;
int rows, cols;

TestDetails(int rows, int cols) {
this.rows = rows;
this.cols = cols;
marks = new float[rows][cols];
}

void storeMarks() {
Scanner sc = new Scanner(System.in);
for (int i = 0; i < rows; i++) {
System.out.println("Enter number of tests taken by student " + (i + 1));
int testsTaken = sc.nextInt();
System.out.println("Enter marks scored in each test:");
for (int j = 0; j < testsTaken; j++) {
marks[i][j] = sc.nextFloat();
}
}
}

void displayMarks() {
System.out.println("Student marks:");
for (int i = 0; i < rows; i++) {
System.out.print("Student " + (i + 1) + ": ");
for (int j = 0; j < cols; j++) {
System.out.print(marks[i][j] + " ");
}
System.out.println();
```

```
}
}
}

class NoticePeriod extends TestDetails {
NoticePeriod(int rows, int cols) {
super(rows, cols);
}

void countAndPrintNoticePeriodStudents() {
int count = 0;
System.out.println("Notice Period Students:");
for (int i = 0; i < rows; i++) {
int testsTaken = 0, testsPassed = 0;
for (int j = 0; j < cols; j++) {
if (marks[i][j] != 0) {
testsTaken++;
if (marks[i][j] >= 50) {
testsPassed++;
}
}
if (testsPassed >= 3) {
break;
}
}
if (testsTaken < 3 || testsPassed < 3) {
count++;
System.out.println("ID: " + (i + 1));
}
}
System.out.println("Number of notice period students: " + count);
}
}
```

QUESTION:5

```
import java.util.Random;

class SameColorBallException extends Exception{
public static void main (String[]args){
}
public SameColorBallException(String message){
super(message);
}

class Main {
public static void main(String[] args) {
String[] colors = {"red", "green", "blue", "yellow"};
int[] count = {0, 0, 0, 0};
```

```
Random me = new Random();

for (int i = 0; i < 10; i++) {
try {
String color = colors[me.nextInt(4)];
switch (color) {
case "red":
count[0]++;
break;
case "green":
count[1]++;
break;
case "blue":
count[2]++;
break;
case "yellow":
count[3]++;
break;
}
if (count[0] > 3) {
throw new SameColorBallException("Too many red balls");
}
if (count[1] > 3) {
throw new SameColorBallException("Too many green balls");
}
if (count[2] > 3) {
throw new SameColorBallException("Too many blue balls");
}
if (count[3] > 3) {
throw new SameColorBallException("Too many yellow balls");
}
} catch (SameColorBallException e) {
i--;
System.out.println(e.getMessage());
}
}
System.out.println("Number of red balls: " + count[0]);
System.out.println("Number of green balls: " + count[1]);
System.out.println("Number of blue balls: " + count[2]);
System.out.println("Number of yellow balls: " + count[3]);
}
}
}
```