

Exercise 1

```
import java.util.Scanner;
```

```
public class Exercise1{
```

```
    public static void main(String[] args) {
```

```
        System.out.println("Hello, World!");
```

```
        Scanner scanner = new Scanner(System.in);
```

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

```
        String firstName = scanner.nextLine();
```

```
        System.out.print("Enter your Last name: ");
```

```
        String lastName = scanner.nextLine();
```

```
        System.out.println("\nWelcome to Second Year " + firstName + " " +  
lastName);
```

```
        scanner.close();
```

```
    }
```

```
}
```

Exercise 2 & 3

```
import java.util.Scanner;
```

```
import java.util.*;
```

```
public class Marks{
```

```
    static Scanner scanner = new Scanner(System.in);
```

```
    static int n;
```

```
    public static void main(String[] args) {
```

```
        // Ask for "n"
```

```
        System.out.print("Enter n: ");
```

```
        n = scanner.nextInt();
```

```
        System.out.println();
```

```
        double[][] marks = new double[n][3];
```

```
        boolean run = true;
```

```
        int input;
```

```
        while (run) {
```

```
            displayInfo();
```

```
            System.out.print("Enter Choice: ");
```

```
            input = scanner.nextInt();
```

```

switch(input){
    case 1 -> setStudentMark(marks);
    case 2 -> updateStudentMark(marks);
    case 3 -> getSubjectAverage(marks);
    case 4 -> getStudentAverage(marks);
    case 5 -> getStudentTotal(marks);
    case 6 -> displayStudentInfo(marks);
    default -> {
        run = false;
        break;
    }
}
}
scanner.close();
}

```

```

public static void displayStudentInfo(double[][] marks){
    String MATH, CHEM, PHY;
    System.out.println("StudentID  MATH  CHEM  PHY");

    int countID = 1;
    for (double[] studentMarks : marks) {

```

```
MATH = (studentMarks[0] >= 90) ? "A" :  
        (studentMarks[0] >= 80) ? "B" :  
        (studentMarks[0] >= 70) ? "C" :  
        (studentMarks[0] >= 60) ? "D" : "Fail";
```

```
CHEM = (studentMarks[1] >= 90) ? "A" :  
        (studentMarks[1] >= 80) ? "B" :  
        (studentMarks[1] >= 70) ? "C" :  
        (studentMarks[1] >= 60) ? "D" : "Fail";
```

```
PHY = (studentMarks[2] >= 90) ? "A" :  
        (studentMarks[2] >= 80) ? "B" :  
        (studentMarks[2] >= 70) ? "C" :  
        (studentMarks[2] >= 60) ? "D" : "Fail";
```

```
System.out.println("StudentID " + countID + "    " + MATH + "    " + CHEM  
+ "    " + PHY);  
countID++;  
}  
  
}
```

```
public static void displayInfo(){
```

```
System.out.println("\nOptions: ");
System.out.println("1. Add Student Mark.");
System.out.println("2. Update Student Mark.");
System.out.println("3. Get the average for a subject.");
System.out.println("4. Get the average for a student average.");
System.out.println("5. Get the total mark of a Student.");
System.out.println("6. Display Info.\n");
System.out.println("(Leave blank to exit)");
}
```

```
public static void setStudentMark(double[][] marks){
```

```
    // studentID
```

```
    System.out.print("Enter the studentID: ");
```

```
    int studentId = scanner.nextInt();
```

```
    while(studentId < 1 && studentId > n){
```

```
        System.out.println("Invalid StudentID!");
```

```
        System.out.println("Enter the studentID again: ");
```

```
        studentId = scanner.nextInt();
```

```
    }
```

```
    // Subject
```

```
        System.out.println("""
MATHEMATICS - 1
CHEMISTRY - 2
PHYSICS - 3
        \n""");
```

```
        System.out.print("Enter the subject: ");
        int subjectNo = scanner.nextInt();
```

```
        while(subjectNo < 1 && subjectNo > 3){
            System.out.println("Invalid subject number!");
            System.out.println("Enter the subject number: ");
            subjectNo = scanner.nextInt();
        }
```

```
        System.out.print("Enter the Marks: ");
        double currentMark = scanner.nextDouble();
```

```
        while(currentMark < 0 && currentMark > n){
            System.out.println("Invalid Marks!");
            System.out.println("Enter the mark again: ");
            currentMark = scanner.nextDouble();
```

```
}
```

```
// Put the mark into the array
```

```
marks[studentId-1][subjectNo-1] = currentMark;
```

```
System.out.println("New student mark is added..");
```

```
}
```

```
public static void updateStudentMark(double[][] marks){
```

```
}
```

```
public static void getSubjectAverage(double[][] marks){
```

```
// mathematics - 1   Chemistry - 2   Physics - 3
```

```
System.out.println("""
```

```
\nMATHEMATICS - 1
```

```
CHEMISTRY - 2
```

```
PHYSICS - 3
```

```
\n""");
```

```
System.out.print("Enter the subject: ");
```

```
int subjectNo = scanner.nextInt();
```

```
while(subjectNo < 1 && subjectNo > 3){
```

```
        System.out.println("Invalid subject number!");  
        System.out.println("Enter the subject number: ");  
        subjectNo = scanner.nextInt();  
    }
```

```
    int total = 0;
```

```
    for(double[] row : marks){  
        total += row[subjectNo];  
    }
```

```
    System.out.printf("The average is %f\n", (total / n));
```

```
}
```

```
public static void getStudentAverage(double[][] marks){
```

```
    System.out.print("Enter the studentID: ");
```

```
    int studentId = scanner.nextInt();
```

```
    while(studentId < 1 && studentId > n){
```

```
        System.out.println("Invalid StudentID!");
```

```
        System.out.println("Enter the studentID again: ");
```

```
        studentId = scanner.nextInt();
```



```
}
```

```
double total = 0.0;
```

```
for(double mark : marks[studentId-1]){
```

```
    total += mark;
```

```
}
```

```
System.out.printf("The student average is: %.2f\n", (total / 3.0));
```

```
}
```

```
public static void getStudentTotal(double[][] marks){
```

```
    System.out.print("Enter the studentID: ");
```

```
    int studentId = scanner.nextInt();
```

```
while(studentId < 1 && studentId > n){
```

```
    System.out.println("Invalid StudentID!");
```

```
    System.out.println("Enter the studentID again: ");
```

```
    studentId = scanner.nextInt();
```

```
}
```

```
double total = 0;
```

```
for(double mark : marks[studentId-1]){
```

```
total += mark;
```

```
}
```

```
System.out.println("The student total is: " + total);
```

```
}
```

```
}
```