Question 1

```
import java.util.Scanner;

public class Welcome {
	public static void main(String[] args) {
		Scanner sc = new Scanner(System.in);
		  System.out.print("Enter your first name: ");
		String fName = sc.nextLine();
		System.out.print("Enter your last name: ");
		String lName = sc.nextLine();
		System.out.println("Welcome to the Second Year, " + fName + " " + lName);
	}
}
```

```
PS C:\Users\it24103468\Documents> java Welcome
Enter your first name: Sherwarne
Enter your last name: Isham
Welcome to the Second Year, Sherwarne Isham
```

Question 2

```
import java.util.Scanner;

public class Marks {
	static Scanner sc = new Scanner(System.in);
	static int[][] students;
	static int n;
	public static void main(String[] args) {
		System.out.println("\n-------- Marking System (C) IT24103468, 2025 --------\n");
		System.out.println("Note the following for Subject ID");
		System.out.println("1 - Mathematics");
		System.out.println("2 - Chemistry");
		System.out.println("3 - Physics\n");
		System.out.print("Enter number of students: ");
		n = sc.nextInt();
		students = new int[n][3];
		int option, tempStudent, tempSubject;

		do {
			System.out.println();
			System.out.println("1) Add marks\t2) Update marks");
			System.out.println("3) Get subject average\t4) Get student average");
			System.out.println("5) Get student total\t6) Get student grades");
			System.out.print(">>> ");
			option = sc.nextInt();
			System.out.println();

			switch (option) {
				case 1:
					System.out.print("Student ID: ");
					tempStudent = sc.nextInt();
					addMarks(tempStudent);
					break;
				case 2:
					System.out.print("Student ID: ");
					tempStudent = sc.nextInt();
					System.out.print("Subject ID: ");
					tempSubject = sc.nextInt();
					updateMarks(tempStudent, tempSubject);
					break;
				case 3:
					System.out.print("Subject ID: ");
					tempSubject = sc.nextInt();
					avgSubMarks(tempSubject);
					break;
				case 4:
					System.out.print("Student ID: ");
					tempStudent = sc.nextInt();
					avgStMarks(tempStudent);
					break;
				case 5:
					System.out.print("Student ID: ");
					tempStudent = sc.nextInt();
					totStMarks(tempStudent);
					break;
				case 6:
					System.out.print("Student ID: ");
					tempStudent = sc.nextInt();
```

```
                        getStGrades(tempStudent);
                        break;
                  default:
                        break;
            }
      } while (option >= 1 && option <= 6);
}

public static void addMarks(int stID) {
      if (stID > n || stID < 1) {
            System.out.println("Invalid student ID");
      } else {
            System.out.println("Enter the marks");
            System.out.print("Mathematics: ");
            students[stID - 1][0] = sc.nextInt();

            System.out.print("Chemistry: ");
            students[stID - 1][1] = sc.nextInt();

            System.out.print("Physics: ");
            students[stID - 1][2] = sc.nextInt();
      }
}

public static void updateMarks(int stID, int subID) {
      if (stID > n || stID < 1) {
            System.out.println("Invalid student ID");
      } else {
            System.out.println("Enter the marks for ");
            int flag = 0;
            switch (subID) {
                  case 1:
                        System.out.print("Mathematics: ");
                        break;
                  case 2:
                        System.out.print("Chemistry: ");
                        break;
                  case 3:
                        System.out.print("Physics: ");
                        break;
                  default:
                        System.out.print("Invalid subject ID");
                        flag = 1;
                        break;
            }
            if (flag == 0) {
                  students[stID - 1][subID - 1] = sc.nextInt();
            }
      }
}

public static void avgSubMarks(int subID) {
      int flag = 0;
      if (subID < 1 || subID > 3) {
            flag = 1;
      }
      if (flag == 0) {
            float avg = 0;
            for (int i = 0; i < n; i++) {
                  avg += students[i][subID - 1];
```

```
                }
                avg /= n;
                System.out.print("Average marks for ");
                switch (subID) {
                        case 1:
                                System.out.print("mathematics ");
                                break;
                        case 2:
                                System.out.print("chemistry ");
                                break;
                        case 3:
                                System.out.print("physics ");
                                break;
                }
                System.out.println("is " + avg);
        } else {
                System.out.print("Invalid subject ID");
        }
}

public static void totStMarks(int stID) {
        if (stID > n || stID < 1) {
                System.out.println("Invalid student ID");
        } else {
                int sum = 0;
                for (int i = 0; i < 3; i++) {
                        sum += students[stID - 1][i];
                }
                System.out.println("Student's total marks are " + sum);
        }
}

public static void avgStMarks(int stID) {
        if (stID > n || stID < 1) {
                System.out.println("Invalid student ID");
        } else {
                float avg = 0;
                for (int i = 0; i < 3; i++) {
                        avg += students[stID - 1][i];
                }
                avg /= 3;
                System.out.println("Student's average mark is " + avg);
        }
}

public static void getStGrades(int stID) {
        if (stID > n || stID < 1) {
                System.out.println("Invalid student ID");
        } else {
                int markBand;
                for (int i = 0; i < 3; i++) {
                        switch (i+1) {
                                case 1:
                                        System.out.print("Mathematics: ");
                                        break;
                                case 2:
                                        System.out.print("Chemistry: ");
                                        break;
                                case 3:
                                        System.out.print("Physics: ");
```

```
                        break;
                }
                markBand = students[stID - 1][i];
                markBand /= 10;
                if (markBand > 9) {
                        markBand = 9;
                }
                switch (markBand) {
                        case 9:
                                System.out.println("Grade A");
                                break;
                        case 8:
                                System.out.println("Grade B ");
                                break;
                        case 7:
                                System.out.println("Grade C ");
                                break;
                        case 6:
                                System.out.println("Grade D ");
                                break;
                        default:
                                System.out.println("Fail");
                                break;
                }
        }
    }
}
```

```
-------- Marking System (C) IT24103468, 2025 --------

Note the following for Subject ID
1 - Mathematics
2 - Chemistry
3 - Physics

Enter number of students: 3

1) Add marks    2) Update marks
3) Get subject average  4) Get student average
5) Get student total    6) Get student grades
>>> 1

Student ID: 1
Enter the marks
Mathematics: 76
Chemistry: 59
Physics: 79

1) Add marks    2) Update marks
3) Get subject average  4) Get student average
5) Get student total    6) Get student grades
>>> 1

Student ID: 2
Enter the marks
Mathematics: 64
Chemistry: 83
Physics: 68

1) Add marks    2) Update marks
3) Get subject average  4) Get student average
5) Get student total    6) Get student grades
>>> 1

Student ID: 3
Enter the marks
Mathematics: 98
Chemistry: 81
Physics: 80
```

```
1) Add marks    2) Update marks
3) Get subject average  4) Get student average
5) Get student total    6) Get student grades
>>> 3

Subject ID: 1
Average marks for mathematics is 79.333336

1) Add marks    2) Update marks
3) Get subject average  4) Get student average
5) Get student total    6) Get student grades
>>> 4

Student ID: 2
Student's average mark is 71.666664

1) Add marks    2) Update marks
3) Get subject average  4) Get student average
5) Get student total    6) Get student grades
>>> 5

Student ID: 3
Student's total marks are 259

1) Add marks    2) Update marks
3) Get subject average  4) Get student average
5) Get student total    6) Get student grades
>>> 6

Student ID: 2
Mathematics: Grade D
Chemistry: Grade B
Physics: Grade D
```