

<b>University of Petra</b>	 جامعة البترا University of Petra	 30 Year Anniversary جامعة البترا - ثلاثون عاماً University of Petra
Faculty of Information Technology		كلية تكنولوجيا المعلومات
Department of Computer Science		قسم علم الحاسوب

**Information Technology Fundamentals**  
**601105**  
**Final Exam – Coding Question – 2025 (1)**  
**Form B**

**Your Name:** .....

**Your ID:** .....

**Your Instructor Name:** .....

**Instructions for the Exam:**

- Write your name and ID number on the exam and answer sheets.
- Write the number of the section that you enrolled in.
- Write the name of your instructor.
- Questions in the exam not allowed.
- Using any type of technology (mobiles, smart watches) not allowed
- Using extra papers or sheets not allowed
- This is the coding question of the final exam (other questions are computerized).
- Read the following question and write your answer on the paper itself.
- Using VS Code or other IDEs is not allowed.

**For instructor use only:**

Question number	Course ILO	Program ILO	Question weight	Student mark
Q1	P1		10	
			Total /45	

**Question1:** A transportation company owns several cars and wants to calculate the driving range for each car based on its fuel tank capacity and fuel efficiency.

Write a Java program that starts by asking the user to enter the number of cars. Then use a **loop** to get the values of **tankCapacity** and **milesPerGallon** for each car.

1. Ask the user to enter the **number of cars**.
2. If the entered number is zero, print the following message: "**You inserted a zero, bye**", then exit the program.
3. Otherwise: Use a **loop** to read the required values for each car from the user.
4. Calculate the **driving range** for each car using the formula:  
**Driving range = tankCapacity × milesPerGallon**
5. Print the driving range for each car.

**Notes:** Assume that the car travels at a constant speed and that fuel efficiency remains consistent throughout the driving range.

For example, if the input **number of cars is 1**, we should see an output as follows:

```
Please enter the number of cars: 1
Please enter the capacity of the tank: 15
Please enter the miles per gallon: 25
This means the car can drive 375 miles on a full tank.
```

### **Solution**

```
import java.util.Scanner; //0.25
public class DrivingRange { //0.25
    public static void main(String[] args) { //0.25

        Scanner input = new Scanner(System.in); //0.25
        System.out.print("Enter the number of cars: "); //0.5
        int cars = input.nextInt(); //0.75

        if (cars == 0) { //0.75
            System.out.println("You inserted a zero, bye"); //0.5
```

```
} else { //0.5
```

```
for (int i = 1; i <= cars; i++) { //1.5
```

```
System.out.print("Enter tank capacity for car " + i + ": "); //0.5
```

```
double tankCapacity = input.nextDouble(); //0.75
```

```
System.out.print("Enter miles per gallon for car " + i + ": "); //0.5
```

```
double milesPerGallon = input.nextDouble(); //0.75
```

```
double drivingRange = tankCapacity * milesPerGallon; //1.5
```

```
System.out.println("Driving range for car " + i + " = " + drivingRange); //0.5
```

```
}
```

```
}
```

```
}
```

```
}
```