



جامعة عفت  
EFFAT UNIVERSITY

## **OOP - Spring2022**

Author: **Reem Alsharabi S20106353**

Instructor: **Dr. Akila Sarirete**

Date of Submission: **04/02/2022**

## Contents

<b>1</b>	<b>Objectives</b>	<b>2</b>
<b>2</b>	<b>Questions</b>	<b>2</b>
2.1	Question 1 . . . . .	2
2.2	Question 2 . . . . .	3
2.3	Question 3 . . . . .	4
2.4	Question 4 . . . . .	5
<b>3</b>	<b>Conclusion</b>	<b>5</b>

# 1 Objectives

- Use Eclipse to compile and run a java program
- Implement simple java programs using objects and files.

## 2 Questions

### 2.1 Question 1

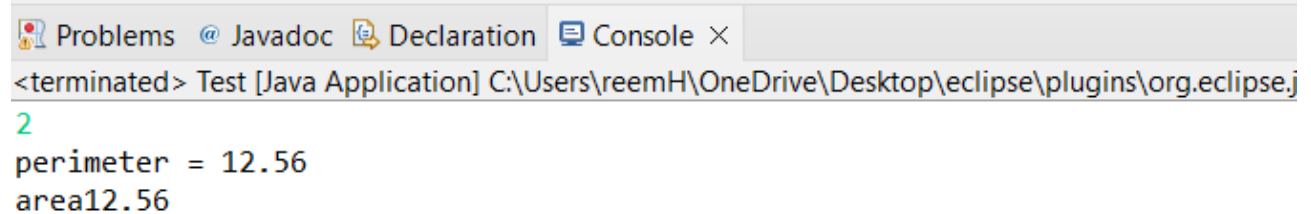
- Code

---

```
public class Test {  
    public static void main(String[] args) {  
        double radius, pi, perimeter, area;  
        java.util.Scanner input = new java.util.Scanner(System.in);  
        pi = 3.14;  
        radius = input.nextDouble();  
        perimeter = 2 * radius * pi;  
        area = radius * radius * pi;  
        System.out.println ("perimeter = " + perimeter + "\narea" + area);  
    }  
}
```

---

- Output



The screenshot shows the Eclipse IDE's Console window. The title bar includes icons for Problems, Javadoc, Declaration, and Console, followed by a close button. The console text shows the program's output: a green prompt '2' followed by 'perimeter = 12.56' and 'area12.56' on the next line. The file path in the title bar is partially visible as 'C:\Users\reemH\OneDrive\Desktop\eclipse\plugins\org.eclipse.j'.

```
<terminated> Test [Java Application] C:\Users\reemH\OneDrive\Desktop\eclipse\plugins\org.eclipse.j  
2  
perimeter = 12.56  
area12.56
```

## 2.2 Question 2

- Code

---

```
public class Q2 {
    public static void main (String [] args) {
        //Store current population
        double intPop = 312032486;

        // Store 365 days in seconds
        double SecondsInYear = 31536000;

        //Number of births per year
        double birthsPerYear = SecondsInYear / 7;

        //Number of deaths per year
        double deathsPerYear = SecondsInYear / 13;

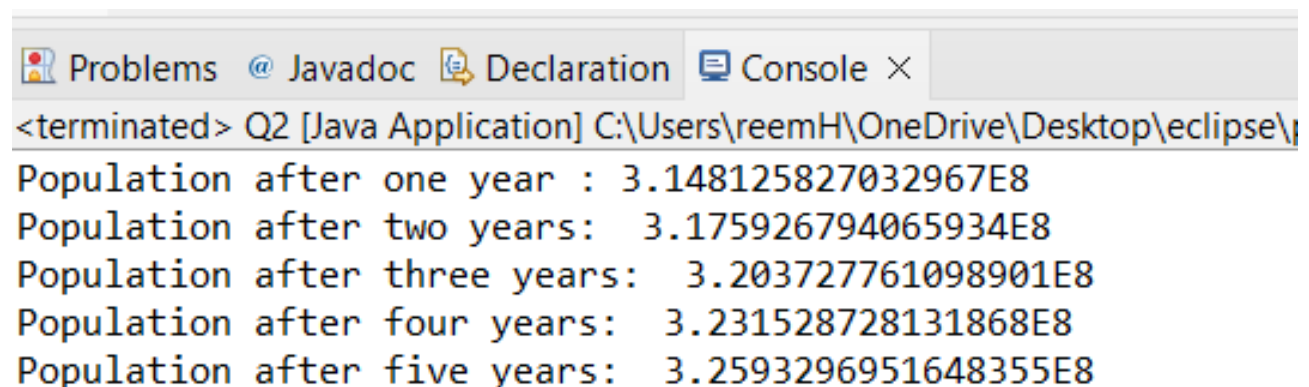
        //Immigration per year
        double immigrantsPerYear = SecondsInYear / 45;

        //Rate of population change per year
        double changePerYear = birthsPerYear - deathsPerYear + immigrantsPerYear;

        System.out.println("Population after one year : " + (double)(intPop + (1 * changePerYear)));
        System.out.println("Population after two years: " + (double)(intPop + (2 * changePerYear)));
        System.out.println("Population after three years: " + (double)(intPop + (3 *
            changePerYear)));
        System.out.println("Population after four years: " + (double)(intPop + (4 *
            changePerYear)));
        System.out.println("Population after five years: " + (double)(intPop + (5 *
            changePerYear)));
    }
}
```

---

- Output



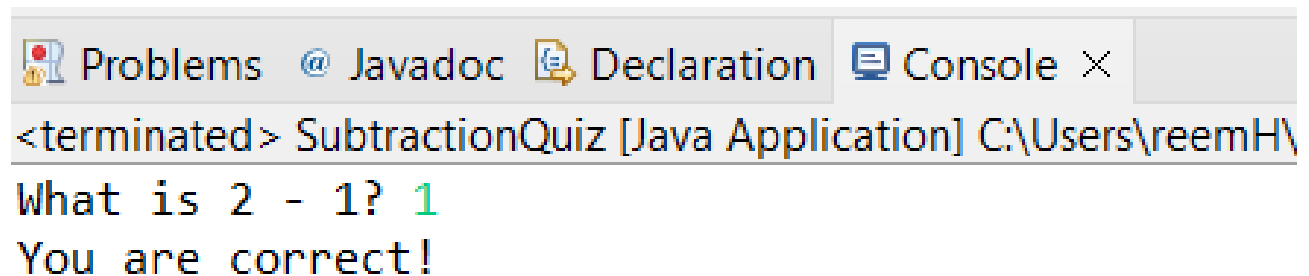
```
<terminated> Q2 [Java Application] C:\Users\reemH\OneDrive\Desktop\eclipse\
Population after one year : 3.148125827032967E8
Population after two years: 3.175926794065934E8
Population after three years: 3.203727761098901E8
Population after four years: 3.231528728131868E8
Population after five years: 3.2593296951648355E8
```

## 2.3 Question 3

- Code

```
import java.util.Scanner;
public class SubtractionQuiz
{
    public static void main(String[] args)
    {
        // 1. Generate two random single-digit integers
        int number1 = (int)(Math.random() * 10);
        int number2 = (int)(Math.random() * 10);
        // 2. If number1 < number2, swap number1 with number2
        if (number1 < number2)
        {
            int temp = number1;
            number1 = number2;
            number2 = temp;
        }
        // 3. Prompt the student to answer "What is number1 - number2?"
        System.out.print("What is " + number1 + " - " + number2 + "? ");
        Scanner input = new Scanner(System.in);
        int answer = input.nextInt();
        // 4. Grade the answer and display the result
        if (number1 - number2 == answer)
            System.out.println("You are correct!");
        else
        {
            System.out.println("Your answer is wrong.");
            System.out.println(number1 + " - " + number2 + " should be " + (number1 - number2));
        }
    }
}
```

- Output



```
<terminated> SubtractionQuiz [Java Application] C:\Users\reemH\
What is 2 - 1? 1
You are correct!
```

- reflection: amazing question, we used the random library, and swapped variables

## 2.4 Question 4

- Code

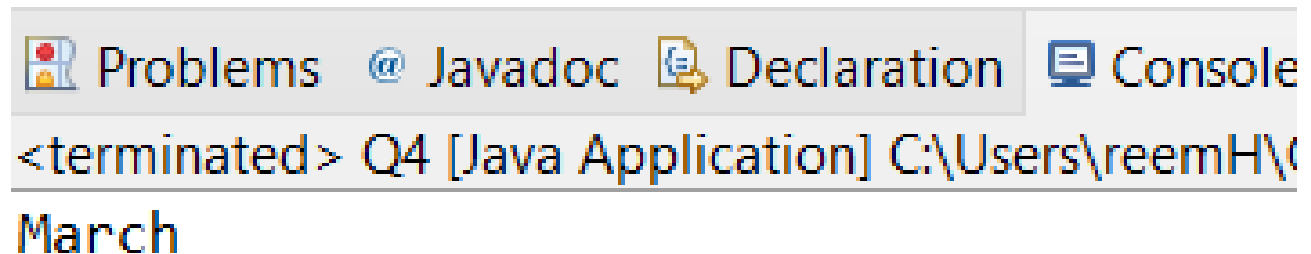
---

```
public class Q4 {
    public static void main(String[] args) {
        // Generate an integer between 1 and 12.
        int month = (int)((Math.random() * 12) + 1);

        // Display the English month name
        switch (month)
        {
            case 1: System.out.println("January"); break;
            case 2: System.out.println("February"); break;
            case 3: System.out.println("March"); break;
            case 4: System.out.println("April"); break;
            case 5: System.out.println("May"); break;
            case 6: System.out.println("June"); break;
            case 7: System.out.println("July"); break;
            case 8: System.out.println("August"); break;
            case 9: System.out.println("September"); break;
            case 10: System.out.println("October"); break;
            case 11: System.out.println("November"); break;
            case 12: System.out.println("December");
        }
    }
}
```

---

- Output



<terminated> Q4 [Java Application] C:\Users\reemH\  
March

## 3 Conclusion

This lab was very clear and helpful. I got better with Java syntax, and how to use the libraries.