

Year 11

Homework 1: Java Revision Exercise

Take a look at the following program:

```
public class Transformations
{
    public static void main (String[] args)
    {
        int choice;
        double centig, fahren;

        do
        {
            menu();
            System.out.print ("Enter your choice: ");
            choice = Keyboard.readInt();
            switch (choice)
            {
                case 1: System.out.print ("Enter centigrades: ");
                    centig = Keyboard.readDouble();
                    System.out.println ("Fahrenheit = " + centToFahr(centig));
                case 2: System.out.print ("Enter Fahrenheit: ");
                    fahren = Keyboard.readDouble();
                    System.out.println ("Centigrade = " + fahrToCent(fahren));
            }
        }while (choice != 3);
    }

    public static void menu ()
    {
        System.out.println ("1 Centigrade to Fahrenheit");
        System.out.println ("2 Fahrenheit to Centigrade");
        System.out.println ("3 End program");
    }

    public static double centToFahr (double cent)
    {
        double fahr = cent*9.0/5.0 + 32.0;
        return fahr;
    }
}
```

```
}  
  
public static double fahrToCent (double fahr)  
{  
    double cent = 5.0*(fahr - 32.0)/9.0;  
    return cent;  
}  
}
```

- a) Name two variables that are found in the program.
- b) Name the types of the variables mentioned in the previous question.
- c) How many methods does the class have? Give the name of one of them.
- d) In the program, find:
 - i) A variable declaration
 - ii) A method definition (declaration)
 - iii) A method call
- e) In the program find:
 - i) An assignment statement
 - ii) Another statement
 - iii) An expression
- f) From the above program find one method signature.
- g) State the name of one method that is parameterless.
- h) State the name of one method that has one or more parameters.
- i) In the line 'public static double centToFahr (double cent)' what is the role of the third term from the left.
- j) What are the roles of the following structures in the program:
 - i) Switch
 - ii) Do...while
- k) To convert inches to centimetres you simply multiply by 2.54. Improve the program by making it convert from inches to centimetres and from centimetres to inches.

Homework 2: October Revision Exercise

- 1) Name one advantage and one disadvantage of the following:
 - a) Teleworking
 - b) Computer games
 - c) Smart phones
 - d) Social networks
- 2) The Internet is taking away our privacy. Comment.
- 3) Today we have information overloading. Comment.
- 4) May 2014 paper 2A no4
- 5) Data integrity is the overall accuracy, completeness, and consistency of data. Explain the terms 'accuracy', 'completeness' and 'consistency'.
- 6) Name two factors that can affect data integrity.
- 7) Name two measures that can be taken to minimize data integrity.
- 8) Data security refers to the process of protecting data from unauthorized access and data corruption throughout its lifecycle.
 - a) Name one measure to minimize unauthorized access.
 - b) Name one measure to minimize data corruption.
- 9) Explain the following terms:
 - a) Data protection act
 - b) Data controller
 - c) Information and data protection commissioner
- 10) Name two principles of data protection.
- 11) Write a Java program that performs the following:
 - a) It creates a one-dimensional array of type 'int' called 'rainfall'. The array has 12 elements.
 - b) It creates a method called 'findAverage' to find the average rainfall throughout the year.
 - c) It creates a method called 'maxAndMin' that states which month had the most rainfall and which month had the least rainfall (for example if rainfall[3] had the most rainfall the method should display 'April').
 - d) The methods 'findAverage' and 'maxAndMin' are called from the main method.