IN
>_COMPUTER SCIENCE

Introduction to Programming in Java

Variables & Types - Exercise Sheet

https://www.incomputerscience.com

1 Objective

The goal of this exercise sheet is to help you apply acquired knowledge on variables & types in Introduction to Programming in Java. The exercises in this sheet will tackle the following material:

1. Declaring Variables
2. Identifiers
3. Initializing Variables
4. Printing with Variables
5. Primitive Data Types

2 Exercises

2.1 Exercise 1: Multiple Choice Questions

Select the correct answer to the following questions.

1. What is the correct way to declare an integer variable x?
   (a) integer x;
   (b) i x;
   (c) int x;
   (d) (int) x;
2. Which of the following identifiers will cause an error?
   (a) player3NAME
   (b) player3name
   (c) 3playerName
   (d) playerName3
3. Which of the following identifiers will cause an error?
   (a) $player

(b) player

(c) _player

(d) ?player

4. Which of these cannot be used for a variable name in Java?

   (a) static

   (b) for

   (c) while

   (d) all of the mentioned

5. Which of these cannot be used for a variable name in Java?

   (a) kilograms

   (b) case

   (c) keyword

   (d) all of the mentioned

6. Which of these keywords are used to store 'A'?

   (a) boolean

   (b) String

   (c) char

   (d) double

2.2 Exercise 2: True or False

Answer True or False to the following questions.

1. A variable can be declared and initialized in one line.
2. Multiple variables of different types can be declared on the same line.
3. An int variable can hold a negative whole number.
4. hourly&wage is a valid variable name.
5. hourlyWage and HourlyWage are considered to be the same variable name in java.
6. A variable can be declared as many times as needed in Java.
7. const is a valid variable name.
8. An identifier is a unique name that is used to refer to a variable.
9. double is not a primitive data type.
10. hourlyWAGE is an example of the camel-case syntax.
11. employee_salary_123 is a valid identifier.
12. String is a primitive data type.

2.3 Exercise 3: Complete the Code

Complete the following snippets of code.

1. The name of the code file is hello.java and it's purpose is to print "Hello everyone!".

```
public class __________ {
    public static void main(String[] args) {
        System.out.println("__________");
    }
}
```

```
Output:
Hello everyone!
```

2. The purpose of this program is to print the hourlySalary of an employee. An example of hourlySalary is 22.5;

```
public class Main {
    public static void main (String[] args) {
        __________ hourlySalary = 22.5;
        System.out.println("The employee's hourly salary is USD " + __________ );
    }
}
```

```
Output:
The employee's hourly salary is USD 22.5
```

3. The purpose of this program is to print the montly salary of an employee that works 5 days a week, 4 hours a day.

```
public class Main {
    public static void main (String[] args) {
        double hourlySalary = 22.5;
        System.out.println("The employee's monthly salary is USD " + __________ );
    }
}
```

```
Output:
The employee's monthly salary is USD 1800
```

2.4 Exercise 4: Tracing

Trace the following snippets of code.

1. What is the output of this code snippet?

```
public class Main{
```

```
    public static void main(String[] args) {
        double x = 4.2;
        System.out.println("x = " + x);
        x = 5.6;
        System.out.println("x = " + x);
    }
}
```

2. What is the output of this code snippet?

```
public class Main{
    public static void main(String[] args) {
        int x = 10;
        double y = 20;
        System.out.println("I am " + y + " years old and my brother is " + x + "
            years old");
    }
}
```

2.5 Exercise 5: Coding

Write a program for each of the following statements.

1. Write a program that declares an int variable n denoting the number of students in a class. Assign the value 10 to n and generates the following output.

```
Output:
There are 10 students in the class.
```

2. Write a program that declares a double variable coffeePrice denoting the price of one coffee (USD 2.5) and that calculates the total price of 10 coffees. The program should generate the following output.

```
Output:
The price of 10 coffees is USD 25.
```