

# Year 11 Computer Science

## Topic 1 - Input/Output, Data Types, and Variables

### Tutorial 1

When we wish to output a value to the console, we use the statement:

`System.out.print(insertValueThatYouWishToPrintHere)` to print on the same line.

`System.out.println(insertValueThatYouWishToPrintHere)` to print on different lines.

In IntelliJ, a neat shortcut for the print statement is to type “sout” and press enter.

1. Declare and initialize a variable of type **int** called **myInt**. Initialize it to the value **10**.
2. Declare and initialize a variable of type **int** called **myInt2**. Initialize it to the value **4**.
3. Declare and initialize a variable of type **double** called **myDouble**. Initialize it to the value **2.5**.
4. Declare and initialize a variable of type **char** called **myChar**. Initialize it to the value **A**.
5. Print out the expression **myInt** divided by **myDouble**. What result do you get?

2.5

6. Print out the expression **myInt** divided by **myInt2**. What result do you get?

2

7. **Cast** the variable **myDouble** to an **int** and store it in a variable called **myInt3**.
8. Print the variable **myInt3**. What result do you get?

2

9. What *type* of casting is this an example of?

Narrowing casting

10. Print the statement **12/0**. What result do you get?

```
Exception in thread "main" java.lang.ArithmeticException: / by zero
    at Task_1.main(Task_1.java:15)
```

11. Print the statement **12.0/0**. What result do you get?

Infinity2

12. Declare a variable called **myDouble2** and initialize it to 4.6.

13. Declare a variable called **myDouble3** and initialize it to 4.4.

14. Declare a variable called **myDouble4** and initialize it to 4.5.

15. Declare a variable called **myChar** and initialize it to 'd'.

16. Declare a variable called **myInt** and initialize it to 66.

17. Add 0.5 to the variable called **myDouble2** and cast it to an **int**. Print this value. What result do you get?

5

18. Add 0.5 to the variable called **myDouble3** and cast it to an **int**. Print this value. What result do you get?

4

19. Add 0.5 to the variable called **myDouble4** and cast it to an **int**. Print this value. What result do you get?

5

20. What did you learn from **tasks 11 - 16**?

I. Dividing an int by 0 runs an error

- II. Dividing a double by 0 returns infinity
- III. Casting a double to an int rounds down to the nearest integer (always down)

21. Cast **myChar** to an **int** and print this value. What result do you get?

100

22. Cast **myInt** to a **char** and print this value. What result do you get?

B

23. Declare and initialize a variable of type **int** called **myInt3** to the value of **7**.

24. Print the variable **myInt**. What result did you get?

7

25. Print **myInt++**. What result did you get?

7

26. Print the variable **myInt**. What result did you get?

8

27. Print **++myInt**. What result did you get?

9

28. What did you learn from **tasks 18 - 21**?

In the recent tasks, I learnt that adding the increment operators as a prefix increments the variable first, then the function runs. Using it as a postfix allows the function to run before incrementing the variable.

I also learned that the order of code is important (e.g. ++ before means it's incremented before the function and ++ after means increment after)