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.

Please write the number of each task as a comment above each task. For example:

```
// 1
int myInt = 10;
// 2
int myInt2 = 4;
```

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?

4.0

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

2

7. What did you learn from **tasks 5** and **6**?

When using the /= arithmetic operator, it rounds to the nearest integer.

8. **Cast** the variable **myDouble** to an **int** and store it in a variable called **myInt3**.

9. Print the variable **myInt3**. What result do you get?

2

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

Narrowing

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

Error

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

Infinity

13. Declare a variable called **myDouble2** and initialize it to 4.6.
14. Declare a variable called **myDouble3** and initialize it to 4.4.
15. Declare a variable called **myDouble4** and initialize it to 4.5.
16. Add 0.5 to the variable called **myDouble2** using the compound addition operator.
17. Cast **myDouble2** to an **int**. Print this value. What result do you get?

5.0

18. Add 0.5 to the variable called **myDouble3** using the compound addition operator.
19. Cast **myDouble3** to an **int**. Print this value. What result do you get?

4.0

20. Add 0.5 to the variable called **myDouble4** using the compound addition operator.

21. Cast **myDouble4** to an **int**. Print this value. What result do you get?

5.0

22. What did you learn from **tasks 16 - 21**?

Casting a Double to an int will round it down to the nearest integer.

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

65

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

Line Feed

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

26. Print the variable **myInt3**. What result did you get?

7

27. Print **myInt3++**. What result did you get?

7

28. Print the variable **myInt3**. What result did you get?

8

29. Print **++myInt3**. What result did you get?

9

30. What did you learn from **tasks 27 - 29**?

If the ++ is prefixing the integer, it will add 1 to the variable before it prints, and if it is postfixing the integer, it will add 1 to the variable after it prints.

31. Print 145%10. What result did you get?

5

32. Print 178%10. What result did you get?

8

33. What did you learn from **tasks 31** and **32**?

The % operator gives the remainder when the first value is divided by the second.

34. Print 10%2. What result did you get?

0

35. Print 11%2. What result did you get?

1

36. Print 12%2. What result did you get?

0

37. What did you learn from **tasks 34 - 37**?

The % operator gives the remainder when the first value is divided by the second.