

BOOLEAN, IF-ELSE & SWITCH

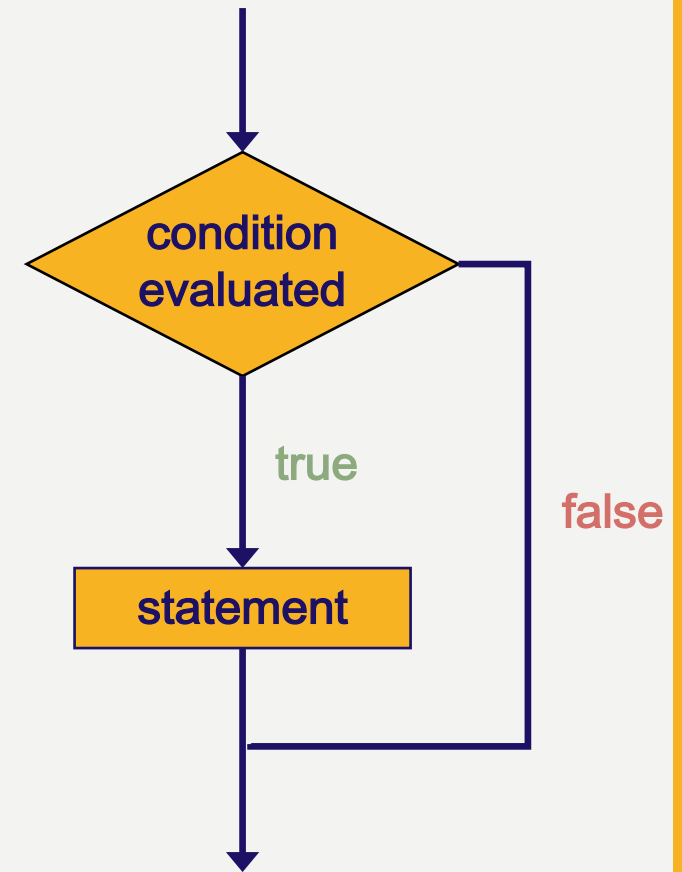
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BOOLEAN

- One of the primitive data types
- Two values: `true` and `false`
- Can be used in conditionals
- Only two values so often does not need to be declared

CONDITIONALS

- Have a test statement (which must evaluate to true or false)
- Often used to allow users to respond to the program
- There are two types
 - If-Else statements
 - Switch statements
 - (mostly used when there are multiple possibilities)
- Example:
 - Executing code in a guessing game, when the user enters the right guess



```
1 public class IfStatements {
2     public static void main(String[] args) {
3         boolean helloWorld = false;
4         if(helloWorld)
5             System.out.println("Hello World");
6         else {
7             System.out.println("Hello to something else I guess");
8             System.out.println(
9                 "you need {} if you have more than one statement");
10        }
11
12        if(true) {
13            System.out.println("you can also just use an if");
14            System.out.println("nothing will happen though " +
15                "if the condition is false");
16        }
17    }
18 }
19 }
```

IF-ELSE SYNTAX



OPERATORS



Syntax:	Means:
<	Less than
>	Greater than
<=	Less than or equal to
>=	Greater than or equal to
==	Equals

= means assignment
== means comparison

Syntax:	Means:
&&	AND
	OR
!	NOT

BUT WHAT ABOUT MULTIPLE POSSIBLE VALUES FOR THE TEST CONDITION?

```
1 public class IfElseStatements {
2     public static void main(String[] args) {
3         //the statement below just sets random
4         //to a number between 1 & 9
5         int rand = (int)(Math.random() * 9 + 1);
6         |
7
8         if(rand < 4)
9             System.out.println("123, eyes on me");
10        else if(rand >= 4 && rand <= 6)
11            System.out.println("456, nvm not good at rhymes");
12        else
13            System.out.println("789, refer to above");
14    }
15 }
```

NESTED IFS – putting ifs in other ifs



```
1 public class ChristmasTest {
2     public static void main(String[] args) {
3         int month = 12;
4         int day = (int) (Math.random() * 31 + 1);
5
6         //just testing for xmas
7         if(month == 12 && day == 25)
8             System.out.println("Merry Christmas");
9         else
10            System.out.println("Still not Christmas");
11
12        //testing for december holidays
13        if(month == 12) {
14            if(day == 25)
15                System.out.println("Merry Christmas!");
16            else if(day >= 2 && day <= 10)
17                System.out.println("Happy Hanukkah!");
18            else
19                System.out.println("Not Christmas or Hanukkah");
20        }
21    }
22 }
```

SWITCH STATEMENTS



- Easier (cleaner) option for testing multiple values
- Checks a variable for multiple possible options (does not use a single boolean)
- Case statements will continue until they hit break or return a value

```
1 public class SwitchStatement {
2     public static void main(String[] args) {
3         int month = (int) (Math.random() * 12 + 1);
4
5         switch(month) {
6             case 12: case 1: case 2:
7                 System.out.println("Winter is gross");
8                 break;
9             case 3: case 4: case 5:
10                System.out.println("Spring is sprung");
11                break;
12             case 6: case 7: case 8:
13                System.out.println("What time is it? SUMMERTIME");
14                break;
15             case 9: case 10: case 11:
16                System.out.println("Pro: Apple Cider, Con: School");
17                break;
18             default:
19                System.out.println("I screwed something up");
20
21         }
22     }
23 }
```