Recitation 3 - January 23 A4/GR

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Relational/Conditional Operators

Equality/ Relational Operators

These **create** `boolean` values from other values

- == (equals)
- ! = (not equals)
- <= (less than or equal to)
- >= (greater than or equal to)
- < (less than)
- > (greater than)

Don't confuse the equality operator with the assignment operator!

Conditional Operators

These **combine** `boolean` values

- `&&` (AND operator)

&&	F	T
F	F	F
T	F	T

- `||` (OR operator)

||	F	T
F	F	T
T	T	T

Variable Control Flow

Conditional Execution

If's

Your first introduction to conditional execution!

```
if (expression) {
    // executes if expression
    // is true
}


// Rest of your program...
```

If/Else

```
if (expression) {
    // expression is true
} else {
    // expression is false
}

// Rest of your program...
```

If/Else If

```
if (expression) {
    // expression is true
} else if (expression2) {
    // expression is false
    // expression2 is true
}

// Rest of your program...
```

Ternary Expression

Syntactic Sugar!

```
int a;
int b = Math.random();

(b > 0.5) ? (a = 1) : (a = 2)
```

SAME AS

```
if (b > 0.5) {
    a = 1
} else {
    a = 2
}
```

Switch

A quick if, else if, else if, ..., else

```
switch (value) {
    case const1:
        // value == const1
    case const2:
        // value == const2
    default:
        // value is neither
}
```

Iteration

While

Iterates while a condition is true

```
while (condition) {

    // executes if

    // condition is true

}
```

1. Evaluate condition
2. If true, execute loop body, if false, skip loop body and continue program.
3. Repeat

Do-While

Like while, but different

```
do {

    // executes at least once

} while (condition);
```

1. Execute loop body
2. Evaluate condition
3. If true, repeat, if false, continue program

For

A prettier loop

```
for (init; cond; iteration) {

    // executes if condition is

    // true

}
```

1. Run initialization
2. Evaluate condition
3. If true, execute loop body, if false, skip rest and continue program
4. Run iteration
5. Loop back to 2