Program Flow

• Remember that we talked about the **flow** of a program in R

• R reads the lines in a script one by one from top to bottom

• But you might not always want this to be the case!

• What if you only wanted some lines of code to be run if a certain condition is True?
If-Statements

- An **if-statement** allows you to check conditions (logical values) and change the program flow based on those conditions.

- If-statements let you run specific lines of code (or completely ignore code) depending on **conditions** that you specify.

- These conditions are specified by logical values:
  - **TRUE**, **FALSE**
If-Statement Format

```c
if (condition1) {
    ..statements1..
} else if (condition2) {
    ..statements2..
} else if ...
...
...
else {
    ..statementsN
}
```

This whole block is considered one if-statement.
If-Statement Format

```java
if (condition1) {
    ..statements1..
} else if (condition2) {
    ..statements2..
} else if ...
... ...
else {
    ..statementsN..
}
```

- The if-statement first checks if `condition1` is true
  - If so, it executes `statements1`, line-by-line
  - It then skips the rest of the if-statement
If-Statement Format

```java
if (condition1) {
    ..statements1..
} else if (condition2) {
    ..statements2..
} else if ...
...
...
else {
    ..statementsN..
}
```

- If condition1 is not true, then it checks to see if condition2 is true
  - If so, it executes statements2, line-by-line
  - The rest of the if-statement is skipped
If-Statement Format

```java
if (condition1) {
    ..statements1..
} else if (condition2) {
    ..statements2..
} else if ...
... ...
... ...
else {
    ..statementsN..
}
```

- If condition2 is not true, it will continue on with this pattern, checking all the other else if statements.
If-Statement Format

```java
if (condition1) {
    ..statements1..
} else if (condition2) {
    ..statements2..
} else if ...
    ...
    ...
else {
    ..statementsN..
}
```

- Lastly, if none of the previous conditions are true, it will run statements after `else`
Examples in RStudio