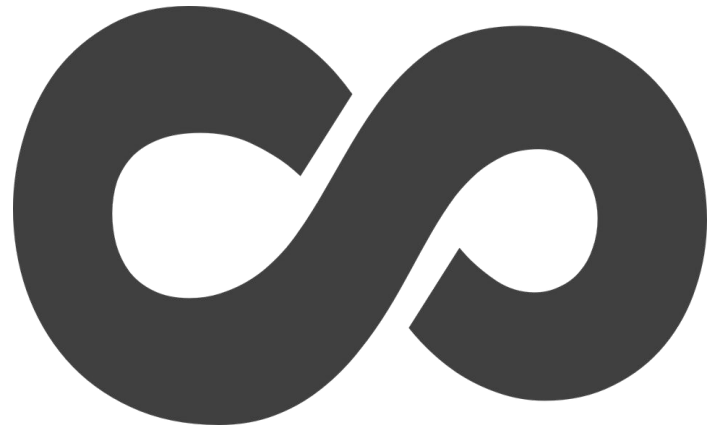# While Loops

Repetitions

- Used to: repeat a certain step in an algorithm
  - Easier to use/code than copying and pasting code
  - Extremely useful for an unspecified number of repeititions

Repetitions

- 3 Ways to do repetitions in C…
  - 1) While loops
  - 2) For loops
  - 3) Do while loops → less important, but will cover them

While Loops

```
While (/* Some condition */) {

    /* Code goes here */

}
```

- The loop will repeat, as long as the *condition* is true

While Loops


```
While (/* Some condition */) {

    /* Code goes here */

}
```

- Structurally, it is extremely similar to *if* statements

While Loops

- Terminating a while loop (2 main ways)

While Loops

- Terminating a while loop (2 main ways)
  - 1) *Terminating Condition*
    - Runs until some condition is reached
  - 2) *Counter*
    - Tells the loop how many times to run

Terminating Conditions

- Reacts to changing variables within the while loop

```
int foo = 10;

While (foo < 100) {

    foo = foo + 10;

}
```

Terminating Conditions

- Reacts to changing variables within the while loop

```
int foo = 10;
int user_input;
While (foo < 100) {
    scanf("%d", &user_input);
    foo = foo + user_input;
}
```

Terminating Conditions

- Reacts to changing variables within the while loop

```
int foo = 1;
While (foo != -1) {
    scanf("%d", &foo);
    printf("Foo is %d", foo);
}
```