

A large red square with a white border, centered on a white background. Inside the square, the text "Break and Continue" is written in white.

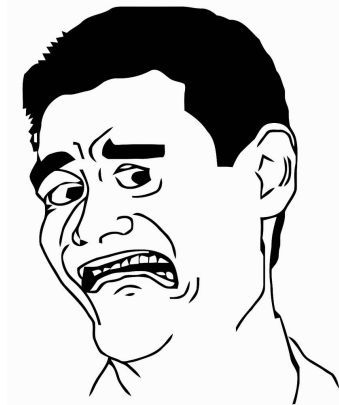
**Break and
Continue**

Coding Practices

- “Good Code”
 - Easy to understand
 - Easy to read
 - If you had to give it to someone who didn’t know what you were working on, they could figure it out in <5 minutes



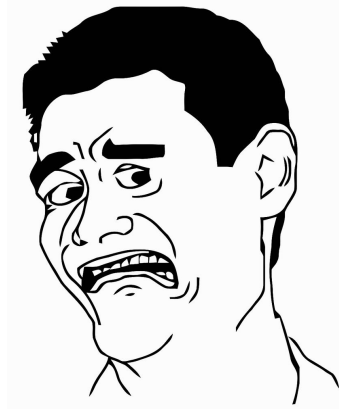
Coding Practices



- “Bad Code”
 - Opposite of good code
 - Still compiles, but is extremely difficult to figure out what it does
- International Obfuscated C Code Contest
 - <http://www.ioccc.org/>

Break / Continue

- Provide ways to stop a loop BESIDES the terminating condition
- Usually considered “bad code”
 - Loops “should” have only one way to exit (the termination condition)
 - BUT there are some situations where it comes in handy...



Break

- Causes the loop to end IMMEDIATELY whenever the command *break*; is executed

```
int i;  
for (i = 0; i < 10; i++) {  
    if (i == 5) {  
        break;  
    }  
}
```



Break

- Visualization: <http://cscircles.cemc.uwaterloo.ca/7c-loops/>

```
int i;  
for (i = 0; i < 10; i++) {  
    if (i == 5) {  
        break;  
    }  
}
```



Prime Numbers



- Numbers that cannot be divided by anything other than themselves and 1
 - Ex: 1, 3, 5, 7, 11, 13, 17, 23, etc...
- Writing a code that can calculate prime numbers can use a *break* statement
 - There are better ways to do this...but this is one example

Continue

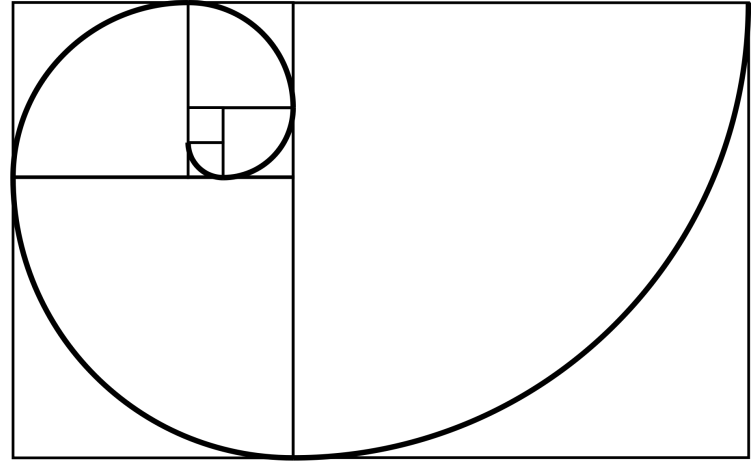
- Causes the remainder of a single repetition to be skipped

```
int i;  
for (i = 0; i < 10; i++) {  
    if (i == 5) {  
        continue;  
    }  
    printf("%d\n", i);  
}
```



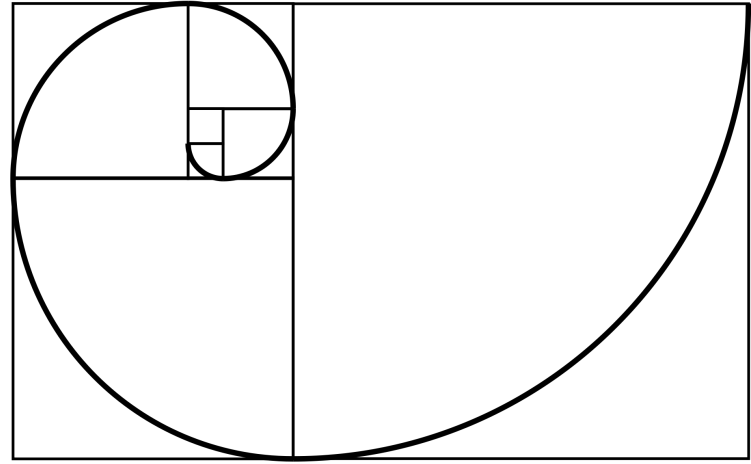
Fibonacci Numbers

- 1, 1, 2, 3, 5, 8, 13...
- What comes next / What is the pattern?



Fibonacci Numbers

- 1, 1, 2, 3, 5, 8, 13...
- Creating a fibonacci sequence of length n can use a break statement
 - There are better and more efficient ways to do this...but this is one way



Continue Coding Challenge

You are in charge of counting down a NASA liftoff
→ but there is a specific script that you have to follow. You have to say

10, 9, 8, Main engines start, 6, 5, 4, 3, 2, 1, Liftoff

, exactly in that order. Your job is to make a for loop that counts down from 10-0 and prints out your exact script.

