FRC Java
Lesson 3

Loops
While, for, do while

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While Loop

```
while(<condition>) {
    <code>;
}
```

- If the condition is true
  - The code inside is continuously runs
- If the condition is not true, or becomes not true
  - The code is no longer run

For Loop

```
for(<type> <name> = <data>; <condition>;<aftermath) {
    <code>;
}
```

- Three parameters
  - Make a new variable that exists only in the loop
  - Condition of the loop (while true, loop runs)
  - Code to run at the end of each loop
- The only necessary part is the condition
  - for(int i = 0; <condition>;) {}
  - for(;<condition>;) {}

For Loop Example

```
for(int i = 0; i < numLights; i++) {
  led.light(i);
}
```

- So the first part sets an integer i to zero.

- Then the check is if I is less than numLights

- After each run of the loop we add 1 to i.

- (this would light up an array of lights one by one)

Do While Loop

```
do {
  <code>;
} while(<condition>);
```

- The Code is run once then if the condition is
  - True: the code is run again until condition is false
  - False: the code is not run again
- For when you need the code to run at least once

Assignment

- Use a for loop to count down from 100 printing out what number you are at and then BLASTOFF

- Do the same with a While Loop

- FizzBuzz: Loop from 1 to 100. if number is evenly divisible by 3 print FIZZ, if evenly divisible by 5 print BUZZ, if it is evenly divisible by both print FIZZBUZZ