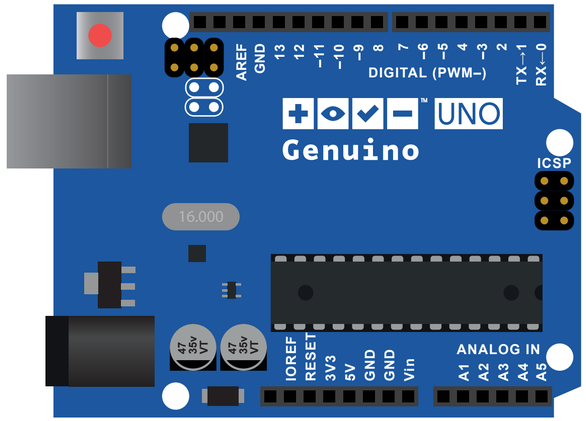
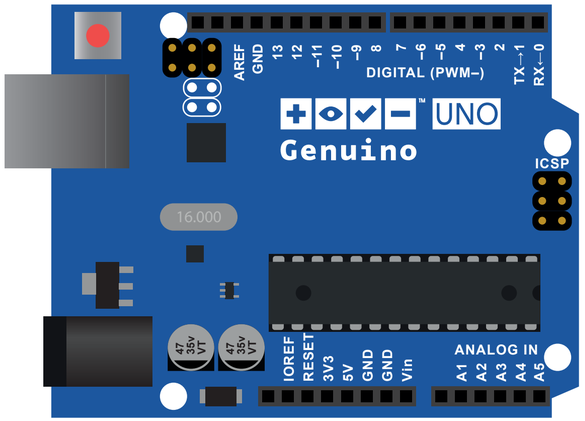
What is Arduino?



Making Space

What is Genuino/Arduino?

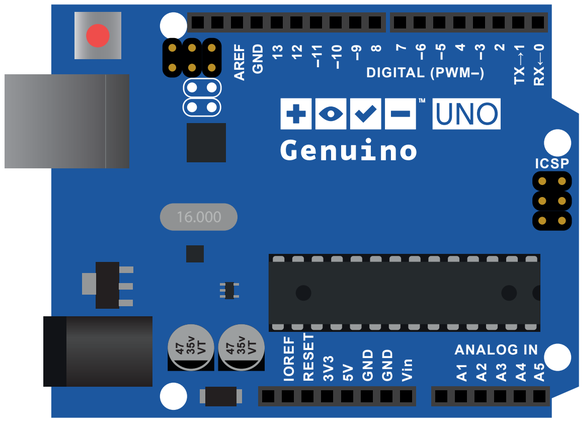


ARDUINO™

IDE

Making Space

What is Genuino/Arduino?



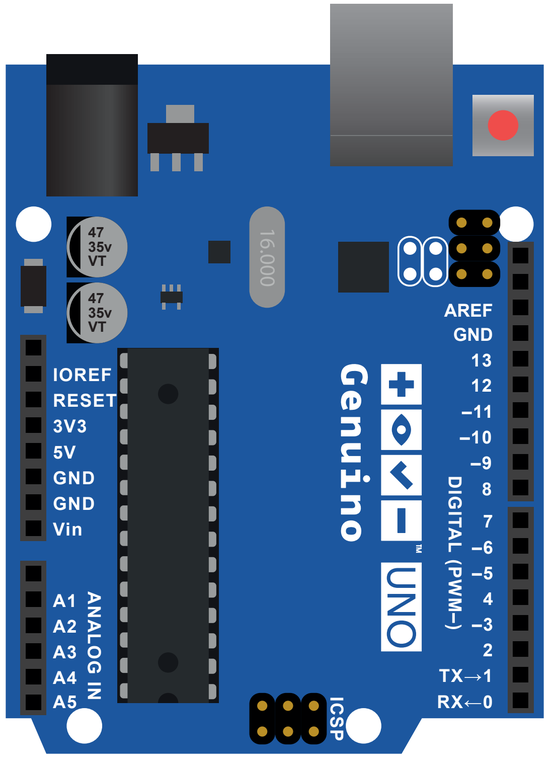
ARDUINO
OPEN-SOURCE
COMMUNITY

ARDUINO™
IDE

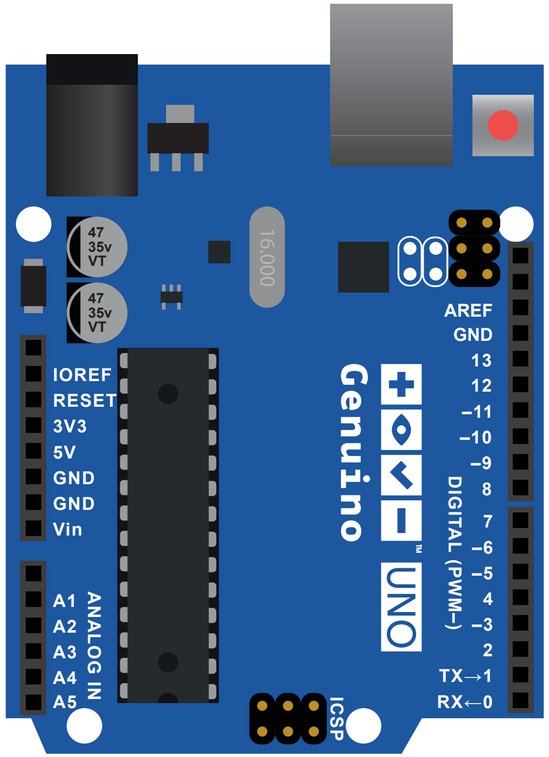
arduino.cc

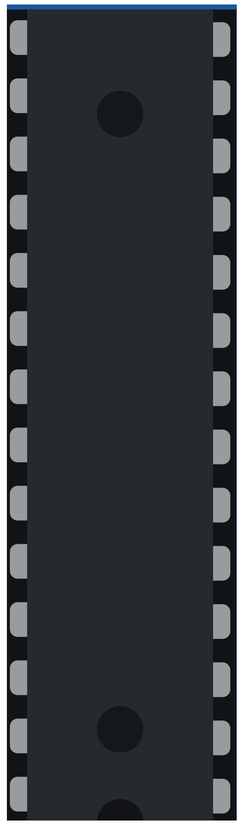
Making Space

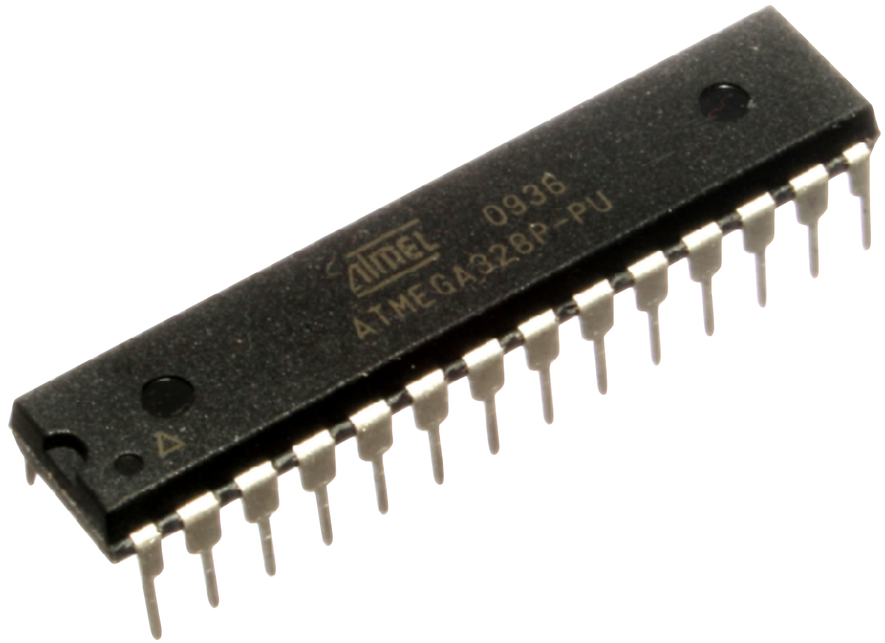
What is microcontroller?



What is microcontroller?

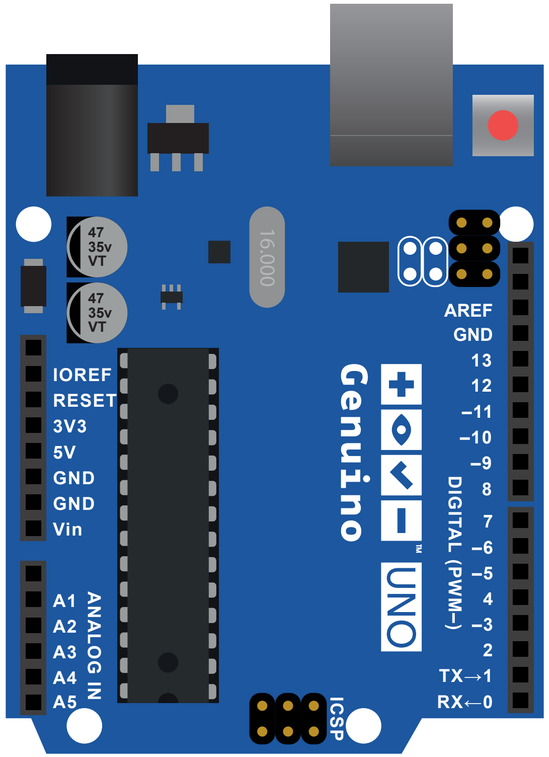


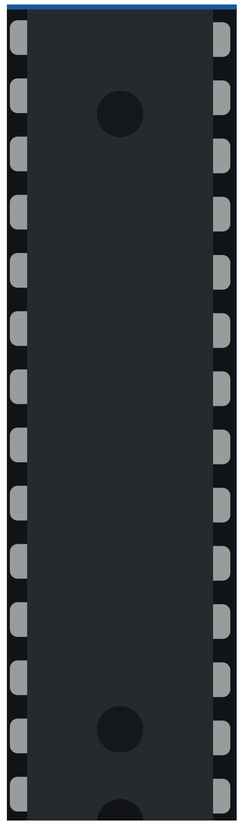




Making Space

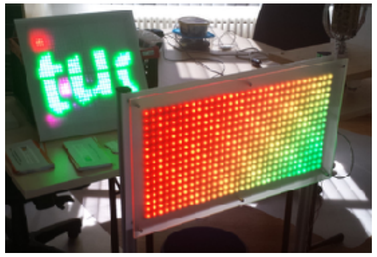
What is microcontroller?

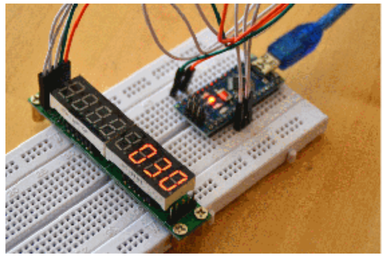




Power

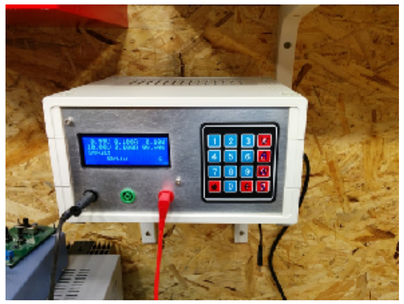
Program





Input

Output



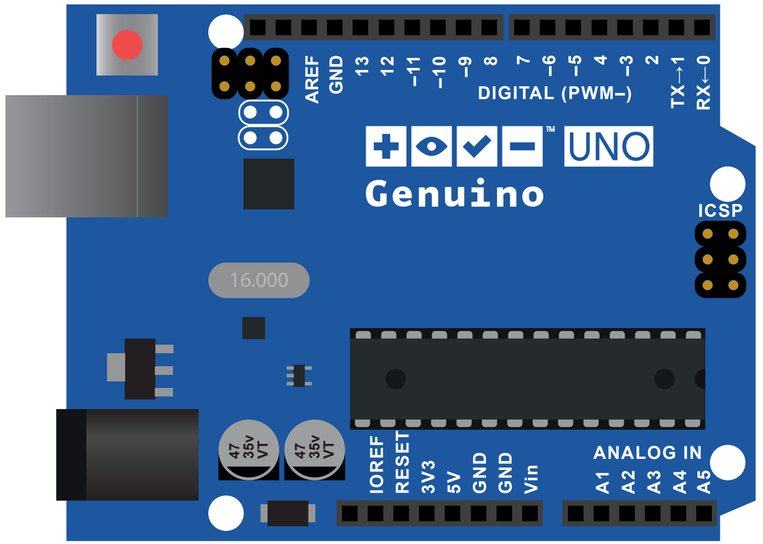
Making Space

Things to note

max 20mA

max 500mA

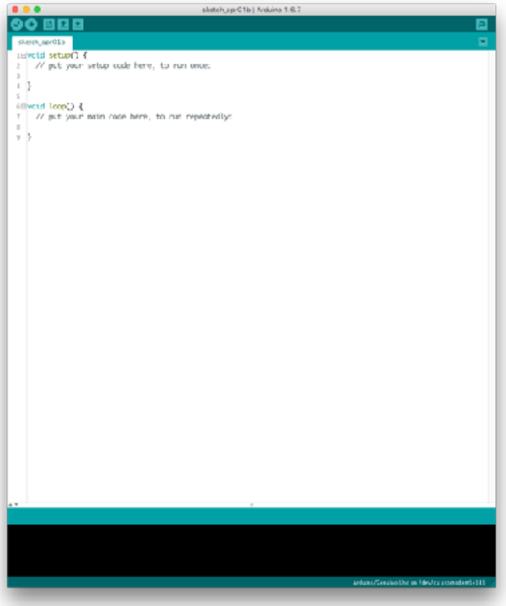
7-12V



max 5V

Making Space

Programming the Arduino



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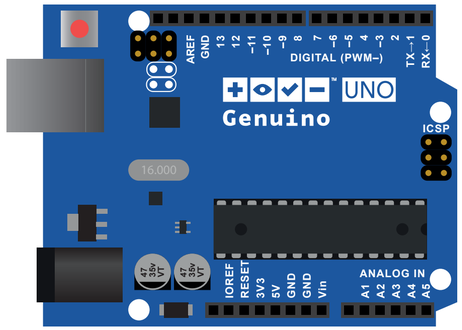
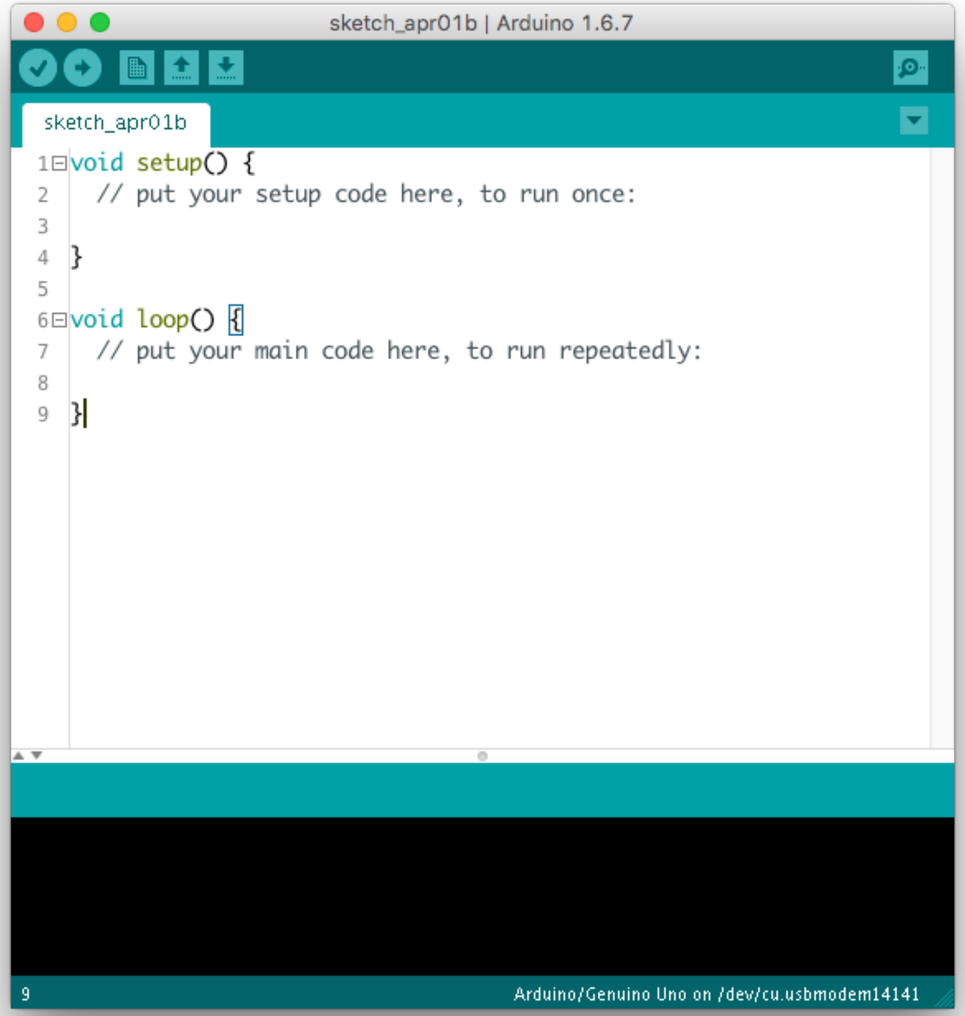


Making Space

Programming the Arduino

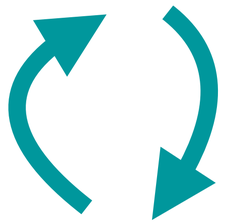


Making Space

Basics Structure

```
void setup() {
  // put your setup code here, to run once:

}
```



```
void loop() {
  // put your main code here, to run repeatedly:

}
```

Making Space

Basics

Variables

unsigned	int	±32,768
	byte	0 - 255
	float	±3.4028235E+38
	char	ASCII character
unsigned	long	±2,147,483,647

```
int var = 10;
int var2;
const int constvar = 20;

var2 = var + constvar;
```

Making Space

Basics

Input/Output

```
pinMode(pin, INPUT/OUTPUT)
digitalWrite(pin, HIGH/LOW)
analogWrite(pin, 0-255)
digitalRead(pin) ⟶ HIGH/LOW   TRUE/FALSE
analogRead(pin) ⟶ 0-1023
```

Making Space

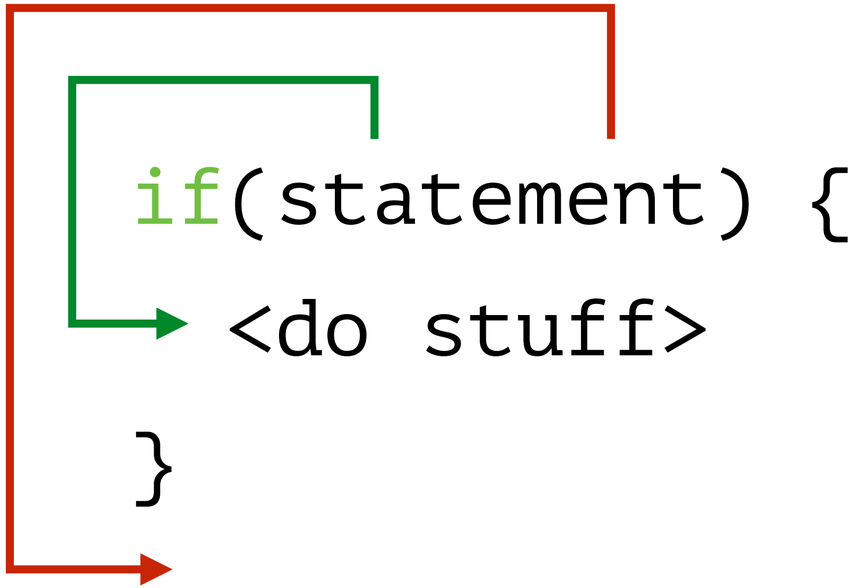
Basics

Delay

```
delay(milliseconds)
```

Basics

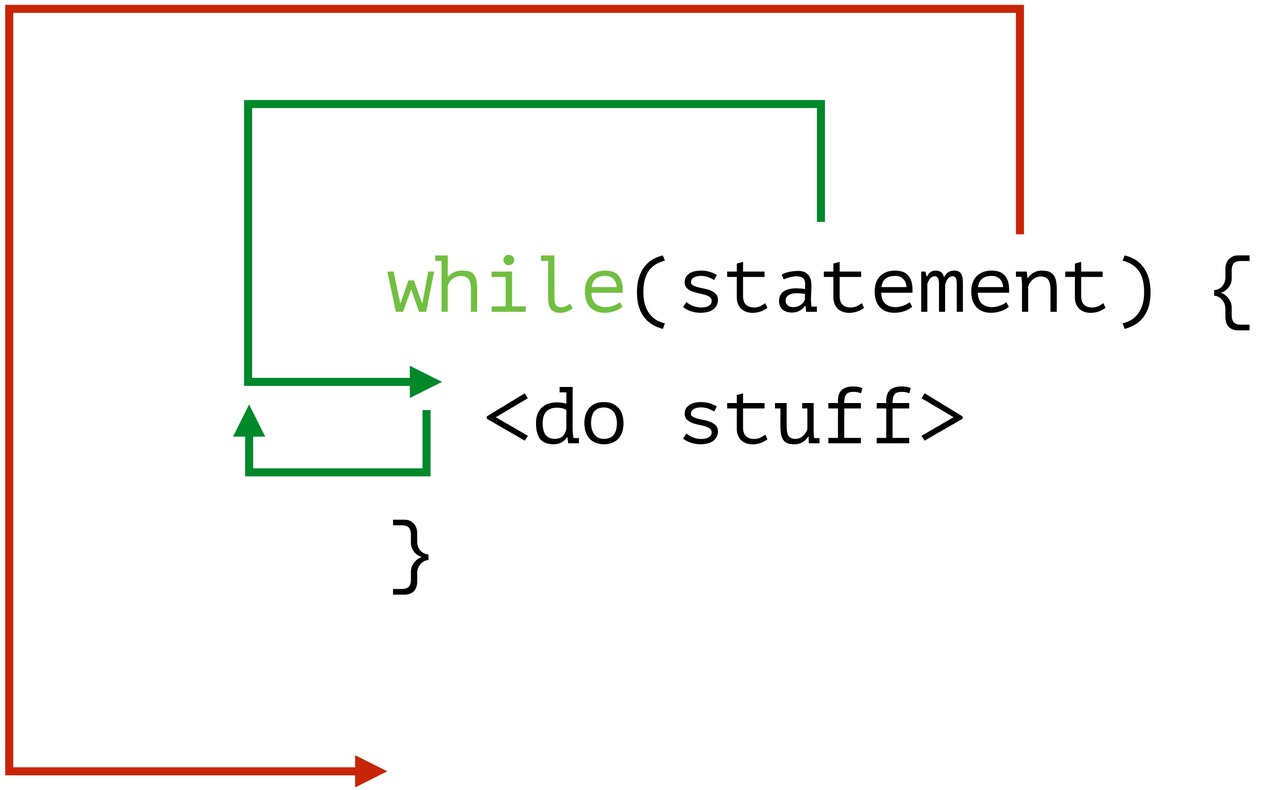
Conditional



Making Space

Basics

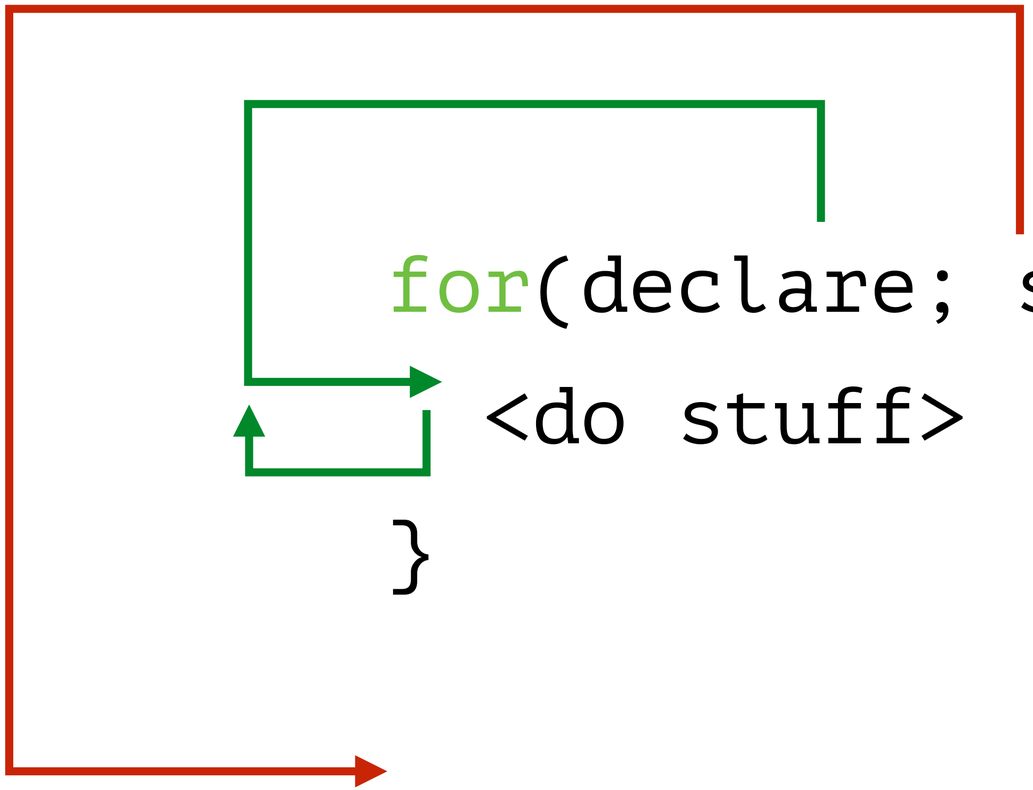
Conditional



Making Space

Basics

Conditional



```
for(declare; statement; adder) {
    <do stuff>
}
```

Making Space

Basics Conditional

```
for(int i = 0; i < 10; i++) {
  <do stuff 10x>
}
```

Making Space

Let’s get started!