Functions()

Day 4

What is a Function?

A Function is module of code that accomplishes a specific task.

Examples:
- Draw rectangle
- Go to Paris
- Cook Spaghetti

Why do we use Functions?

- ➔ Reusability
- ➔ Organization
- ➔ Abstraction
- ➔ Makes the code concise

```
Task {

    Steps to complete the task

}
```

```
void eatFood() {
  1. Get ingredients
  2. Cook
  3. Take picture of what you've cooked
  4. Eat

}
```

Repeat the function eatFood: Morning
Noon
Evening

Functions in Processing

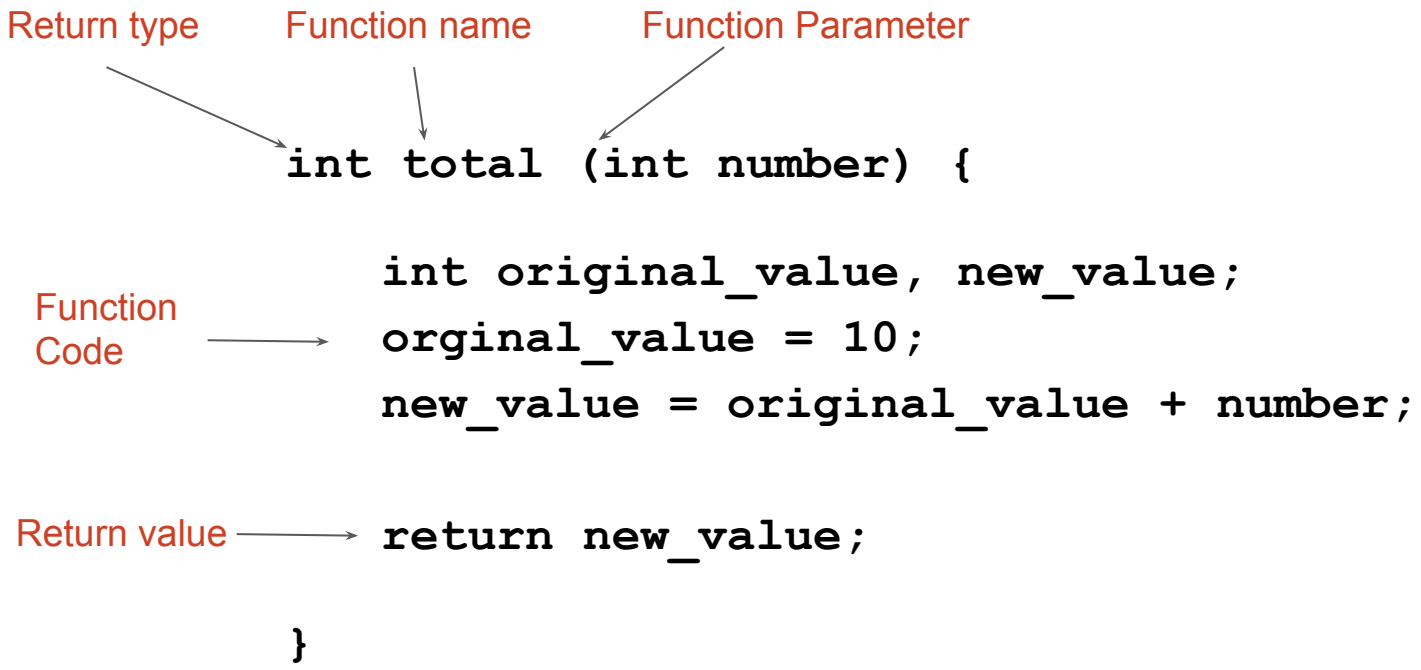
- void setup()
- void draw()
- void rect()
- void ellipse()

```
void setup() {

    //Steps

}
```

Structure of a Function



Return Type

“ReturnType” is the type of value returned by the function.

If no value is returned that fact is specified by using “void” as the return type.

The functions setup( ) , draw( ), and mousePressed( ) all have a “void” return type, i.e. they do not return a value.

Return Type: void

```
void hello(){

    println("Hello there!");

}
```

```
Function call:

hello();
```

Return Type

```
//Function
String losingMind( ){

     String a = “Keep Calm and Code”;
     return a;

}

//Function call
String s = losingMind();
println(s);
```

Function Parameters

Function parameters are values, and their types, passed into a function.

The functions setup( ) and draw( ) do not have any parameters, hence the parameter list is empty.

A function can take multiple parameters

Function Parameters

```
String losingMind( String b){

    String a = "Keep Calm";
    String c = a + b;
    return c;

}
```

```
//Function call

String b = "and Code";
String s = losingMind(b);
println(s);
```

Local vs Global Variables

```
String global = "Please stop!";

String stillLosingMind( ){

    String local = "Keep Calm
and Code";
    String s = global + local;
    return s;

}
```

```
void setup(){
//Function call
String st = stillLosingMind();

println(global);
println(st);
println(local);  //can't do this,
why?
}
```

Map Function

```
void setup() {
  size(200, 200);
  noStroke();
}

void draw() {
  background(204);
  float  x1 = map(mouseX, 0, width, 50, 150);
  ellipse(x1, 75, 50, 50);
  float x2 = map(mouseX, 0, width, 0, 200);
  ellipse(x2, 125, 50, 50);
}
```

Let’s code

Homework

Incorporate functions into Text Adventure game assignment