Hello World

```
void start()
{
    print("Hello World");
}
```

Comments

//This is a comment

/* This is a multiline comment */

*Shorcuts to comment & uncomment selection in Unity:
Select Everything: Ctrl + A
Comment: Ctrl + K + C
Uncomment: Ctrl + K + U

Variables

Structure

Data Type + Name = Value

Name

Value

Data Type

```
int myNumber = 45;
```

Data Types

int: 3, 4, 56, 76, 87...
float: 3.4, 4.67, 1.24...
string: "Jo", "Dog", "table"...
bool: True or False

Challenge:
Create a variable of each data type and print them to the console.

IF Statements

Structure →

```
if( this is true ){
    execute this code
}
```

Example →

```
if( 3 > 1 ){
    print("3 is greater than 1");
}
```

Else Statement

Example

```
if( this is true ){
    print("else is not executed");
}
else{
    print(" the condition was not true");
}
```

Boolean Operators

> greater than

>= greater or equal

< less than

<= less than or equal

== equal

!= not equal

Challenge:
Create an if statement using every boolean operator

Challenge:

Create 2 variables. int money = 100 and int expenses = 200
Create an if - else statement so if money is greater than expenses print (I am rich) and if money is less than or equal to expenses print (I need more money). Save and play the game. Look at the console.

Boolean Operators

AND Operator: &&

Both conditions need to be true

```
if(condition1 && condition2){
    execute this code
}
```

Boolean Operators

AND Operator: &&

Example ⟶

```
if( 3 > 1 && 5 > 4 ){
    print("this code will execute");
}else{
    print("This code will execute
    if one of the conditions is false");
}
```

Boolean Operators

OR Operator: ||

Only one condition needs to be true

```
if(condition1 || condition2){
    execute this code
}
```

Boolean Operators

OR Operator: ||

Example ⟶

```
if( 3 > 1 || 5 < 4 ){
    print("this code will execute if
    one of the conditions is true");
}else{
    print("This code will execute
    if none of the conditions is
    true");
}
```

Challenge

Which code will execute?

```
if( 3 < 1 || (5 > 4 || 3 != 3) ){
    code 1
}else{
    code 2
}
```

```
if( (2 > 1 || 3 > 6) && (4 == 4) ){
    code 1
}else{
    code 2
}
```

Arrays

Variable: int number = 45; ← One value

Array: int[ ] numbers = {3, 56, 6, 123, 7};

0 1 2 3 4

Multiple values

Print variable: ***print(number);***

Print Array Element:

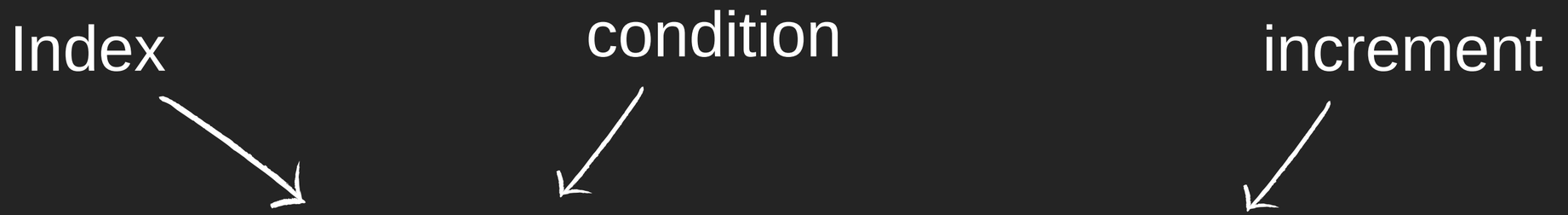
print(numbers[index]); ex: ***print(numbers[3]);***

Challenge

Create an array of type float with 8 elements and print each element to the console.

For Loop

int[ ] numbers = {2, 45, 65, 7, 8};




```
for(int i = 0; i < numbers.Length; i++)
{
    print(numbers[i]);
}
```

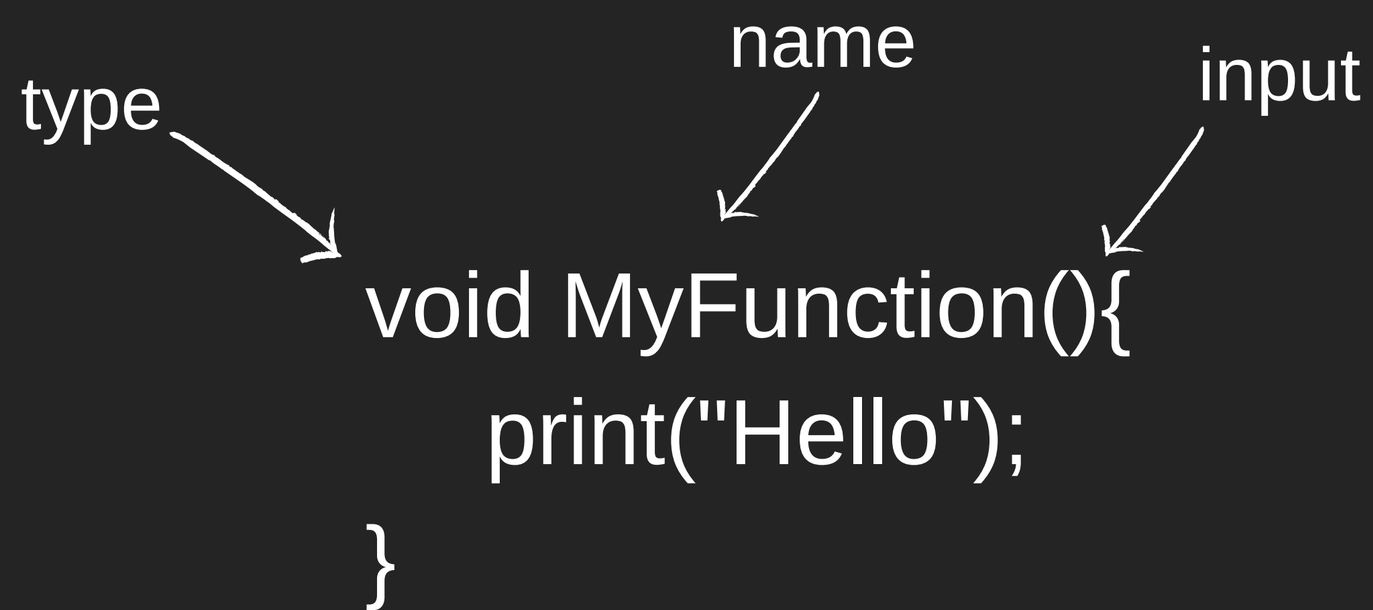
Challenge

Create a For Loop to print all the elements of the float array that you created in the previous challenge

Functions

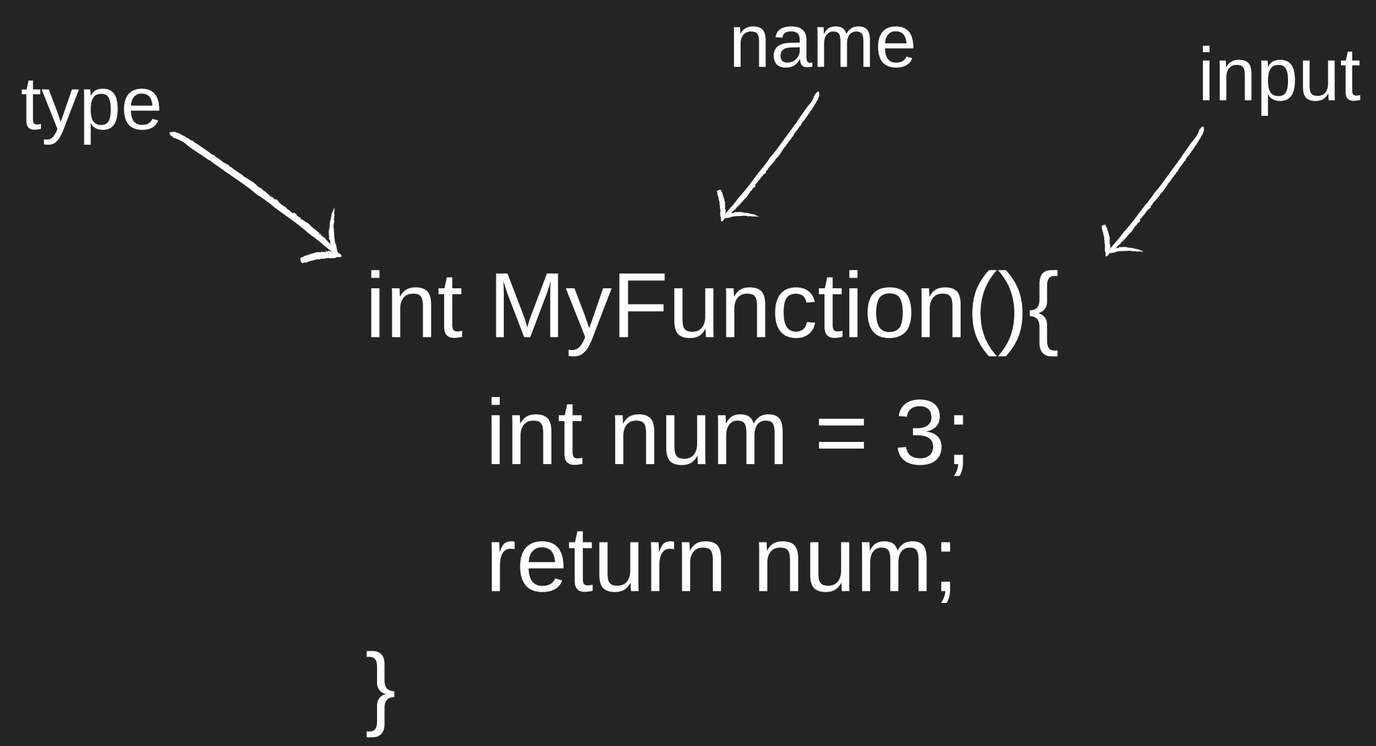
Functions

1st Type: no input and no output



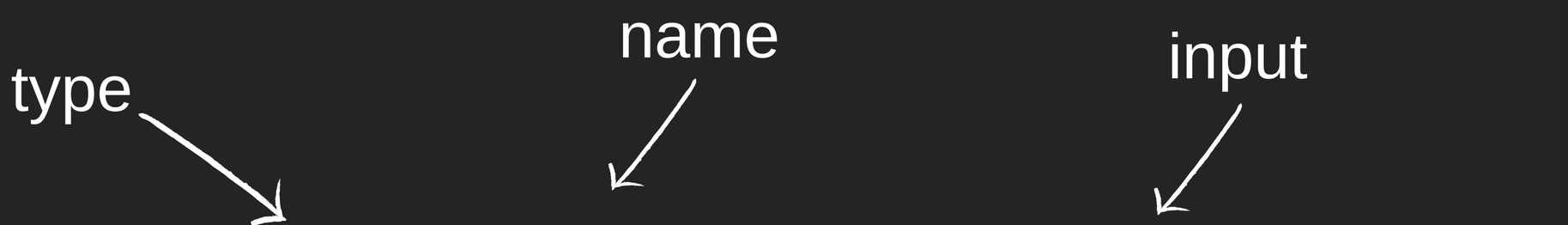
Functions

2nd Type: no input with output



Functions

3rd Type: with input and with output




```
int MyFunction(int num1, int num2){
    int result = num1 + num2;
    return result;
}
```

Functions

```
void Start(){
    int number1 = 34;
    int number2 = 26;

    MyFunction(number1,number2);
}
```

Calling a Function 

```
void MyFunction(int num1, int num2){
    int result = num1 + num2;
    print(result);
}
```

Challenge

Create 4 functions of type void that take 2 numbers and print the result to the console

1. The first function adds the numbers
2. The second function subtracts the numbers
3. The third function divides the numbers
4. The fourth function multiplies the numbers

- Call each function from the start function.

DataType

Classes

```
public class Human{
    Properties
    int power = 34;
    int health = 300;

    Methods
    public void Function1(){
    ....
    }
    private void Function2(){
    ....
    }
```

```
public class Main: MonoBehaviour{

    void Start(){
        Human joseph = new Human();
        joseph.Function1();
    }


}
```

Object of the Human class

Alien vs Human

1.Create an Alien class that has 2 properties
int health = 500;
int power = 60;

Create a method *public void TakeDamage()* that takes 50 from the health.

Create a method *public int GetHealth()* that returns the health of the alien.

Alien vs Human

2.Create a Human class that has 2 properties
int health = 200;
int power = 20;

Create a method *public void TakeDamage()* that takes 30 from the health.

Create a method *public int GetHealth()* that returns the health of the human.

Alien vs Human

Create an object of the Human and another object of the Alien class in the start function of the Main script and..

Call the GetHealth() method on both objects inside a print statement

Call the TakeDamage() method on both objects

Call the GetHealth() method on both objects inside a print statement again. Save and play the game. Take a look at the console.

Alien vs Human

****Bonus Challenge.****

Create a method *public int GetPower()* that returns the power in the Human and Alien class.

In the Alien class modify the TakeDamage method so it takes a Human as an input and the code inside the method must look like this:

*health = health - human.GetPower() * 2;*

Do the same for the Human class.

Alien vs Human

****Bonus Challenge.****

In the start method of the Main class call the Takedamage() method on both objects again but this time with the corresponding input. It should look like this:

newAlien.TakeDamage(newHuman);
newHuman.TakeDamage(newAlien);

Call the GetHealth method on both objects inside a print statement. Save and play the game. Look at the console.