# Functions

A function allows you to encapsulate several lines of code and call them as a group from other parts of your code.

There are many reasons we do this, but one of the most common is to keep to the **D.R.Y.** principle (don't, repeat yourself)

Notice that functions use a similar naming convention to variable, except they use **Upper CamelCase**.

* The first letter of each word is capitalised
* No numbers as the first character
* No spaces

## New Scripts

A new script will start with two functions

A **Start** Function

void Start()  
{  
 Debug.Log("This is run once when the script is started for the first time");  
}

An **Update** Function

void Update ()  
{  
 Debug.Log("This is run every frame");  
}

You can also write your own function so you don’t need to repeat code

void Start()  
{

//This will run once because it’s in the Start function  
 ResetPosition();  
}

void Update ()  
{  
 //This is run every frame

//If the P key is pressed the ResetPosition function will run again

if(Input.GetKeyDown(KeyCode.P))

{

ResetPosition();

}  
}

private void ResetPosition()

{

Transform.position = new Vector3(0,0,0);

//The object is reset to 0,0,0

}

### Passing Variables

You can also pass a variable to a function.

In the below example the ResetPosition function is being called from the Start function and it is passing the number 5.

In the ResetPosition is expecting the number and putting it in a variable called heightToMoveTo. It is then using that variable in its code to move the object.

void Start()  
{

//This will run once because it’s in the Start function  
 ResetPosition(5);  
}

void Update ()  
{  
 //This is run every frame

//If the P key is pressed the ResetPosition function will run again

if(Input.GetKeyDown(KeyCode.P))

{

ResetPosition(10);

}  
}

private void ResetPosition(float heightToMoveTo)

{

Transform.position = new Vector3(0,heightToMoveTo,0);

//The object is reset to 0,X,0

}

## Why is this useful?

How about a function that gives a player health.

If the player eats an apple it calls that function and passes it 7 to give the player 7 health.

If the player eats a tomato it calls that function and passes it 12 to give the player 12 health

If the player eats a deathcap it calls that function and passes -50 to take 50 health from the player.

You have one block of code that can be used over and over again.

## Further information

<https://unity3d.com/learn/tutorials/modules/beginner/scripting/variables-and-functions?playlist=17117>