Game Scripts – Stark 21MIS1146

1. Script as behaviour component

```
using UnityEngine;
using System.Collections;

public class ExampleBehaviourScript : MonoBehaviour
{
    void Update()
    {
        if (Input.GetKeyDown(KeyCode.R))
        {
            GetComponent<Renderer> ().material.color = Color.red;
        }
        if (Input.GetKeyDown(KeyCode.G))
        {
            GetComponent<Renderer>().material.color =
Color.green;
        }
        if (Input.GetKeyDown(KeyCode.B))
        {
            GetComponent<Renderer>().material.color = Color.blue;
        }
    }
}
```

2. Variables and Functions

```
using UnityEngine;
using System.Collections;

public class VariablesAndFunctions : MonoBehaviour
{
    int myInt = 5;


    void Start ()
    {
        myInt = MultiplyByTwo(myInt);
        Debug.Log (myInt);
    }


    int MultiplyByTwo (int number)
    {
        int result;
        result = number * 2;
        return result;
    }
  }
```

3. Conventions and Syntax

```
using UnityEngine;
using System.Collections;

public class BasicSyntax : MonoBehaviour
{
    void Start ()
    {
        //this line is there to tell me the x position of my object

        /*Hi there!
         * this is two lines!
         * */
        Debug.Log(transform.position.x);

        if(transform.position.y <= 5f)
        {
            Debug.Log ("I'm about to hit the ground!");
        }
    }
}
```

4. If else

```
using UnityEngine;
using System.Collections;

public class IfStatements : MonoBehaviour
{
    float coffeeTemperature = 85.0f;
    float hotLimitTemperature = 70.0f;
    float coldLimitTemperature = 40.0f;


    void Update ()
    {
        if(Input.GetKeyDown(KeyCode.Space))
            TemperatureTest();

        coffeeTemperature -= Time.deltaTime * 5f;
    }


    void TemperatureTest ()
    {
        // If the coffee's temperature is greater than the hottest
drinking temperature...
        if(coffeeTemperature > hotLimitTemperature)
        {
            // ... do this.
            print("Coffee is too hot.");
        }
        // If it isn't, but the coffee temperature is less than the
coldest drinking temperature...
        else if(coffeeTemperature < coldLimitTemperature)
        {
            // ... do this.
            print("Coffee is too cold.");
        }
        // If it is neither of those then...
        else
        {
            // ... do this.
            print("Coffee is just right.");
        }
    }
}
```

5. Loops

ForLoop

```
using UnityEngine;
using System.Collections;
public class ForLoop : MonoBehaviour
{
    int numEnemies = 3;
    void Start ()
    {
        for(int i = 0; i < numEnemies; i++)
        {
            Debug.Log("Creating enemy number: " + i);
        }
    }
}
```

WhileLoop

```
using UnityEngine;
using System.Collections;
public class WhileLoop : MonoBehaviour
{
    int cupsInTheSink = 4;
    void Start ()
    {
        while(cupsInTheSink > 0)
        {
            Debug.Log ("I've washed a cup!");
            cupsInTheSink--;
        }
    }
}
```

DoWhileLoop

```
using UnityEngine;
using System.Collections;
public class DoWhileLoop : MonoBehaviour
{
    void Start()
    {
        bool shouldContinue = false;
        do
        {
            print ("Hello World");
        }while(shouldContinue == true);
    }
}
```

ForeachLoop

```
using UnityEngine;
using System.Collections;
public class ForeachLoop : MonoBehaviour
{
    void Start ()
    {
        string[] strings = new string[3];
        strings[0] = "First string";
        strings[1] = "Second string";
        strings[2] = "Third string";
        foreach(string item in strings)
        {
            print (item);
        }
    }
}
```

6. Scope and Access Modifiers

```
using UnityEngine;
using System.Collections;
public class ScopeAndAccessModifiers : MonoBehaviour
{
    public int alpha = 5;
    private int beta = 0;
    private int gamma = 5;
    private AnotherClass myOtherClass;
    void Start ()
    {
        alpha = 29;
        myOtherClass = new AnotherClass();
        myOtherClass.FruitMachine(alpha, myOtherClass.apples);
    }
```

```
    void Example (int pens, int crayons)
    {
        int answer;
        answer = pens * crayons * alpha;
        Debug.Log(answer);
    }

    void Update ()
    {
        Debug.Log("Alpha is set to: " + alpha);
    }
}
```

AnotherClass

```
using UnityEngine;
using System.Collections;
public class AnotherClass
{
    public int apples;
    public int bananas;
    private int stapler;
    private int sellotape;
    public void FruitMachine (int a, int b)
    {
        int answer;
        answer = a + b;
        Debug.Log("Fruit total: " + answer);
    }
```

```
    private void OfficeSort (int a, int b)
    {
        int answer;
        answer = a + b;
        Debug.Log("Office Supplies total: " + answer);
    }
}
```

7. Awake and Start

```
using UnityEngine;
using System.Collections;
public class AwakeAndStart : MonoBehaviour
{
    void Awake ()
    {
        Debug.Log("Awake called.");
    }
    void Start ()
    {
        Debug.Log("Start called.");
    }
}
```

8. Update and Fixed Update

```
using UnityEngine;
using System.Collections;
public class UpdateAndFixedUpdate : MonoBehaviour
{
    void FixedUpdate ()
    {
        Debug.Log("FixedUpdate time :" + Time.deltaTime);
    }
    void Update ()
    {
        Debug.Log("Update time :" + Time.deltaTime);
    }
}
```

9. Enabling and Disabling Components

```
using UnityEngine;
using System.Collections;
public class EnableComponents : MonoBehaviour
{
    private Light myLight;
    void Start ()
    {
        myLight = GetComponent<Light>();
    }
    void Update ()
    {
        if(Input.GetKeyUp(KeyCode.Space))
        {
            myLight.enabled = !myLight.enabled;
        }
    }
}
```

10. Activate GameObjects

ActiveObjects

```
using UnityEngine;
using System.Collections;
public class ActiveObjects : MonoBehaviour
{
    void Start ()
    {
        gameObject.SetActive(false);
    }
}
```

CheckState

```
using UnityEngine;
using System.Collections;
public class CheckState : MonoBehaviour
{
    public GameObject myObject;
    void Start ()
    {
        Debug.Log("Active Self: " + myObject.activeSelf);
        Debug.Log("Active in Hierarchy" +
myObject.activeInHierarchy);
    }
}
```

11. Translate and Rotate

```
using UnityEngine;
using System.Collections;
public class TransformFunctions : MonoBehaviour
{
    public float moveSpeed = 10f;
    public float turnSpeed = 50f;
    void Update ()
    {
        if(Input.GetKey(KeyCode.UpArrow))
            transform.Translate(Vector3.forward * moveSpeed *
Time.deltaTime);

        if(Input.GetKey(KeyCode.DownArrow))
            transform.Translate(-Vector3.forward * moveSpeed *
Time.deltaTime);

        if(Input.GetKey(KeyCode.LeftArrow))
            transform.Rotate(Vector3.up, -turnSpeed *
Time.deltaTime);

        if(Input.GetKey(KeyCode.RightArrow))
            transform.Rotate(Vector3.up, turnSpeed *
Time.deltaTime);
    }
}
```

MISSING – VECTOR MATHS