

# Intro to Scripting part 1, 2, 3

Project organization

Unity Components

Particle component

Parenting

KeyCode

Prefabs

Instantiate

Transformations

Collisions

Tags

# Transform functions

```
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);
    }
}
```

# Transform functions

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

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

# Collisions

Create a new project

Add 3D cube as a platform

Add Cylinder / scale it 10.1.10

Check "Is trigger" on capsule collider component

Add audio source component & uncheck "Play on awake"

Add FPScontroller / Uncheck Use gravity in rigidbody component

Create new script "Collisions" and add it to the cylinder



Pivot Global



Collab



Account

Layers

Layout

Hierarchy

Scene

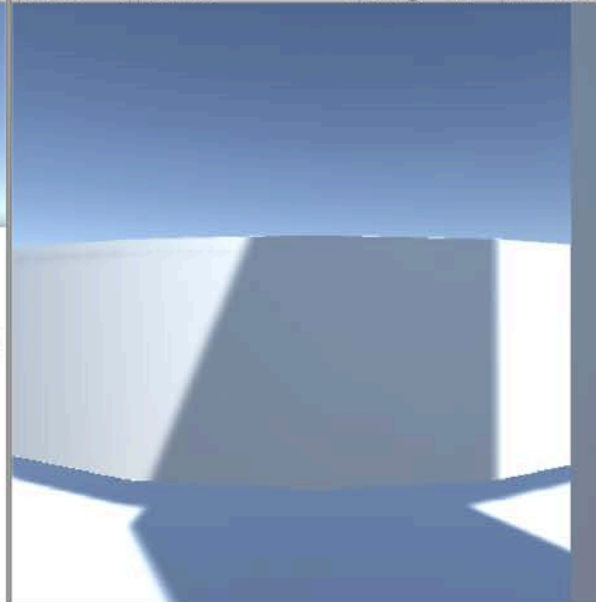
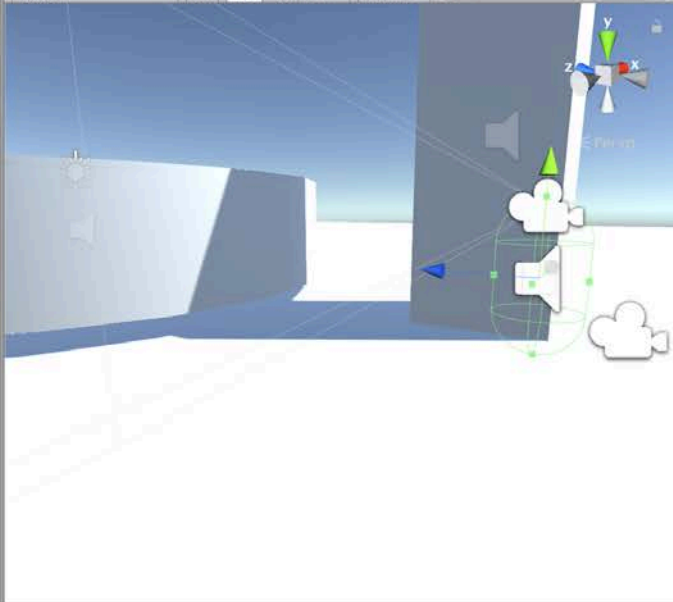
Game

Create All

Shaded 2D Gizmos QwAll

Display 1 Free Aspect Scale 2x Maximize On Play

- scripting4collisions\*
- Main Camera
- Directional Light
- Cube
- Cylinder
- FPSController
- Cube (1)



Inspector Services

Character Controller

- Slope Limit 45
- Step Offset 0.3
- Skin Width 0.08
- Min Move Distance 0
- Center X 0 Y 0 Z 0
- Radius 0.5
- Height 1.8

First Person Controller (Scr)

- Script FirstPersonCont
- Is Walking
- Walk Speed 5
- Run Speed 10
- Runstep Lengthen 0.7
- Jump Speed 10
- Stick To Ground Force 10
- Gravity Multiplier 2
- Mouse Look
  - Use Fov Kick
  - Fov Kick
  - Use Head Bob
- Head Bob
- Jump Bob
  - Step Interval 5
  - Footstep Sounds
  - Jump Sound Jump
  - Land Sound Land

Rigidbody

- Mass 1
- Drag 0
- Angular Drag 0.05
- Use Gravity
- Is Kinematic
- Interpolate None
- Collision Detection Discrete
- Constraints

Console Project

Console Clear Collapse Clear on Play Error Pause Editor

Create All Prefabs

Assets

- Assets
- Standard Assets
- Characters
  - FirstPersonChar
    - Audio
    - Prefabs
    - Scripts
  - RollerBall
  - ThirdPersonCh

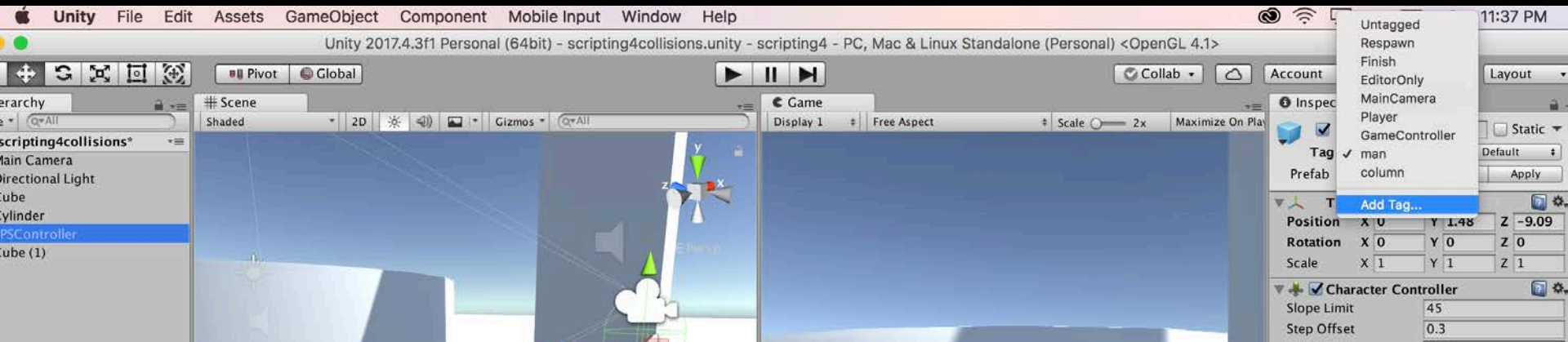
- Chimes
- collisions
- cubeScript
- Cymbal
- scripting4collisions
- Standard Assets

# Tags

A Tag is a reference word which you can assign to one or more GameObjects. A GameObject's functionality is defined by the Components attached to it.

For example, you might define "Player" Tags for player-controlled characters and an "Enemy" Tag for non-player-controlled characters.

Create new Tag



# Collisions

Assign new tag to FPS controller (“man”)

The screenshot displays the Unity 2017.4.3f1 Personal interface. The main window is split into three panels: Hierarchy, Scene, and Game. The Inspector panel on the right is focused on the FPSController component. The Tag field is set to "man".

**Inspector Panel:**

- FPSController** (Static)
- Tag: man (Layer: Default)
- Transform**
  - Position: X 0, Y 1.48, Z -9.09
  - Rotation: X 0, Y 0, Z 0
  - Scale: X 1, Y 1, Z 1
- Character Controller**
  - Slope Limit: 45
  - Step Offset: 0.3
  - Skin Width: 0.08
  - Min Move Distance: 0
  - Center: X 0, Y 0, Z 0
  - Radius: 0.5
  - Height: 1.8
- First Person Controller (Script)**
  - Is Walking:
  - Walk Speed: 5
  - Run Speed: 10
  - Runstep Lengthen: 0.7
  - Jump Speed: 10
  - Stick To Ground Force: 10

# Collisions

```
public class collisions : MonoBehaviour {  
    public AudioClip mySound;  
  
    void OnTriggerEnter (Collider other)  
    {  
        if(other.gameObject.tag == "man")  
        {  
            GetComponent<AudioSource> ().PlayOneShot (mySound);  
        }  
    }  
}
```



# Scripting exercise 1

Add another object – a cube

Make it move forward and backward using key codes

Add another sound to your scene

Play sound when cube moves forward and collides with the cylinder

## Scripting exercise 2

Create a room with 3 doors and FPS Controller character. As the character walks from door to door inside the room, and touches the doors (collision), each door should start to rotate (along the Y axis) and a new sound FX plays. As the user presses 3 different mouse buttons, the colors of 3 doors should change into different colors.

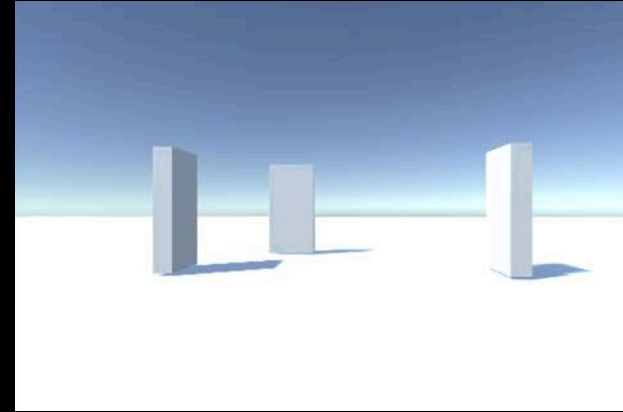
Add a “stop” action to stop all doors from rotation if the user presses Escape key.

Use a Key Code reference page here to find out the Key Codes:  
<https://docs.unity3d.com/ScriptReference/KeyCode.html>

# Scripting exercise 2

Incorporate 3 different scripts – one for each door

- Variables
- Functions
- Materials
- Collisions
- Key and mouse interaction inputs



Combine the various modules we covered to create an interactive scene. Use your problem solving skills to creatively combine different functions and find workable solutions.

Use a meaningful project organizational structure.  
(Folders/subfolders)