# Workshop 8 Lab 2

In this activity, we are going to learn how to configure the game object animation using state machine

**Procedure:**

New a Unity3D project, name it EnemyStateMachine.

Insert a plane, scale XYZ by 10.

Graphical user interface

Description automatically generated with medium confidence

Insert a Capsule (name it as Enemy), add in a Cube as child object.

Chart

Description automatically generated with medium confidence

Set the Position

A picture containing table

Description automatically generated

Add in Animator Component



Tag Enemy game object as “enemy”.

Background pattern

Description automatically generated with medium confidence

Insert a Cube, name it as Player, place the cube on the plane, Y set to 0.5 and Z to -5

A picture containing graphical user interface

Description automatically generated

Attached a RigidBody to the Player.

Change Drag and Angular Drag to 0.5.

Freeze Rotation Y and Z.

Graphical user interface

Description automatically generated

Create a C# script PlayerControler

Attached the script to Player game object.Graphical user interface, text, application

Description automatically generated

Test the scene.

Use up and down arrow key to move the player forward and backward.

Use left and right arrow key to turn the player left and right.

Create a folder Animations

E

Open the Animation Window (Window->Animation->Animation)

Click on Enemy game object in Hierarchy window and in the Animation Window, click on Create button.

Create an Animation “Enemy Idle” in the Animation folder.

Shape

Description automatically generated with medium confidence

An Enemy Animation Controller will be created as well.

Now we want to create the Enemy Idle animation.

(Refer to last workshop on how to record animations)

* Enemy Idle -> rotate the z axis (set to rotate -20 to 20 back and fore) of the game object

A picture containing text, sport, athletic game

Description automatically generatedA picture containing text

Description automatically generated

Next create Enemy Jump.

Graphical user interface, text, application

Description automatically generated

* Enemy Jump->Adjust the Position Y of the game object (set from 0 to 2 back and fore), make it move up and down

Finally create Enemy Spin.

* Enemy Spin-> Adjust the rotation Y of the game object (set from 0 to 360 back and fore), make it spin around itself.

Configure the Enemy Animation Controller

Create a Trigger and Bool parameters as follow:

Graphical user interface, application

Description automatically generated

Configure the state machine as follow:

A picture containing text, indoor

Description automatically generated

Note: we need to configure each transition individually as below:

Click on the transition and Inspector window.

From Enemy Idle to Enemy Jump transition.

* Uncheck “Has Exit Time”
* Conditions -> triggerJump

Table, timeline

Description automatically generated

From Enemy Jump to Enemy Idle transition.

* Ensure “Has Exit Time” is checked.
* The state will go back to Enemy Idle after the animation.

Table, timeline

Description automatically generated

From Enemy Idle to Enemy Spin transition.

* Uncheck “Has Exit Time”
* Conditions -> boolSpin is true

Table, timeline

Description automatically generated

From Enemy Spin to Enemy Jump transition.

* Uncheck “Has Exit Time”
* Conditions -> boolSpin is false

Table

Description automatically generated

Attached the Enemy Animator Controller to Enemy game object

Graphical user interface, text, application

Description automatically generated

New a C# script GameEngine

Create an empty GameObject and name it as GameEngine, attached the script to GameEngine.

Text

Description automatically generated with medium confidence

Add in OnCollisionEnter() method in PlayerControl.

Graphical user interface, text, application

Description automatically generated

Test out the scene.

The Enemy will be Idle by default, it will Jump when a spacebar is hit and then return to Idle.

When the Player hits the Enemy it will Spin.

When the Enemy is Spinning, hit escape to Jump and return to Idle.