Parkour Car Game with Checkpoints

# Here’s Our Car Movement Script So Far:

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| --- |
| using UnityEngine;  using System.Collections;  public class carMotion : MonoBehaviour {  // Use this for initialization  void Start () {    }    // Update is called once per frame  void Update () {  //\*\*\*\*Movement Controls\*\*\*\*  if(Input.GetKey(KeyCode.W)){  transform.position += transform.forward \* 5 \* Time.deltaTime;  }  if (Input.GetKey (KeyCode.S)) {  transform.position -= transform.forward \* 5 \* Time.deltaTime;  }  if (Input.GetKey (KeyCode.A)) {  transform.Rotate(0f, -80f \* Time.deltaTime, 0f);  }  if (Input.GetKey (KeyCode.D)) {  transform.Rotate(0f, 80f \* Time.deltaTime, 0f);  }  }  } |

## What is a Vector3?

* A Vector3 is only just a collection of numbers. In this case, Vector3 stores 3 different numbers. A Vector2 would store 2 numbers, and a Vector1 would store 1 number.
* In our code, we will use Vector3 to store positions in 3D space. Remember our X, Y, and Z coordinates?

## Lets Make a Variable

* A Variable is something in code that stores a number (or in this case 3 numbers). Let’s update our code with some new variables.
* “checkpoint” will keep track of new checkpoint positions that our car reaches.
* “spawnpoint” is where the cars starts in the world.
* The checkpoint variable will be changing and throughout the game, it will store different numbers. This is the power of variables. The allow us to do really cool things!
* **Note: Your numbers will probably be different than the ones provided here.**

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| using UnityEngine;  using System.Collections;  public class carMotion : MonoBehaviour {      **private Vector3 checkpoint = new Vector3(0,3,0);**  **private Vector3 spawnpoint = new Vector3(0,3,0);**  // Use this for initialization  void Start () {    }    // Update is called once per frame  void Update () {  //\*\*\*\*Movement Controls\*\*\*\*  if(Input.GetKey(KeyCode.W)){  transform.position += transform.forward \* 5 \* Time.deltaTime;  }  if (Input.GetKey (KeyCode.S)) {  transform.position -= transform.forward \* 5 \* Time.deltaTime;  }  if (Input.GetKey (KeyCode.A)) {  transform.Rotate(0f, -80f \* Time.deltaTime, 0f);  }  if (Input.GetKey (KeyCode.D)) {  transform.Rotate(0f, 80f \* Time.deltaTime, 0f);  }  }  } |

## Writing the Trigger Code

* Like we did in an earlier session, we are going to create a trigger. This time we will program in what happens when our character enters the trigger!
* Just like “void Update” or “void Start” we need to make a new void. This will be called “void OnTriggerEnter”. Unity scans each frame update for if our character enters a trigger.
* After naming the void, we need to feed it some information. Between the parentheses, we need to give it something to look for: a “Collider”. In this example we will name whatever the car collides with “trigger”.

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## How to Update Our Checkpoint

* Now we need to check if the trigger has a specific tag named “checkpoint” Let’s write an if-statement!
* *If the trigger’s tag is “checkpoint”* the checkpoint variable is now set to the trigger’s position.

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## “Go Back to Recent Checkpoint” Button

* Just like how we made the car movements with if-statements, we will make another one this time looking for the “Keycode.C” (C stands for “Checkpoint”).
* When the button gets pressed, update the car’s position to the current position stored in the “checkpoint” variable.

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## How Can We Make Zones That Reset the Car to Spawn?

* We will need to make another if-statement within the :”OnTriggerEnter”. Also you will need to make a separate tag for objects that will reset the car to spawn instead of update the checkpoint.
* Don;t forget to make this new zone a trigger!