**EZPZ: Component Reference Guide**

**Key Terms**

**Component:** These are individual scripts that you can place on a GameObject to give it properties or abilities, like movement or health. Components are divided into 5 different types:

* **Actions**: These enable a GameObject to do something (for instance, move, jump, or shoot).
* **Things**: These detail what a GameObject is (player, enemy or something else).
* **Logic**: These are typically used for creating or changing data
* **Event**: These are certain conditions that can be triggered to activate a specific component (such as pressing the Spacebar to destroy a GameObject).
* **Other**: These are components with more specific capabilities that don’t fit neatly into other categories.

**Variable:** A value on a Component that changes the way it behaves.

**Function:** Something that a Component can do, such as causing an action or changing a value. Some functions can be triggered by Event Components.

**GameObject:** An object in Unity. We can add components to these to give them different properties and abilities.

**BoxCollider2D:** This makes a GameObject solid, so that it will collide with others and register collisions. We can set its “Trigger” variable to true if we want to register collisions but still allow objects to move through each other.

**RigidBody2D:** This allows a GameObject to be affected by physics, and is necessary if we want the GameObject to move. We can change its “Gravity Scale” to 0, if we don’t want it to fall.

**Scene:** This is usually a Level, but can also be a title screen or other menu.

**Properties that are common to many components:**

|  |  |  |
| --- | --- | --- |
| Variables | | |
| Name | Type | Description |
| Input Type | Interaction Type | How this component should activate (on the press of a key, only once, constant activation, or on an event) |
| Key | Key Code | If Input Type is set to Button, this is the key that will activate it |
| Active | bool | Whether or not the component can be activated |
| Delay | float | From activation, wait this many seconds before happening |
| Time Between | float | How much time needs to pass before the component can be activated again |
| Functions | | |
| Name | Type | Description |
| Set Active | void | Set the “Active” variable to true or false |

**Actions**

Bounce: Reverse an object’s velocity on the X and/or Y axis.

Functions:

|  |  |  |
| --- | --- | --- |
| Variables | | |
| Name | Type | Description |
| X | bool | Bounce on the X axis? |
| Y | bool | Bounce on the Y axis? |

|  |  |  |
| --- | --- | --- |
| Functions | | |
| Name | Type | Description |
| Do Bounce | void | Reverse the GameObject’s velocity on the X and/or Y axis. |

Create At Location: Create an instance (copy) of a GameObject at a specified location.

Functions:

|  |  |  |
| --- | --- | --- |
| Variables | | |
| Name | Type | Description |
| Target | GameObject | Create at this object’s location (if applicable) |
| Object To Create | GameObject | Create a copy of this object |
| Location | Vector3 | Location to create the copy at. If Target exists, create at Target’s position with this value as an offset. |

|  |  |  |
| --- | --- | --- |
| Functions | | |
| Name | Type | Description |
| Create | void | Create an instance of Object To Create at Location |

Follow: Follow another GameObject’s position

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| --- | --- | --- |
| Variables | | |
| Name | Type | Description |
| Target | GameObject | Follow this object |
| Speed | float | Follow at this speed |

Jump

|  |  |  |
| --- | --- | --- |
| Variables | | |
| Name | Type | Description |
| Speed | float | Jump at this speed |
| TimeBetween | float | How much time (in seconds) must pass between jumps |

|  |  |  |
| --- | --- | --- |
| Functions | | |
| Name | Type | Description |
| DoJump | void | Jump at a rate determined by “Speed” |

Link

|  |  |  |
| --- | --- | --- |
| Variables | | |
| Name | Type | Description |
| Unlink | bool | Use this if you instead want to unlink this object from target |
| Target | GameObject | What object this one should be linked to |

|  |  |  |
| --- | --- | --- |
| Functions | | |
| Name | Type | Description |
| ActivateLink | void | Link or unlink this item to/from “Target” |

Move Horizontal

|  |  |  |
| --- | --- | --- |
| Variables | | |
| Name | Type | Description |
| Right Key | Key | The key to be used for moving right. |
| Left Key | Key | The key to be used for moving left. |
| Speed | float | The speed at which the object should move. |
| Flip X Based On Speed | bool | Use this if the object’s sprite should flip back and forth based on movement speed |
| Rotate Based On Speed | bool | Use this if the object’s sprite should turn while moving |

Move To

|  |  |  |
| --- | --- | --- |
| Variables | | |
| Name | Type | Description |
| Target | GameObject | Move this object to “New Location” |
| New Position | Vector3 | Move “Target” to this location |

|  |  |  |
| --- | --- | --- |
| Functions | | |
| Name | Type | Description |
| Move | void | Instantly move “Target” to “New Location” |

Move Vertical

|  |  |  |
| --- | --- | --- |
| Variables | | |
| Name | Type | Description |
| Up Key | Key | The key to be used for moving up. |
| Down Key | Key | The key to be used for moving down. |
| Speed | float | The speed at which the object should move. |
| Flip Y Based On Speed | bool | Use this if the object’s sprite should flip back and forth based on movement speed |
| Rotate Based On Speed | bool | Use this if the object’s sprite should turn while moving |

Shoot In Direction

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| Bullet | GameObject | The object that will be created when shooting. |
| Direction | Vector3 | The angle and speed that “Bullet” will be fired at. |
| Offset | Vector3 | This moves the starting position of “Bullet”. |

|  |  |  |
| --- | --- | --- |
| Functions | | |
| Name | Type | Description |
| Do Shoot | void | Create an instance of “Bullet” at the object’s position + “Offset”. The bullet will move in the direction and speed specified by “Direction” |

**Events**

Collision Event

Compare Event

Dice Roll Event

Input Event

In Range Event

Mouse Click Event

Timer Event

**Logic**

Change Scene

Data

Destroy

Health

Set Text

**Other**

Key

|  |  |  |
| --- | --- | --- |
| Variables | | |
| Name | Type | Description |
| Code | string | Use this to determine a matching key/lock pair |

Lock

|  |  |  |
| --- | --- | --- |
| Variables | | |
| Name | Type | Description |
| Code | string | Use this to determine a matching key/lock pair |

|  |  |  |
| --- | --- | --- |
| Functions | | |
| Name | Type | Description |
| OnTriggerEnter2D | void | When a Lock and Key collide, the Lock will be destroyed if “Code” matches. |

**Things**

Collectable

Applies to objects that can be picked up by the player.

|  |  |  |
| --- | --- | --- |
| Variables | | |
| Name | Type | Description |
| Variable Name | string | Name of the variable to apply “Amount” to. If the variable doesn’t exist, it will be created and set to “Amount”. |
| Amount | float | The value that “Variable Name” will be added, subtracted, or set to. |

Enemy

Apply this to characters or objects that the Player will fight or avoid, and/or objects that should follow a pre-determined path.

|  |  |  |
| --- | --- | --- |
| Variables | | |
| Name | Type | Description |
| Follow Path | bool | Whether or not this object should follow “Path” |
| Path | List<Node> | List of Nodes that the object will follow if “Follow Path” is applied |
| Speed | float | Speed at which the object should follow the path. |

Hazard

Applies to objects that can damage a Player or Enemy.

|  |  |  |
| --- | --- | --- |
| Variables | | |
| Name | Type | Description |
| Target | Target (Player or Enemy) | Determine whether this should damage a Player or an Enemy. |
| Amount | float | How much damage should be applied to Target on contact. |

Node

An individual point on a path that an Enemy will follow.

Player

Apply this to characters or objects that the Player will control.