



Andhra Pradesh State Skill Development Corporation



Game Development Using Buildbox Character Designing

Introduction to Character Designing

3.1 Role of a Character in Gaming:

Character design is, of course, very important. However, a character doesn't have to be painstakingly created to be appealing—even simple characters like those in the Super Mario Brothers series are memorable and attractive. The most important key is making sure this asset fits in with the environment and the props, objects and other things around the game world. Over the past years, the polygon count dedicated to characters has increased dramatically. Think about Lara Croft from Tomb Raider in 1996 compared with the more recent iterations—the difference in her appearance is mainly due to games supporting a higher polygon count.

3.2 Character Designing:

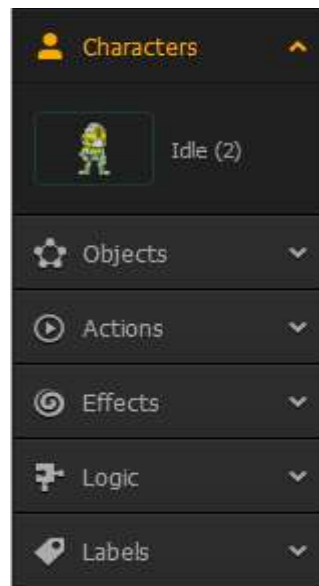


3.1 World Screen

Buildbox supports multiple characters the player interacts with. To set the initial position of the character, view the start scene, and drag the player to your preferred position - which can be out of view if you want to have the player drop into view or something similar

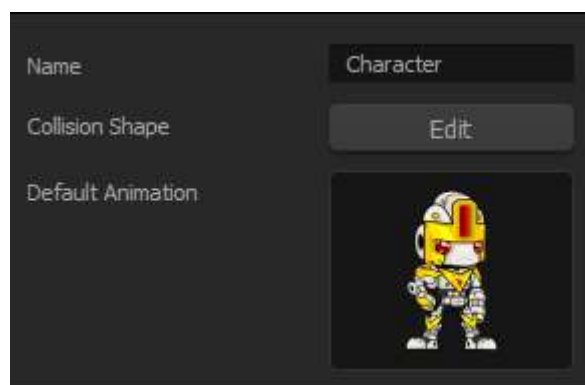
Properties:

All other settings are done by opening Character up on the left hand toolbar, and clicking on the character found there. These options you can set are found on the right, once the character is selected:



3.2 Assets panel

Name: The first option available is the name. This name is not shown throughout the game and won't be visible to the users. This is just a name for your purposes. It is best to choose a name easy to remember and easy to identify your character by.



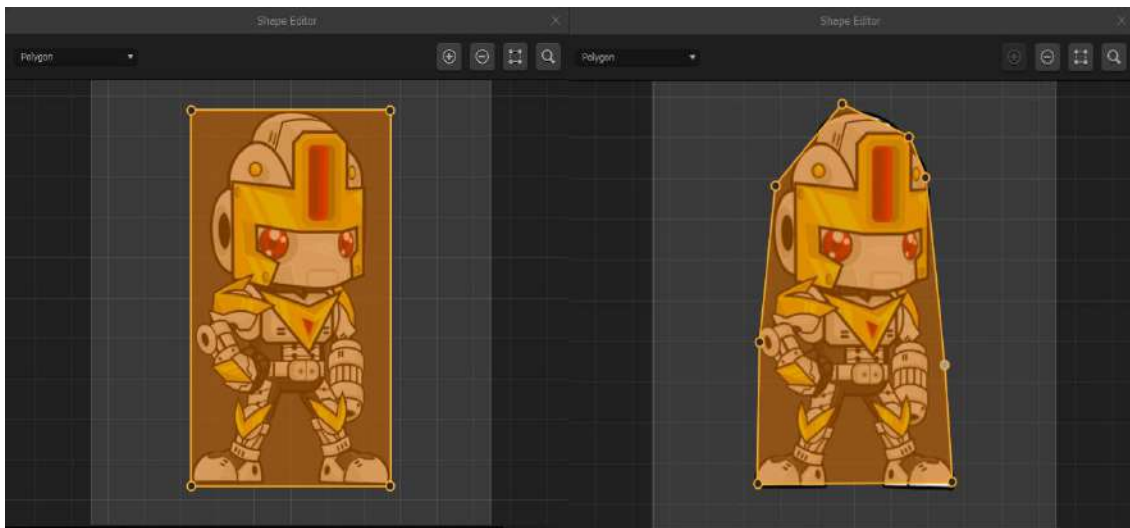
3.3 Options Panel

3.3 Collision Shape of a Character:

The collision shape could be said to be the most important part of your game, as without them, you couldn't function. They are used every time your game kills an object, bounces an object, or even just stops an object. All these things happen when two game element's collision boxes collide, or when an object's collision box collides with the game boundary.

When you click edit, it will take you to the Shape Editor page where you can edit the hit zone of your character.

In the Shape editor page, you will see the tools available to edit the collision shape of your character. In the illustration shown below, it's easy to adjust the collision shape as we have a character. All we needed to do was to drag the outer point to match our characters size.



3.4 Collision Shape Editor

3.4 Animations:

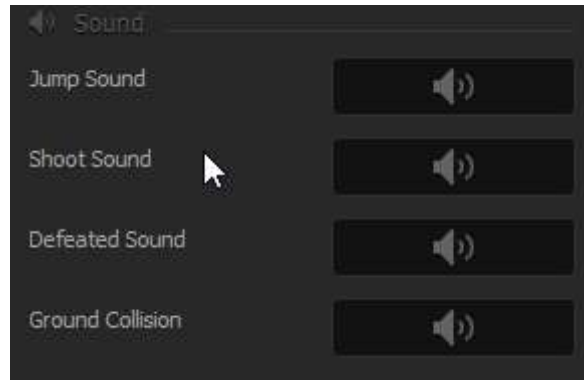
Default Animation: This is where you can drag your image or animation for your character while it is idle.

Main Animations:

- **Shooting Animation:** The animation to run when Character is shooting. PNG Drop Box, however clicking on the pencil opens the Animation Editor.
- **Bullet Animation:** The animation to show on the bullet object that is spawned when the Character fires. PNG Drop Box, however clicking on the pencil opens the Animation Editor.
- **Jump Animation:** The animation to run when Character is jumping. PNG Drop Box, however clicking on the pencil opens the Animation Editor.
- **Move Animation:** The animation to run when Character is moving. Why is this here? Well it is useful if you have a game with a bipedal character that can stand still, or run. In which case the default animation will be the character standing still, and this animation will show the character running. PNG Drop Box, however clicking on the pencil opens the Animation Editor.
- **Defeated Animation:** The animation to run when the Character will die. PNG Drop Box, however clicking on the pencil opens the Animation Editor.

Sound:

And below that, we will see the Sound option. There are Jump sound, Shoot sound, Defeated Sound, and Ground Collision, where you can drag and drop an MP3 for the specific move you want for your character.



3.5 Sound Options

GamePlay Effects:

Now depending on the game type of game that you are creating, you may have a couple of gameplay effects that you want to apply to your character.



3.6 Gameplay Effects Options

- **Cast Shadow:** If a player will cast a shadow when struck from a light from a light effect.
- **Auto-Tilt:** The same as true to the Auto Tilt feature, if that is a feature in your game and you want your character to respond to that, and then you can select the Auto Tilt feature.

3.5 Game Over Effects: Effects to play when a character dies.



3.7 Game Over Effect Options

- **Game Over Delay:** Seconds to delay starting game-over effects.
- **Camera Shake:** Seconds to shake the game display, or 0 to disable.
- **Camera Flash:** Seconds to show camera flash effect, or 0 to disable.
- **Fall Attribute:** A non-zero value will cause the Character to fall off the bottom of the screen (assuming gravity is in a down direction). The number will determine how far up (against gravity) the Character will bounce up before falling.

Monetization:

- **Free:** Available by default. You should obviously have at least one Character set to this so the beginning player can play the game.
- **In Game Currency:** Can be bought with ‘coins’ earned in the game.
- **In App Purchase:** Can be purchased with IAPs from an app store.
- **Rewarded Videos:** Can be purchased with a rewarded video view. Gives another list if selected – of rewarded video suppliers:

Add Network: Shown if Rewarded Videos selected, above.

HeyZap: This is an ad network that allows you to select the best ads in terms of earnings across various networks. Useful for rewarded videos given that inventory across ad networks can be low.

3.6 Character Gameplay Settings:



Character Gameplay Settings		
Max Speed	50.001	0
Bounce Force	0	0
Jump Force	0	75
Jump Timeout	0.01	
Jump Counter	1	
Ground Threshold	0.05	
Jump From Ground	<input checked="" type="checkbox"/>	
Left Lean Force	0	
Right Lean Force	0	
Platform Friction	100	
Rotation Drag	0	
Air Drag	0	0
Direct Movement	<input type="checkbox"/>	
Forced Movement	<input checked="" type="checkbox"/>	
Fixed Rotation	<input checked="" type="checkbox"/>	
Image Direction	<input checked="" type="checkbox"/>	

3.8 Character gameplay Options Panel

- **Max Speed (x and y):** Max speed the character can move in.

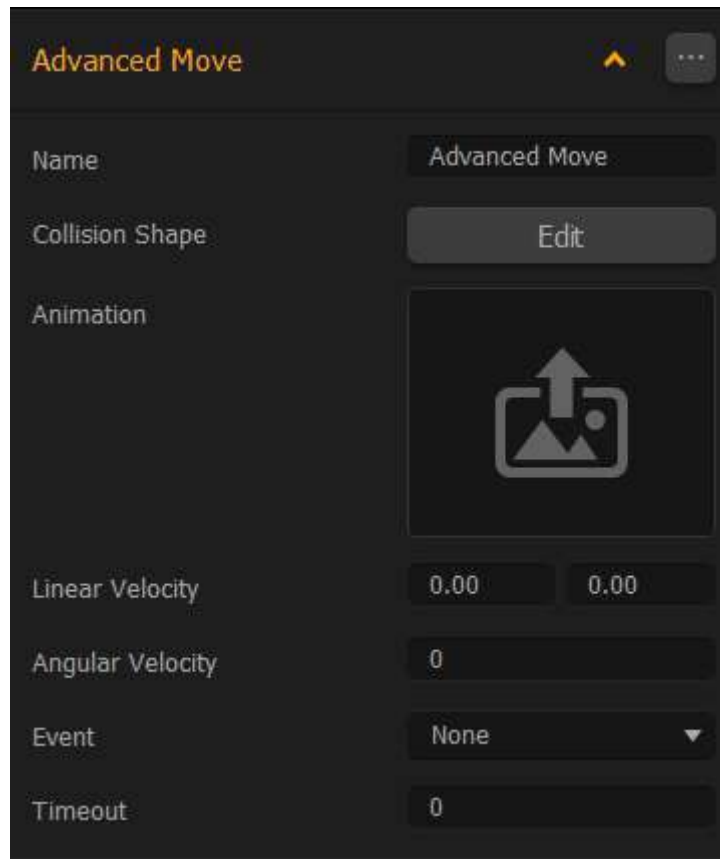


- **Bounce Force (x and y):** Force the Character will exert on another object. Note: values here will constrain the movement of the player in an unrealistic way - eg with a vertical bounce force, hitting an angled surface will bounce you straight up and not sides - usually this is what you require. That is why there is an X and Y value to specify. If you require more standard physics for your bounce, leave this at 0,0 and put a value for World Bounce force. Also this will not affect objects attached to the character.
- **Jump Force (x and y):** Force on character when you press the jump button.
- **Jump Timeout:** It is used for variable jump. A value of 0.01 gives consistent jump, higher values give option to have a variable height jump depending on how long the button is held down. Note: this was incorrect in the previous version of the User Manual – functionality in BuildBox has not changed.
- **Jump Counter:** How many jumps can be made before touching the ground. Note: this was incorrect in the previous version of the User Manual – functionality in BuildBox has not changed.
- **Ground Threshold:** Detection of ground is used for allowing Jump. If you have platforms with angles the character may sit across, it may be too far above ground to jump – even though parts of the character are still on the ground. You can fix this by increasing this value.
- **Jump from Ground:** Can the player jump off the game-field boundary.
- **Left Lean Force:** Force that will lean/rotate character left when lean-left button pressed.
- **Right Lean Force:** Force that will lean/rotate character right when lean-right button pressed.
- **Platform Friction:** Friction force that will stop character sliding against platforms. Note: this will not affect objects attached to the character.
- **Rotation Drag:** Force that will slow down any rotation of the character.
- **Air Drag (x and y):** Force that will slow down the character's movement over time.
- **Direct Movement:** When checked, characters can be moved around the screen by directional controls.
- **Forced Movement:** If ticked, then a movement of the background will force the player character to move – keeping it in the same position on screen. If not ticked, then the character – unless being moved by the person playing the game – will stay fixed on the scenery, causing it to move toward the edge of the screen.
- **Fixed Rotation:** Players will not rotate no matter what happens.
- **Image Direction:** Point character in the direction of movement.

3.7 Character Custom Components:

At the bottom of the character properties section, is a button – [+ Add Component]. There are several options.

Advanced Move:



3.9 Custom Components Panel

- **Name:** For your reference only.
- **Collision Shape:** The collision shape that will be used to trigger this.
- **Animation:** Animation to play when this is triggered.
- **Linear Velocity(x,y):** Velocity vector to add to the Character.
- **Angular Velocity:** Angular velocity to add to the Character.
- **Event:** Triggering event for this move None: not triggered.
 On Start: As soon as Character appears.
 Collision: When collision shape is hit by another object.
- **Timeout:** How many seconds after triggering does this move stop.



Damage:

Damage	1
Damage delay	0

3.10 Damage Settings

- **Damage:** Amount of damage inflicted on another object.
- **Damage Delay:** How long till the above damage is inflicted.

Health:

Health	1
Lives	1

3.11 Health Settings

- **Health:** The amount of health this character has to lose before dying.
- **Lives:** How many times this character has to lose before dying completely.