

Ikaruga Prototyping

A GUIDE TO THE CORE BUILDING BLOCKS

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Level Definitions

Purpose

Level definitions contain all the key information required to create your own Ikaruga level. The key pieces of information included in a level definition are:

1. The level name;
2. The number of lives you start with and the maximum possible number of lives;
3. A list of events to be executed at the specified time.



Figure 1: A screenshot of a level definition containing one event.

Where can I find Level Definitions?

Level definitions can be found at the following directory: Assets/Data/Definitions/Levels.

How can I create my own Level Definition?

New level definitions can be added to the project as follows:

1. Right click on the project folder you wish to add a new level definition to;
2. Select Create > Game > Definitions > Level;
3. Modify the new level definition file;
4. Add your new level definition file to the GameManager object in the Main scene.

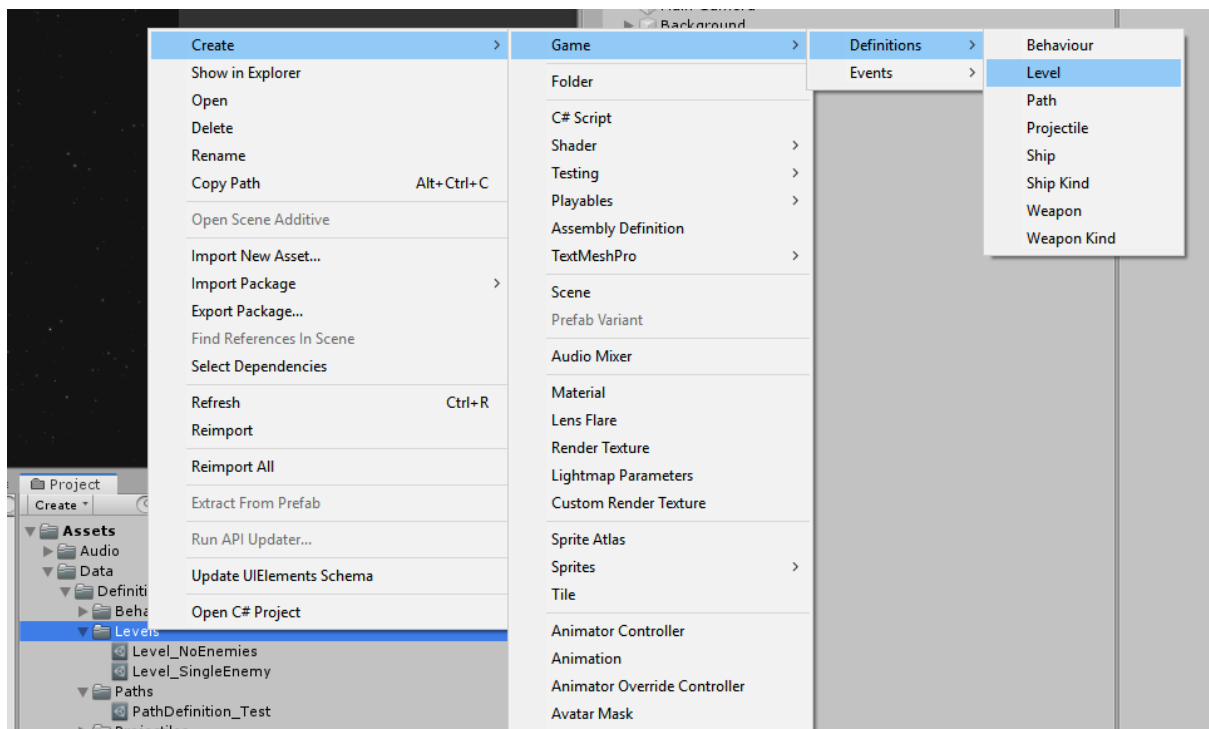


Figure 2: An illustrated example of step 2 of creating your own level definition file.

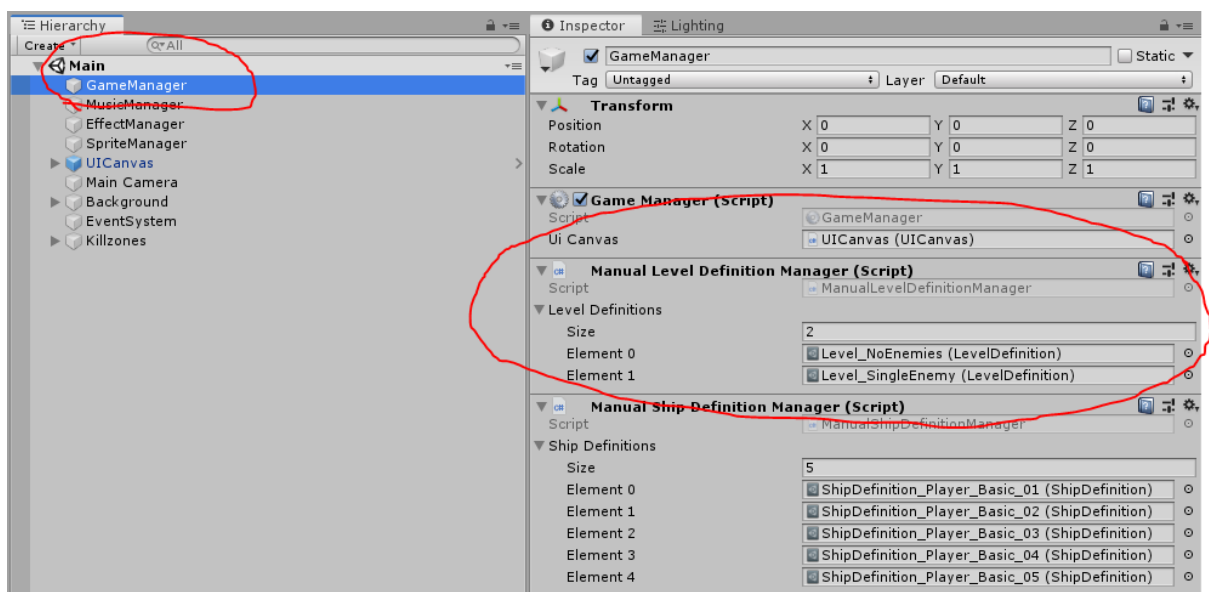


Figure 3: An illustrated example of step 4 of creating your own level definition file.

Events

Purpose

Events contain all the key information required to either spawn an enemy ship or end the session. The latter does not include any special configuration data. The former, however, includes information on the enemy ship's ship definition, path definition, and behaviour definition.

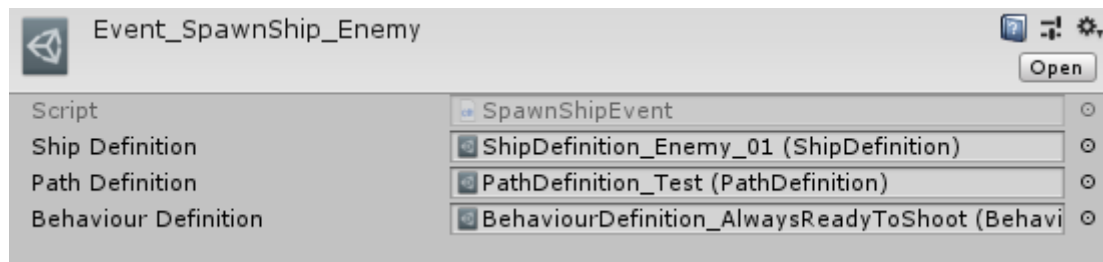


Figure 4: A screenshot of an event for spawning an aggressive enemy ship.

Where can I find Events?

Events can be found at the following directory: Assets/Data/Events.

How can I create my own Event?

New spawn enemy ship events can be added to the project as follows:

1. Right click on the project folder you wish to add a new event to;
2. Select Create > Game > Events > Spawn Ship;
3. Modify the event file;
4. Add the event file to the desired level definitions.

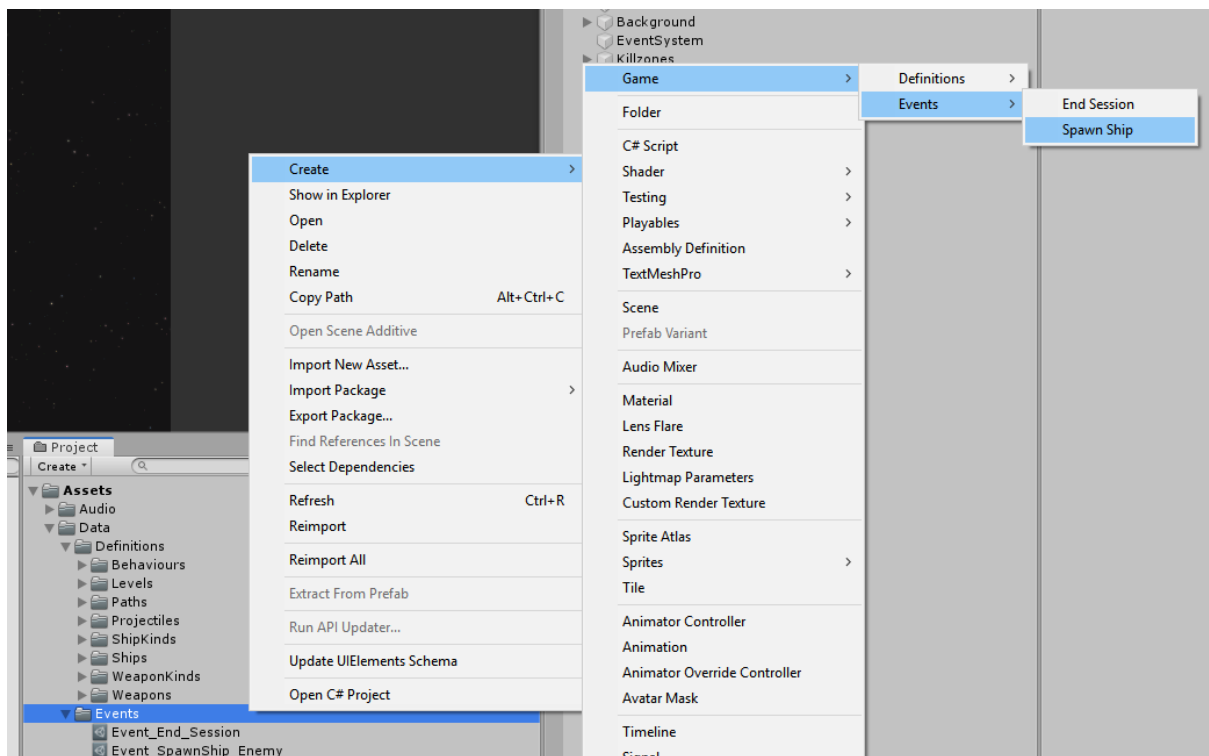


Figure 5: An illustrated example of step 2 of creating your own spawn ship event.

Path Definitions

Purpose

Path definitions contain all the key information required to move an enemy ship in an Ikaruga level. The key pieces of information included in a path definition are:

1. The time taken to travel along the path;
2. A flag that indicates if the path loops;
3. A flag that indicates if the ship is destroyed once it reaches the end of the path;
4. An ordered list of the normalised path points.

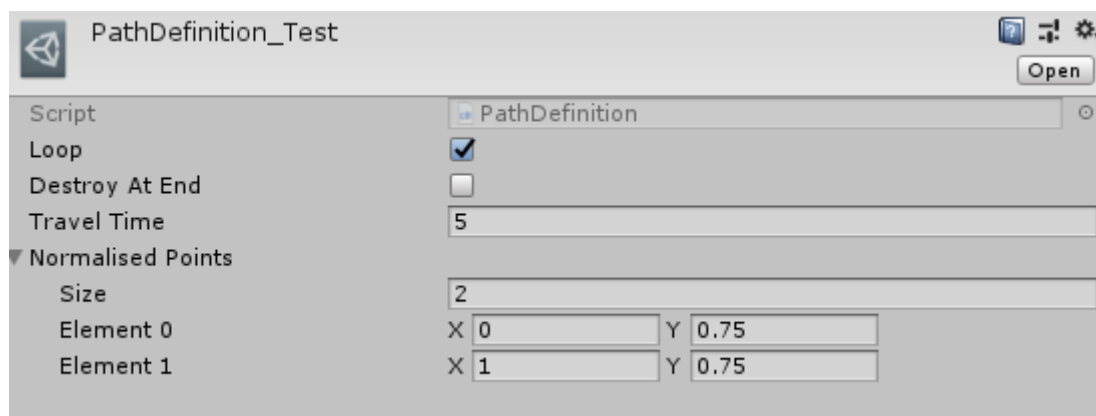


Figure 6: A screenshot of a path definition for moving a ship between two points.

Where can I find Path Definitions?

Path definitions can be found at the following directory: Assets/Data/Definitions/Paths.

How can I create my own path definitions?

New path definitions can be added to the project as follows:

1. Right click on the project folder you wish to add a new level definition to;
2. Select Create > Game > Definitions > Path;
3. Modify the new path definition file;
4. Add your new path definition file to a spawn ship event.

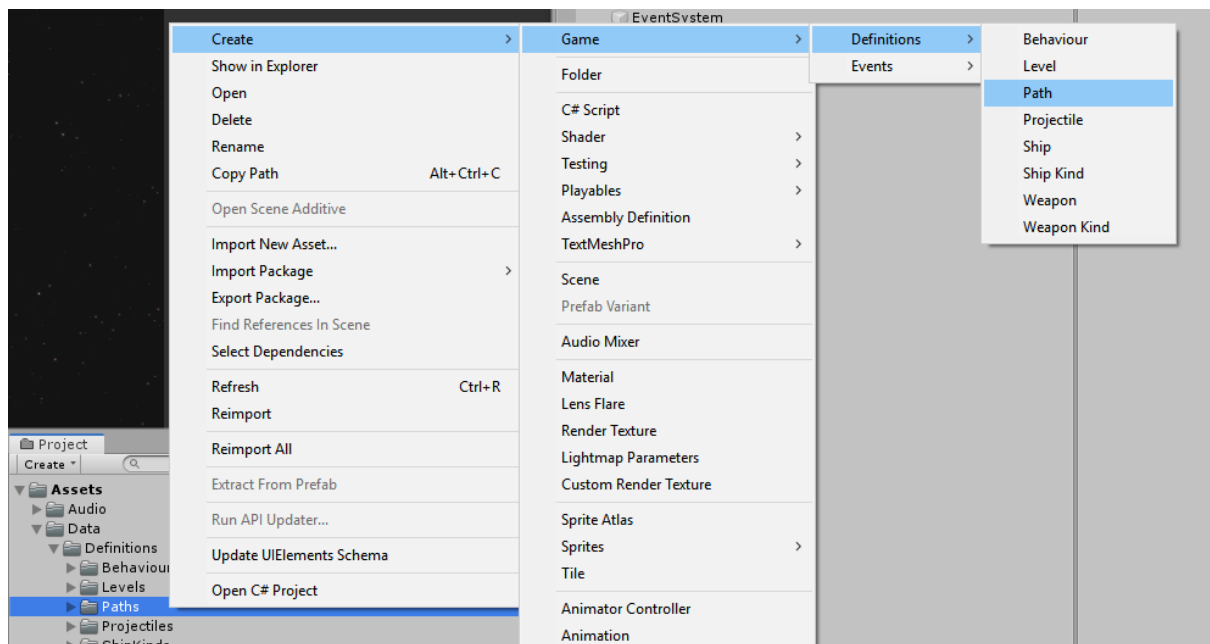


Figure 7: An illustrated example of step 2 of creating your own path definition.

Behaviour Definitions

Purpose

Behaviour definitions contain all the key information required for an enemy ship to attack. The key pieces of information included in a behaviour definition are:

1. A flag that indicates if the primary weapon is used;
2. A flag that indicates if the secondary weapon is used;
3. The time between shot attempts of the primary weapon;
4. The time between shot attempts of the secondary weapon.

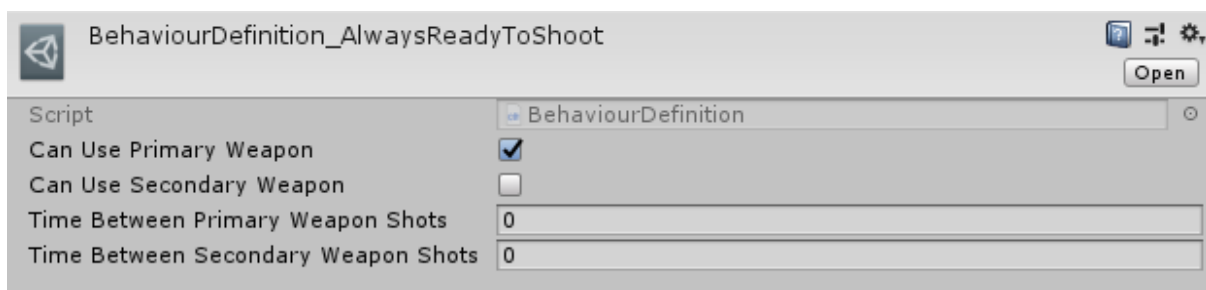


Figure 8: A screenshot of a behaviour definition for ensuring an enemy ship fires their primary weapon as fast as possible.

Where can I find Behaviour Definitions?

Path definitions can be found at the following directory: Assets/Data/Definitions/Behaviours.

How can I create my own Behaviour Definitions?

New behaviour definitions can be added to the project as follows:

1. Right click on the project folder you wish to add a new level definition to;
2. Select Create > Game > Definitions > Behaviour;
3. Modify the new behaviour definition file;
4. Add your new behaviour definition file to a spawn ship event.

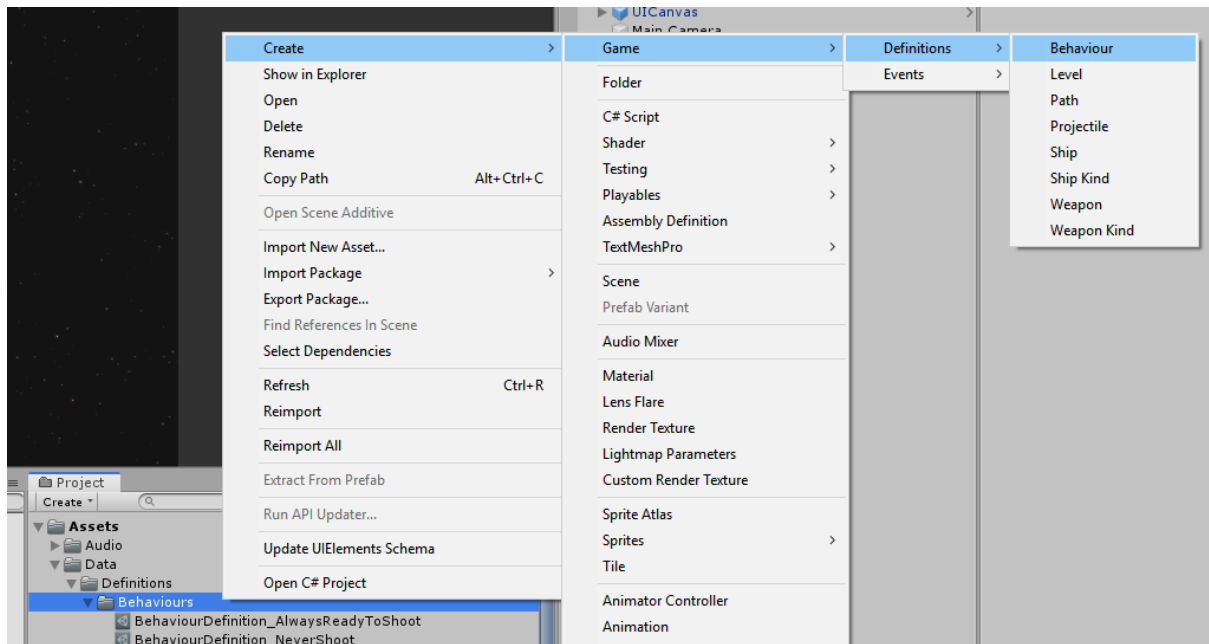


Figure 9: An illustrated example of step 2 of creating your own behaviour definition.

Ship Definitions

Purpose

Ship definitions contain all the key information required for a ship to function in an Ikaruga level. The key pieces of information included in a ship definition are:

1. The name of the ship;
2. The ship kind definition (which contains static ship information);
3. The icon prefab (which is used for the lives counter);
4. The ship prefab (which is the ship in-game).

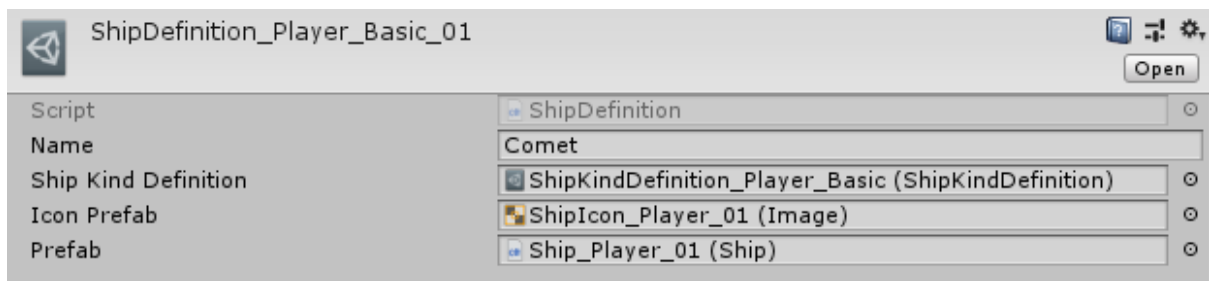


Figure 10: A screenshot of a player ship definition.

Where can I find Ship Definitions?

Ship definitions can be found at the following directory: Assets/Data/Definitions/Ships.

How can I create my own Ship Definitions?

New ship definitions can be added to the project as follows:

1. Right click on the project folder you wish to add a new level definition to;
2. Select Create > Game > Definitions > Ship;
3. Modify the new behaviour definition file;
4. Add your new ship definition file to a spawn ship event.

Where can I find icon prefabs?

Ship icon prefabs can be found at the following directories: Assets/Prefabs/UI/ShipIcons/Player.

Where can I find ship prefabs?

Ship prefabs can be found at the following directories: Assets/Prefabs/Ships/Player and Assets/Prefabs/Ships/Enemies.

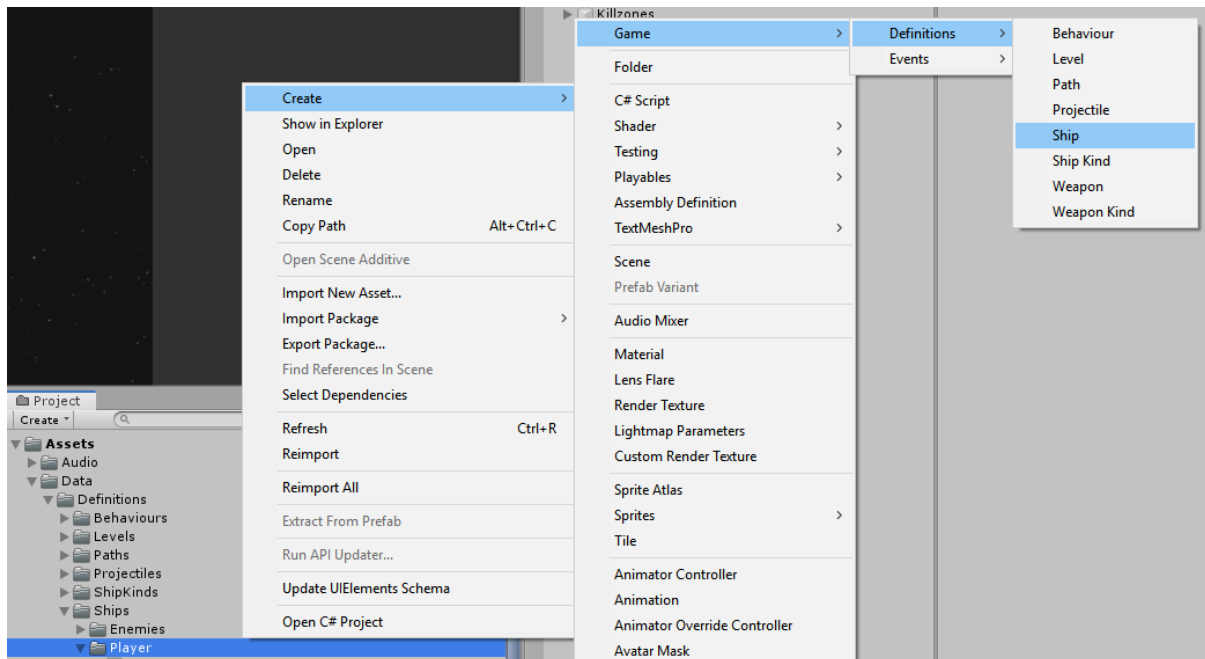


Figure 11: An illustrated example of step 2 of creating your own ship definition.

Ship Kind Definitions

Purpose

Ship kind definitions contain all the key information required for a ship to function in an Ikaruga level. The key pieces of information included in a ship kind definition are:

1. The name of the ship kind;
2. The starting health;
3. The maximum health organised by upgrade order (health levelling is not available in the current prototype and only the first entry will be used);
4. The maximum speed organised by upgrade order (speed levelling is not available in the current prototype and only the first entry will be used);
5. The initial shield element (i.e. the shield element type on start);
6. The shield recharge duration (i.e. the time until a deactivated shield is automatically restored);
7. The primary weapon organised by upgrade order (weapon levelling is not available in the current prototype and only the first entry will be used);
8. The secondary weapon organised by upgrade order (weapon levelling is not available in the current prototype and only the first entry will be used).

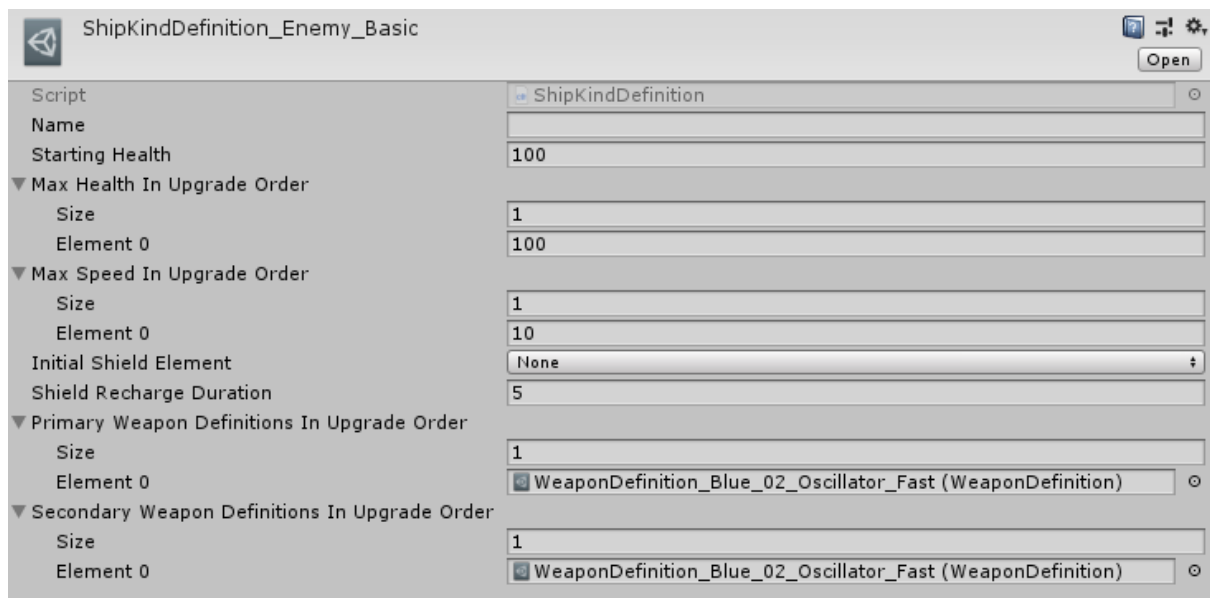


Figure 12: A screenshot of a player ship kind definition.

Where can I find Ship Kind Definitions?

Ship kind definitions can be found at the following directory: Assets/Data/Definitions/ShipKinds.

How can I create my own Ship Kind Definitions?

New ship kind definitions can be added to the project as follows:

1. Right click on the project folder you wish to add a new level definition to;
2. Select Create > Game > Definitions > Ship Kind;
3. Modify the new ship kind definition file;
4. Add your new ship kind definition file to a ship definition.

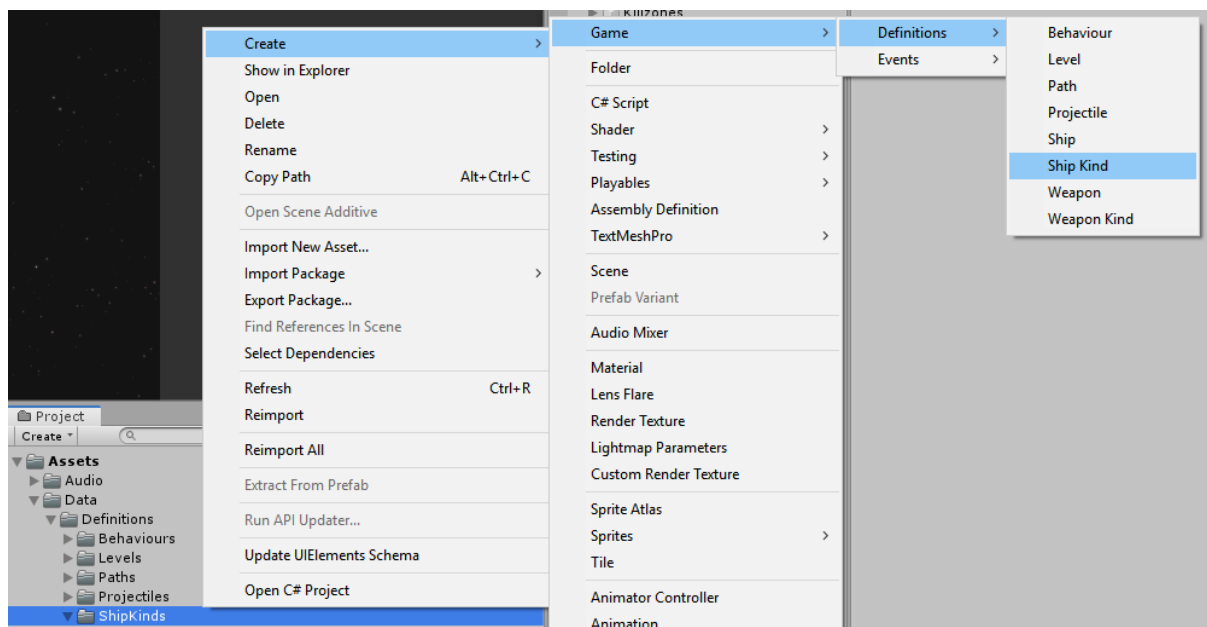


Figure 13: An illustrated example of step 2 of creating your own ship kind definition.

Weapon Definitions

Purpose

Weapon definitions contain all the key information required for a weapon to function in an Ikaruga level. The key pieces of information included in a weapon definition are:

1. The name of the weapon;
2. The weapon kind definition (which contains static weapon information);
3. The projectile definition.

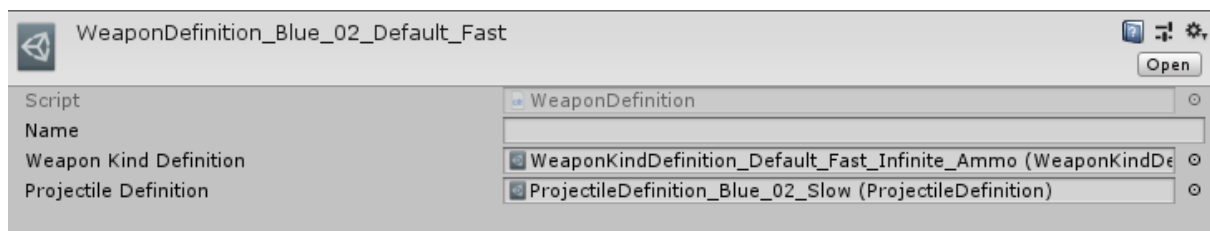


Figure 14: A screenshot of a weapon definition.

Where can I find Weapon Definitions?

Weapon definitions can be found at the following directory: Assets/Data/Definitions/Weapons.

How can I create my own Weapon Definitions?

New weapon definitions can be added to the project as follows:

1. Right click on the project folder you wish to add a new level definition to;
2. Select Create > Game > Definitions > Weapon;
3. Modify the new weapon definition file;
4. Add your new weapon definition file to a ship kind definition.

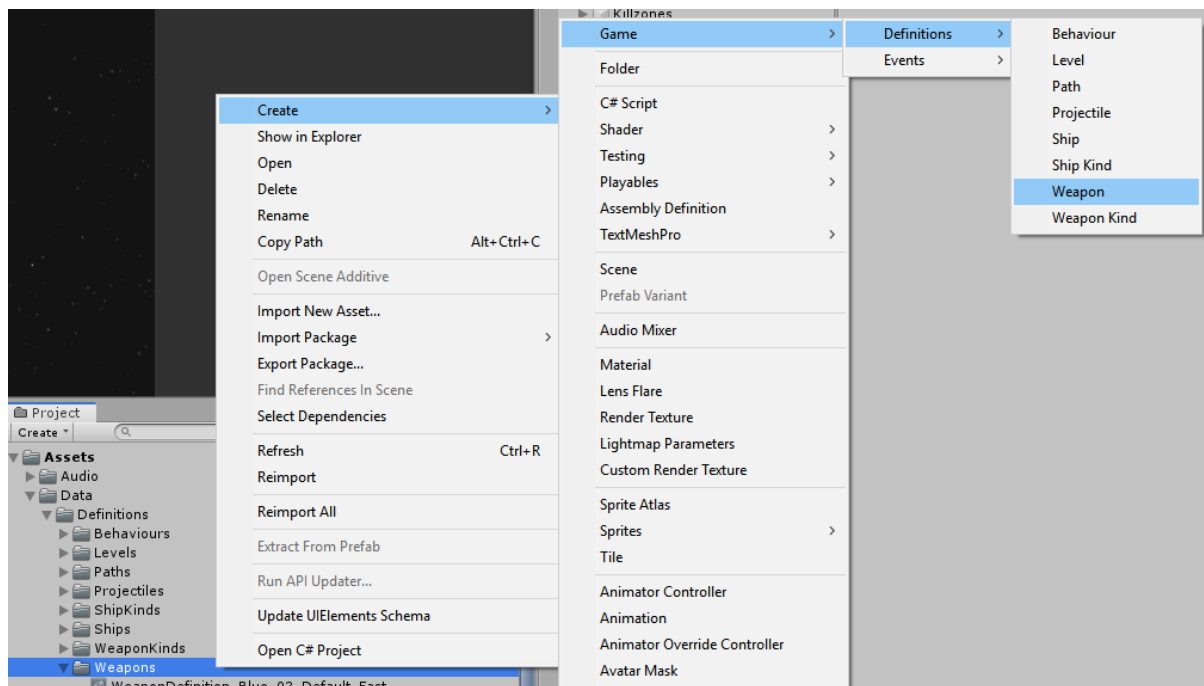


Figure 15: An illustrated example of step 2 of creating your own weapon definition.

Weapon Kind Definitions

Purpose

Weapon kind definitions contain all the key information required for a weapon to function in an Ikaruga level. The key pieces of information included in a weapon kind definition are:

1. The name of the weapon kind;
2. The configuration used (either “default” or “oscillator”);
3. The starting ammo;
4. The minimum ammo;
5. The maximum ammo;
6. The cooldown after a shot;
7. The warmup for a shot.

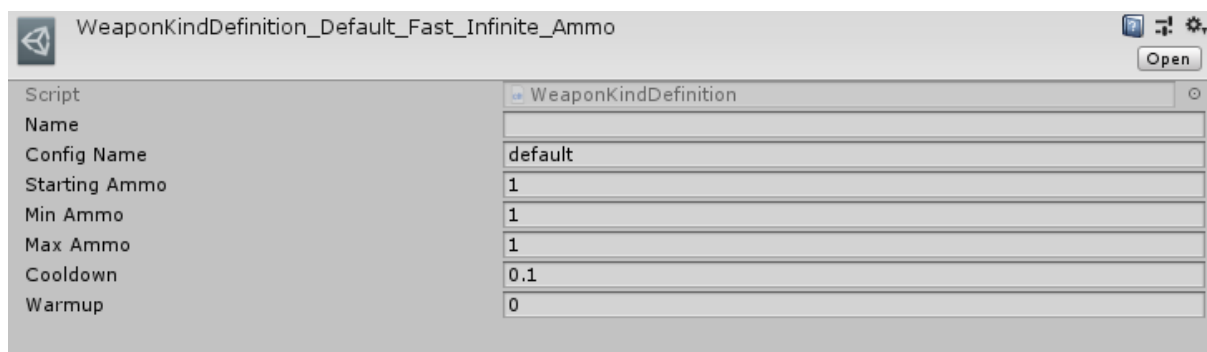


Figure 16: A screenshot of a weapon kind definition.

Where can I find Weapon Kind Definitions?

Weapon kind definitions can be found at the following directory:
Assets/Data/Definitions/WeaponKinds.

How can I create my own Weapon Kind Definitions?

New weapon kind definitions can be added to the project as follows:

1. Right click on the project folder you wish to add a new level definition to;
2. Select Create > Game > Definitions > Weapon Kind;
3. Modify the new weapon kind definition file;
4. Add your new weapon kind definition file to a weapon definition.

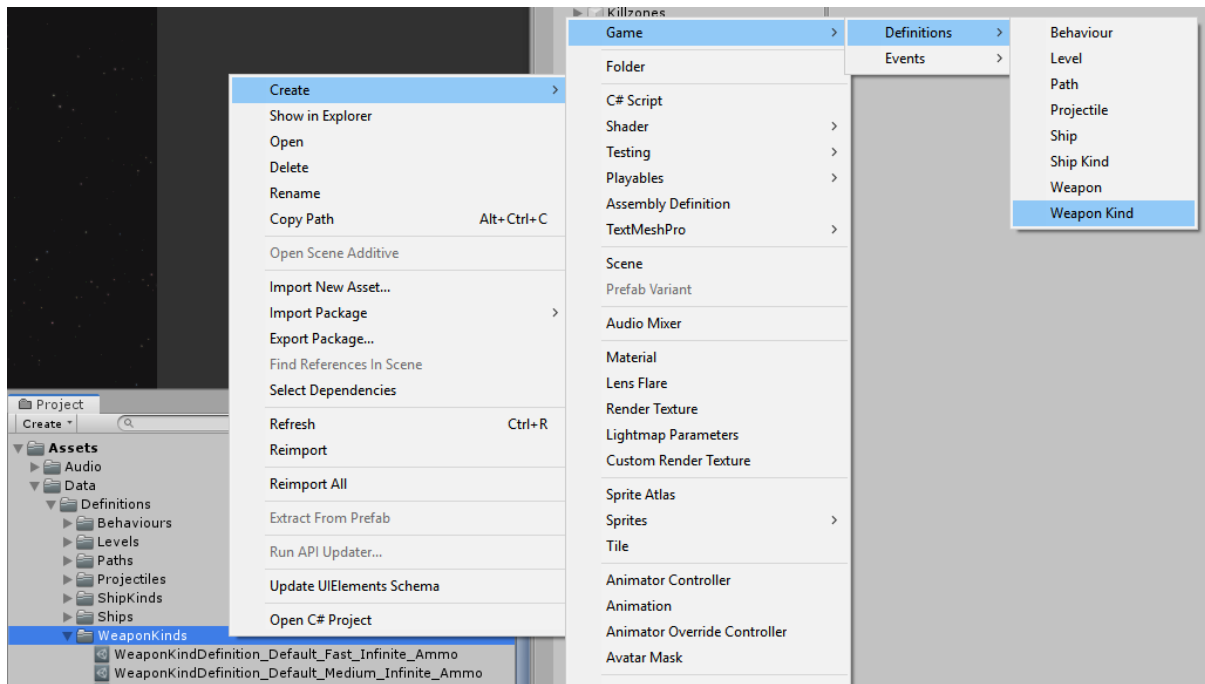


Figure 17: An illustrated example of step 2 of creating your own weapon kind definition.

Projectile Definitions

Purpose

Projectile definitions contain all the key information required for a projectile to function in an Ikaruga level. The key pieces of information included in a projectile definition are:

1. The name of the projectile;
2. The movement speed (in metres per second);
3. The lifetime of the projectile (destroyed on end);
4. The element of the projectile (for the purposes of ship shields);
5. The projectile prefab.

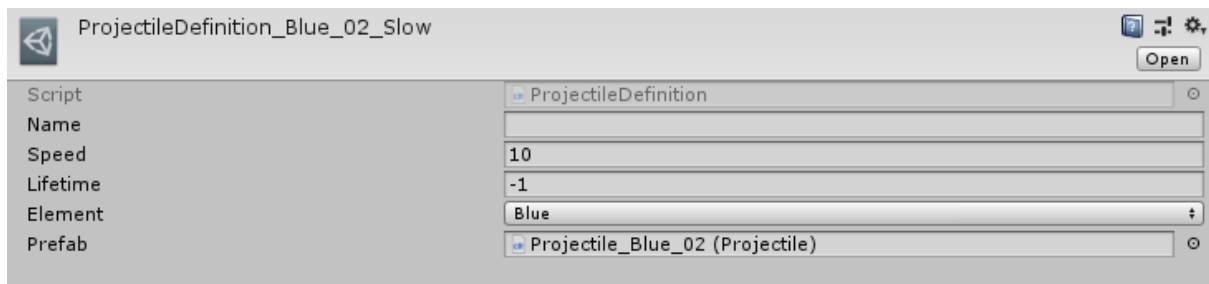


Figure 18: A screenshot of a projectile definition.

Where can I find Projectile Definitions?

Projectile definitions can be found at the following directory: Assets/Data/Definitions/Projectiles.

Where can I find projectile prefabs?

Projectile prefabs can be found at the following directory: Assets/Prefabs/Projectiles.

How can I create my own Projectile Definitions?

New projectile definitions can be added to the project as follows:

1. Right click on the project folder you wish to add a new level definition to;
2. Select Create > Game > Definitions > Projectile;
3. Modify the new projectile definition file;

4. Add your new projectile definition file to a weapon definition.

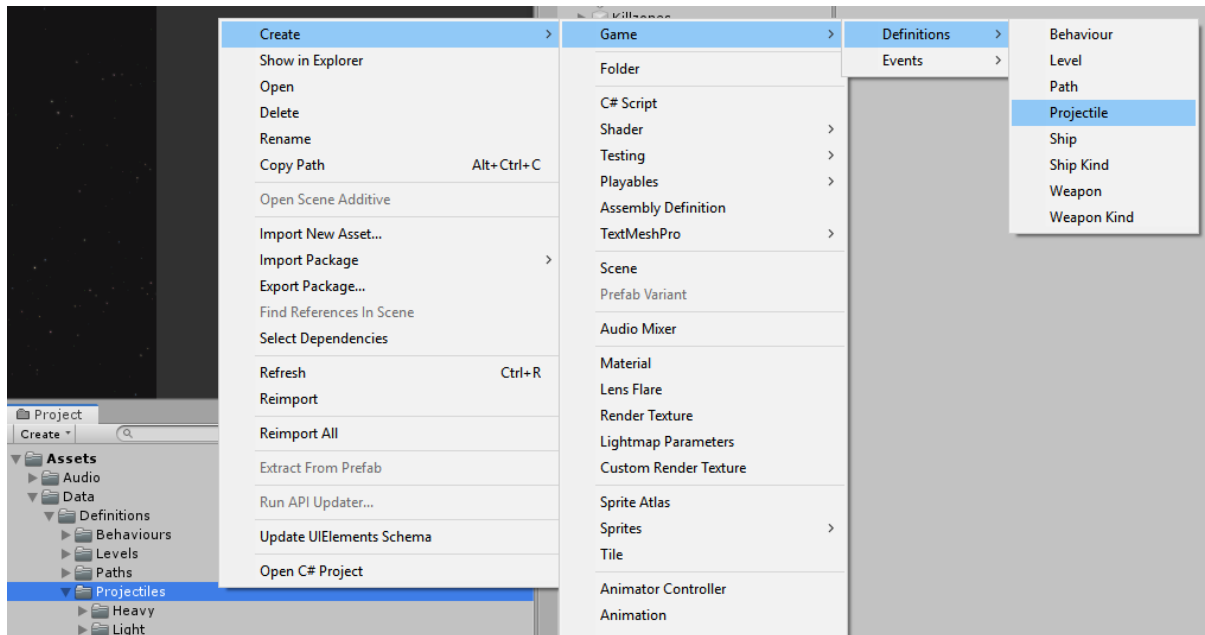


Figure 19: An illustrated example of step 2 of creating your own projectile definition.