

// Global variables

Global number **Score** = 0 // The player's score

Global number **Rockets** = 3 // Number of rocket powerups the player has

Global number **startTime** = 0 // Time the level began at

Global number **FirstRun** = 0 // 0 if first run, 1 after restarting layout

Touch control

// Controlling the player spaceship with touch controls, or using the mouse on desktop.

// If the player is touching the screen (but not the rockets button), and the player isn't right under the touch, move them towards the touch location and make the jet sound play.

Touch	Is in touch
Touch	Is touching RocketButton
System	distance(Player.X, Player.Y, Touch.X, Touch.Y) > 300 × dt

Move 300 × dt pixels at angle angle(Player.X, Player.Y, Touch.X, Touch.Y)

Set "jet" volume to 0 dB

+ Add action

+ Add...

// Change the player animation depending on the direction they're travelling in.

Player	X < Touch.X
--------	-------------

Set animation to "**TiltRight**" (play from current frame)

+ Add action

+ Add...

Player	X > Touch.X
--------	-------------

Set animation to "**Tiltleft**" (play from current frame)

+ Add action

+ Add...

// If the player is not touching the screen to move the player, make sure the animation resets to default (not tilting) and the jet sound goes quiet again.

System	Else
Player	Is animation "Default" playing

Set "jet" volume to -60 dB

Set animation to "**Default**" (play from current frame)

+ Add action

+ Add...

// Touching the rockets button will fire two rockets if the player has any powerups.

Touch	On touched RocketButton
System	Rockets > 0

Spawn **PlayerRocket** on layer "**Game**" (image point 0)

Set angle to 270 degrees

Set X to Self.X + 35

Spawn **Explosion2** on layer "**Game**" (image point 0)

Spawn **PlayerRocket** on layer **"Game"** (image point 0)

Set angle to 270 degrees

Set X to *Self.X* - 35

Spawn **Explosion2** on layer **"Game"** (image point 0)

Subtract 1 from **Rockets**

Flash: Flash 0.1 on 0.1 off for **1.0** seconds

Play **TronBlast1** not looping at volume 0 dB (tag "")

+ Add action

+ Add...

Keybo... | On **R** pressed

Restart layout

+ Add action

+ Add...

Add event to 'Touch control'

+ Add to 'Touch control'...

Player and general

// The player control, UI display and general events

// Play a startup sound, then start the game music. Remove the initial gun flare object.

System | On start of layout

Destroy

Play **SquareMotif1** not looping at volume 0 dB (tag "")

Wait **1.0** seconds

Set **Rockets** to 3

Set **startTime** to *time*

+ Add action

+ Add...

// Only play the music on the first run, otherwise music will play twice at the same time when the layout restarts.

System | **FirstRun** = 0

Play **MattOglseby - 3** looping at volume 0 dB (tag "music")

Set **FirstRun** to 1

+ Add action

+ Add...

// On startup, also set the jet loop sound playing and looping, but fade it out if the player is not moving.

System | On start of layout

Play **JetLoop1** looping at volume -60 dB (tag "jet")

+ Add action

+ Add...

// Prevent the player flying ahead too far or going off the bottom of the screen.

System | *time* > *starttime* + 3

System | ViewportTop("Game") > 0

System | ViewportBottom("Game") < 0

Player | $Y > \text{viewportBottom}(\text{"Game"})$

Set Y to $\text{ViewportBottom}(\text{"Game"})$

+ Add action

+ Add...

System | $\text{time} > \text{starttime} + 3$

System | $\text{ViewportTop}(\text{"Game"}) > 0$

Player | $Y < \text{Scroller.Y}$

Set Y to Scroller.Y

+ Add action

+ Add...

// Fire lasers 10 times a second while enemies are on screen and above the player (there's no point firing otherwise).

Enemies | $Y < \text{Player.Y}$

Enemies | Is on-screen

System | Every **0.1** seconds

Spawn **PlayerLaser** on layer **"FX"** (image point 1)

Set angle to 270 degrees

Spawn **GunFlare** on layer **"Game"** (image point 0)

Set angle to $\text{random}(360)$ degrees

Play **Lazer Fire 1** not looping at volume 0 dB (tag "")

+ Add action

+ Add...

// Don't let player bullets carry on all the way up the layout - destroy them when they reach the top of the screen.

Player... | $Y < \text{ViewportTop}(\text{"Game"}) - 80$

Destroy

+ Add action

+ Add...

// Scroll to the scroller object, keep the gun flares in place, and keep the display updated.

System | $\text{Player.Count} > 0$

Scroll to $(\text{Player.X}, \text{Scroller.Y})$

+ Add action

+ Add...

System | Every tick

Set position to $(\text{Player.X}, \text{Player.Y} - 50)$

Set text to Score

Set width to $(\text{Player.Health} \div 500) \times 150$

Set position to $(\text{Player.X}, \text{Player.Y} + 85)$

Set width to $\text{Rockets} \times 16$

+ Add action

+ Add...

Add event to 'Player and general'

+ Add to 'Player and general'...

Enemies

BladeEnemy

// The spinning blade enemy which occasionally fires at the player.

// When blade enemies hit, reduce their health. Rockets destroy them completely on impact.

Player... | On collision with **BladeEnemy**

Spawn **Explosion2** on layer "FX" (image point 0)

Set angle to *random(360)* degrees

Destroy

Subtract 1 from **Health**

Add 1 to **Score**

Play **Lazer Ricochet** not looping at volume 0 dB (tag "")

+ Add action

+ Add...

Player... | On collision with **BladeEnemy**

Spawn **Explosion3** on layer "FX" (image point 0)

Set angle to *random(360)* degrees

Spawn **Explosion3** on layer "FX" (image point 0)

Set angle to *random(360)* degrees

Destroy

Destroy

Add 17 to **Score**

Play **Explosion 4** not looping at volume 0 dB (tag "")

+ Add action

+ Add...

// When blade enemies run out of health, destroy them.

Blade... | **Health** ≤ 0

Spawn **Explosion1** on layer "FX" (image point 0)

Destroy

Add 10 to **Score**

Play **Explosion 1** not looping at volume 0 dB (tag "")

+ Add action

+ Add...

// Make blade enemies gradually rotate towards the player.

System | Every tick

Rotate $10 \times dt$ degrees toward (Player.X, Player.Y)

+ Add action

+ Add...

// If the blade enemy has gone off the bottom of the screen, destroy it.

Blade... | $Y \geq \text{ViewportBottom}(\text{"Game"}) + 60$

Destroy

+ Add action

+ Add...

// While there are *BladeEnemies*, pick a random one and make it shoot at the player every 1 second.

System | BladeEnemy.Count > 0

System | Every **1.0** seconds

System | Pick **BladeEnemy** instance random(BladeEnemy.Count)

Spawn **EnemyBullet** on layer "Game" (image point 0)

Set angle toward (Player.X, Player.Y)

Play **RetroLaser1** not looping at volume 0 dB (tag "")

+ Add action

+ Add...

// When the enemy bullets hit the player, cause some damage.

Enemy... | On collision with **Player**

Spawn **Explosion2** on layer "Game" (image point 0)

Destroy

Subtract 10 from **Health**

Subtract 2 from **Score**

Play **Explosion 3** not looping at volume 0 dB (tag "")

+ Add action

+ Add...

// If the blade enemy collides with the player, make it explode and cause the player damage.

Blade... | On collision with **Player**

Spawn **Explosion3** on layer "FX" (image point 0)

Set angle to *random(360)* degrees

Destroy

Subtract 25 from **Health**

Subtract 15 from **Score**

Play **Explosion 4** not looping at volume 0 dB (tag "")

+ Add action

+ Add...

Add event to 'BladeEnemy'

+ Add to 'BladeEnemy'...

SpikeyEnemy

// The green bomb enemy that doesn't shoot.

// Spikey enemies are one-hit kills. Rockets don't even explode when hitting a spikey enemy, let them pass straight through.

Player... | On collision with **SpikeyEnemy**

Spawn **Explosion1** on layer "FX" (image point 0)

Destroy

Destroy

Add 2 to **Score**

Play **Explosion 4** not looping at volume 0 dB (tag "")

+ Add action

+ Add...

Player... | On collision with **SpikeyEnemy**

Spawn **Explosion1** on layer "FX" (image point 0)

Destroy

Add 2 to **Score**

Play **Explosion 2** not looping at volume 0 dB (tag "")

+ Add action

+ Add...

// *SpikeyEnemies are like bombs, so cause lots of damage if they hit the player.*

Spikey... | On collision with **Player**

Spawn **Explosion3** on layer "FX" (image point 0)

Set angle to *random(360)* degrees

Destroy

Subtract 25 from **Health**

Subtract 15 from **Score**

Play **Explosion 4** not looping at volume 0 dB (tag "")

+ Add action

+ Add...

Add event to 'SpikeyEnemy'

+ Add to 'SpikeyEnemy'...

BugEnemy

// *Moves down the screen and shoots at the player.*

// *Cause damage when the player shoots the bug enemy. Rockets destroy bug enemies on impact.*

Player... | On collision with **BugEnemy**

Spawn **Explosion2** on layer "Game" (image point 0)

Set angle to *random(360)* degrees

Destroy

Subtract 1 from **Health**

Add 1 to **Score**

Play **Lazer Ricochet** not looping at volume 0 dB (tag "")

+ Add action

+ Add...

Player... | On collision with **BugEnemy**

Spawn **Explosion3** on layer "FX" (image point 0)

Set angle to *random(360)* degrees

Spawn **Explosion3** on layer "FX" (image point 0)

Set angle to *random(360)* degrees

Destroy

Destroy

Add 20 to **Score**

Play **Explosion 4** not looping at volume 0 dB (tag "")

+ Add action

+ Add...

// Destroy the bug enemy when it runs out of health.

BugEn... | Health \leq 0

Spawn **Explosion1** on layer "FX" (*image point 0*)

Destroy

Add 15 to **Score**

Play **Explosion 1** not looping at volume 0 dB (tag "")

+ Add action

+ Add...

// Make the bug enemies move down the screen at 100 pixels per second.

System | Every tick

Set Y to *BugEnemy.Y + 100 × dt*

+ Add action

+ Add...

// Destroy bug enemies if they go off the bottom of the screen.

BugEn... | $Y \geq$ ViewportBottom("Game") + 60

Destroy

+ Add action

+ Add...

// While there are BugEnemies, pick a random one and make it shoot a salvo of three shots at the player, each 200ms apart.

System | BugEnemy.Count > 0

System | Every 2.0 seconds

System | Pick **BugEnemy** instance random(BugEnemy.Count)

Spawn **EnemyLaser** on layer "FX" (*image point 0*)

Play **RetroLaser1** not looping at volume 0 dB (tag "")

Set angle toward (*Player.X, Player.Y*)

Wait 0.2 seconds

Spawn **EnemyLaser** on layer "FX" (*image point 0*)

Play **RetroLaser1** not looping at volume 0 dB (tag "")

Set angle toward (*Player.X, Player.Y*)

Wait 0.2 seconds

Spawn **EnemyLaser** on layer "FX" (*image point 0*)

Play **RetroLaser1** not looping at volume 0 dB (tag "")

Set angle toward (*Player.X, Player.Y*)

+ Add action

+ Add...

// *If the bug's lasers hit the player, cause them damage.*

Enemy... | On collision with **Player**

Spawn **Explosion2** on layer "Game" (*image point 0*)

Destroy

Subtract 10 from **Health**

Subtract 2 from **Score**

Play **Explosion 3** not looping at volume 0 dB (tag "")

+ Add action

+ Add...

// *As with the other enemies, if the bug enemy hits the player, explode and cause the player damage.*

BugEn... | On collision with **Player**

Spawn **Explosion3** on layer "FX" (*image point 0*)

Set angle to *random(360)* degrees

Destroy

Subtract 25 from **Health**

Subtract 15 from **Score**

Play **Explosion 4** not looping at volume 0 dB (tag "")

+ Add action

+ Add...

Add event to 'BugEnemy'

+ Add to 'BugEnemy'...

FighterEnemy

// *Moves in a figure-8 pattern horizontally firing lasers down and occasionally firing a SpikeyEnemy at the player.*

// *When fighter enemies hit, reduce their health. Rockets don't destroy on impact, just cause 10 damage.*

Player... |

Spawn **Explosion2** on layer "Game" (*image point 0*)

Set angle to *random(360)* degrees

Destroy

Subtract 1 from **Health**

Add 1 to **Score**

Play **Lazer Ricochet** not looping at volume 0 dB (tag "")

+ Add action

+ Add...

Player... | On collision with **FighterEnemy**

Spawn **Explosion3** on layer "FX" (*image point 0*)

Set angle to *random(360)* degrees

Subtract 10 from **Health**

Destroy

Add 10 to **Score**

Play **Explosion 4** not looping at volume 0 dB (tag "")

+ Add action

+ Add...

// When fighter enemies run out of health, destroy them.

Fighte... | **Health** ≤ 0

Spawn **Explosion3** on layer "FX" (image point 0)

Destroy

Add 25 to **Score**

Play **Explosion 1** not looping at volume 0 dB (tag "")

+ Add action

+ Add...

// On creation (when the 'created' instance variable is at its default, 0) store the position of the object in the originX and originY instance variables.

Fighte... | **created** = 0

System | For each **FighterEnemy**

Set **originX** to Self.X

Set **originY** to Self.Y

Set **created** to 1

+ Add action

+ Add...

// Move the fighter enemy in a horizontal figure-8 pattern using its own timer stored in an instance variable.

System | Every tick

Add dt to **myTimer**

Set X to $Self.originX + \cos(Self.myTimer \times 90) \times 150$

Set Y to $Self.originY + \sin(Self.myTimer \times 180) \times 50$

+ Add action

+ Add...

// Destroy fighter enemies if they go off the bottom of the screen.

Fighte... | $Y \geq \text{ViewportBottom}(\text{"Game"}) + 60$

Destroy

+ Add action

+ Add...

// While there are fighter enemies, make them shoot straight down (not at the player) every second.

System | **FighterEnemy.Count** > 0

System | Every 1.0 seconds

System | For each **FighterEnemy**

Spawn **EnemyLaser** on layer "FX" (image point 0)

Spawn **EnemyLaser** on layer "FX" (image point 0)

Set X to $Self.X - 40$

Set angle to 90 degrees

Spawn **EnemyLaser** on layer "FX" (image point 0)

Set X to $Self.X + 40$

Set angle to 90 degrees

Play **RetroLaser2** not looping at volume 0 dB (tag "")

+ Add action

+ Add...

// If the fighter enemy collides with the player, make it explode and cause the player damage.

Player | On collision with **FighterEnemy**

Spawn **Explosion3** on layer "FX" (image point 0)

Set angle to $random(360)$ degrees

Destroy

Subtract 50 from **Health**

Subtract 25 from **Score**

Play **Explosion 4** not looping at volume 0 dB (tag "")

+ Add action

+ Add...

Add event to 'FighterEnemy'

+ Add to 'FighterEnemy'...

// Destroy the player if they run out of health!

Player | **Health** ≤ 0

System | Trigger once

Spawn **Explosion3** on layer "FX" (image point 0)

Play **Explosion 3** not looping at volume 0 dB (tag "")

Destroy

Wait **4.0** seconds

Restart layout

+ Add action

+ Add...

Add event to 'Enemies'

+ Add to 'Enemies'...

Enemy spawning

// Turning the hidden 'EnemySpawner' object in to groups of enemies.

// When the hidden enemy spawner objects get near the visible screen, depending on their 'type' instance variable, spawn a bunch of enemies.

Enemy... | $Y \geq Scroller.Y - ((ViewportBottom("Game") - ViewportTop("Game")) \div 2) - 80$

Enemy... | $Y < Scroller.Y$

System | $time > starttime + 3$

System | For each **EnemySpawner**

+ Add action

+ Add...

// When the 'type' instance variable is "4Blades", create four BladeEnemies.

Enemy...	Type = "4Blades"
System	Repeat 4 times

Create object **BladeEnemy** on layer "Game" at (EnemySpawner.X + LoopIndex × 50, EnemySpawner.Y)

Set angle to 135 - LoopIndex × 22.5 degrees

+ Add action

+ Add...

// When the 'type' instance variable is "9Spikey", create nine SpikeyEnemies.

Enemy...	Type = "9Spikey"
System	Repeat 9 times

Create object **SpikeyEnemy** on layer "Game" at (EnemySpawner.X + LoopIndex × 20, EnemySpawner.Y)

Set angle to 135 - LoopIndex × 10 degrees

+ Add action

+ Add...

// And so on for other enemy types...

Enemy...	Type = "3Bugs"
System	Repeat 3 times

Create object **BugEnemy** on layer "Game" at (EnemySpawner.X + LoopIndex × 150, EnemySpawner.Y)

+ Add action

+ Add...

Enemy...	Type = "Fighter"
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Create object **FighterEnemy** on layer "Game" at (EnemySpawner.X, EnemySpawner.Y)

+ Add action

+ Add...

// Don't forget to destroy the enemy spawner, or it will keep spawning enemies.

Destroy

+ Add action

+ Add...

Add event to 'Enemy spawning'

+ Add to 'Enemy spawning'...

Misc

// Powerups and other events.

// Player collecting a rocket powerup.

Player	On collision with RocketPowerup
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Add 3 to **Rockets**

Destroy

Play **Upgrade1** not looping at volume 0 dB (tag "")

+ Add action

+ Add...

// Destroy rocket powerups if they go too far off the bottom of the screen.

Rocke... | $Y \geq \text{ViewportTop}(\text{"Game"}) - 80$

Set Y to $\text{Self.Y} + 100 \times dt$

+ Add action

+ Add...

// This event is intentionally empty, it simply stops the browser scrolling down when you press spacebar (Construct 2 prevents browser shortcuts if any key press event exists for it).

Keybo... | On **Space** pressed

+ Add action

+ Add...

// Explosions need to be destroyed when their animation is over, otherwise they would still exist on their last frame, gradually slowing down the game.

Explos... | On any animation finished

Destroy

+ Add action

+ Add...

GunFl... | On any animation finished

Destroy

+ Add action

+ Add...

Explos... | On any animation finished

Destroy

+ Add action

+ Add...

Explos... | On any animation finished

Destroy

+ Add action

+ Add...

Add event to 'Misc'

+ Add to 'Misc'...

Add event

+ Add...