# Bullet Hell

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# Goals for 0.1.0 (2016)

* User is able to play through the game (at least 1 stage)
* Character selection screen
* Local scoreboard
* Options menu
* Ending
* Mid-bosses
* Pause menu

# Goals for 0.2.0 (2022)

* At least 1 more stage
* Concept art for basic enemies
* Local scoreboard
* Options menu for sound /music volume

# Ideas

## Story

Every moon that orbits this earth has its own Chandra, a guardian of its solar rhythm. Soma is a Chandra of this earth, tasked to guard the Day, Night, and Twilight Cores, all responsible for the phases of the day. Soma is also an avid pumpkin farmer and developed the hobby to battle her daily monotony. One day she thought “I wonder if my pumpkins grew a bit fatter if the day lasted just a tiny bit longer” and decided not to activate the Twilight Core that night. To activate a core, she needs to hold it to its pedestal for a moment and the phase of the day changes. After she’s done, she puts the cores into her hat. As the sun was to set, she was measuring her pumpkins on her yard. She feared that reality would break but alas, it didn’t. As she was crawling on the ground her hat fell off and the Twilight Core rolled out. Suddenly an Asura appeared from the woods and snatched the core, and ran off. Soma screamed and grabbed her broom in pursuit, planning to use the Day and Night cores to defeat the Asura.

INTRO:

“Any world that rotates, gets their own guardian, a Chandra.”

“The solar rhythm of this world has been trusted to a young Chandra named Soma.”

“To battle the daily monotony of maintaining the Cores she picked up a hobby: growing pumpkins, overly obsessing over their size and quality.”

“One day she thought it was a good idea to see if they grow a little larger if only the day lasted a little longer…”

“The cores of Day and Night in her hat stayed intact when she crawled in the patch and dropped her hat.”

“But the Twilight Core was stolen by quick hands…”

The Lordess of the realm of Asuras has opened pathways to the regular world and sent Asuras to fetch her a mystical item, “The Twilight Core”. But by removing it, the world stopped seeing sunrises or sunsets, only perpetual night or day.

You are Soma, a happy-go-lucky witch, a pumpkin farm owner and juice entrepreneur, who is a part of a lunar commission tasked to keep an eye on any paranormal activities on the earth the moon orbits. One day she was tasked to investigate this weird phenomenon. That’s when she spots a fleeing Asura.

Soma tracks the Asura who stole the core and follows its path to a forest that is guarded by Silvi, a Friendly Huldra.

After defeating Silvi, Soma travels deep into The Black Forest where (Boss2) is helping the Asuras open pathways. Soma defeats her and follows the Asura through the pathway.

In the Asura realm Soma follows the riverbank and catches up to the asura who tries to use the core against her again. She chases it away and meets (Boss3).

Soma enters a lotus garden of the (Boss6) temple where she meets (Boss4/Lakshmi).

Stage 5 signifies the various layers of the temple (Asura, Human, Deva, Brahma). Soma makes her way to the middle and meets (Brahma) who’s given (Boss6) a boon that makes her immortal. (Brahma) doesn’t think Soma is suitable to mess with deity business so she has to defeat her.

After that, Brahma teleports her to an astral plane, a courtyard beyond the temple. Main char lures out (Boss6). After main char survives her initial attacks, an avatar appears and knocks the core out of her hand, giving it to the main char. Main char can now temporarily summon twilight to make (Boss6) vulnerable.

After defeating her the main char returns to her realm to enjoy the sunsets and sunrises again.

1. **Asura’s Path**  
   Main character follows an asura that has stolen the twilight core. After pursuing him for a while she encounters a forest guardian who doesn’t let her through for it is a sacred place.
   1. Midboss: Asura
   2. Boss: Forest Guardian
2. **The Black Forest**  
   After defeating the guard main character proceeds to the woods when she notices a twilight leak. She follows it to deeper to the forest where she meets a Spider Royalty who is opening portals to the twilight realm. She defeats her and travels through a portal to the twilight realm.
   1. Boss: Spider queen
3. **Riverbank**???
   1. Midboss: Asura
4. **Lotus Garden**4th stage and boss? Asura
   1. Boss: Lakshmi
5. **Hindu Temple**Main character meets (Brahma) who’s given the final boss a boon that makes her immortal. (Brahma) doesn’t think the main character is suitable to mess with deity business so she has to defeat her. After defeating (Brahma) main character acquires a power from her to temporarily change day or night to twilight to kill the final boss. (Twilight Core)
   1. Boss: Brahma
6. **Temple Courtyard**

## Music

* Asura who remain Asura (Stage1)

## Characters

### Boss 0.5 - Asura

* Immortal when spell cast but drops bonus if survived

### Boss 1 - Maaya, Friendly Huldra



* Maaya (Māyā connotes a "magic show, an illusion where things appear to be present but are not what they seem")
  + She pretends to be a human but is a fox. But her tail gives her away
* Fox tail
* Guardian of the forest
* Spear
* Spell idea: spiral spears
* hard to catch, teleportation
* fox fires: slow cluster bullets
* Huldras are usually said to be very self-conscious about their tail and back, and attacks anyone who points them out.

### Boss2 – Spider Queen (no name yet)



"In the Vedic philosophy of India, the spider is depicted as hiding the ultimate reality with the veils of illusion.”

“Indra's net is used as a metaphor for the Buddhist concept of interpenetration, which holds that all phenomena are intimately connected. Indra's net has a multifaceted jewel at each vertex, and each jewel is reflected in all of the other jewels”

“In some schools of Buddhism and in Hinduism, the image of Indra's net is a metaphor for the emptiness of all things, and at the same time a metaphor for the understanding of the universe as a web of connections and interdependence”

“If a person comes into contact with a Live spider by default, he or she will get new clothes as per local belief in Hindu customs.”

Spider Queen is opening portals to the asura world, symbolizing Indra’s Net and its connectivity.

* Basic phase 1: spider clusters
* Basic phase 2: to shoot laser webs from sprite extra legs
* Spell 1: Indra’s Net
* Final spell: Emptiness
* Round
* Diamond

## Mechanics

## Player

* Day / night meter? Core passive changes?
* Day Core: Starlight special
  + Star bombs explode in different places, destroying enemies and bullets
* Night Core: Trick or treat special
  + Pumpkin shaped field consumes all bullets around player
* Add life gen points? or just extra lives
* Both cores deplete if special used when hit
  + Twilight special (signifies immortality)
* Cores can be leveled with exp points
  + Boosts up the special OR makes passives better
  + Night Core boost: spawns additional rotating pumpkins to magic circle

## Enemies

* Static enemies (walls) with health bars

## Score system

* Certain score threshold yields an extra life
* Scorepoint multiplier from core levels?

# In development 0.1.1

## Todo

URGENT

SUGGESTED

MINOR

* Stagecomplete doesn’t show up
* Night core didn’t deplete when player lost life
* player/enemy sprite disappears sometimes when interrupted in invul (force sprite enable if not invul, make sure its not disabling the whole object)
* start researching a way to make new terrain images because I didn’t log what program I used
* add life 1-up pickup and reqs for getting it
* differentiate between difficulties in hiscore file
  + make a “twilight leak” from the core, signifying the asura’s path
* add color tint to night special
* visual minitoast for score get
* visual minitoast for corepoints get
* visual minitoast for enemy damage take
* make BGM for Boss1
* new dialog box
* intro text explaining the start of the plot

**See if possible / necessary:**

* control bullet sprite size by transform
  + 3 sizes
* Dialog autoscroll speed determined by char count of lines
* fix homing bullet by removing the offset and having it check if its reached its destination, then vanishing (or change lerp to translate so it doesn’t slow down near target)

# Features in versions

Arrow keys – move  
Z – ok/ shoot

X - special

Shift – focus

# 0.0.1

* Player movement inside the play area
* Player single projectile shooting
* Player special attack system (kills everything hostile on screen)
* Player hit detection, lives, life reduction
* Player invulnerability function and animating
* Gameover handler on player die
* Restart function on gameover
* Enemy spawner and wave timer handler
* Stage timer
* Enemy movement with patterns
* 2 Enemy bullet types (homing/nothoming)
* 2 Enemy bullet patterns (single, scaling circle pattern)
* Boss enemy derived from normal enemy
* 2 boss phases that change according to health
* Exp point objects created on enemy die
* Exp point hit detection on player
* Player exp gain function
* Parallax tile scroller
* Sprite placeholders for player,enemy,playerProjectile,enemyProjectile,expPoint
* MainMenu with title textholder and start button
* GameOver screen with overlaid images and button to restart
* Player lives text indicator
* Player exp/expCap text indicator
* Player special core image indicator
* Boss life slider indicator
* Stage timer text indicator
* Current stage text indicator on stage start
* Current wave text indicator
* Stage completed indicator on boss death
* Dialog UI

# 0.0.2

* Singleton gamecontroller
* Can switch between attack types
* Sound controller
* Stage initializes when navigating from main menu
* Xp accumulates stat points that can be spent on power, speed or life generation
* Wave class
* Bullet pattern class
* Made creating wave types and patterns more easy
* Redid dialog system
* New bullet pattern: spiderweb
* Bullet movement class
* New bullet pattern: giant web
* Visible player hitbox
* Add new projectile art
* Concept art of first boss
* Bullet animations (spiderweb)
* Singleton UICanvas

# 0.0.3

* Multiple boss healthbars
* Special Charge Slider
* Rescaled exp point collider for easier collection
* Core charge points
* Special attack triggers when core meter is full
* When all projectiles are destroyed they turn into core points
* Stop stage timer when enemy encountered
* Upgradable stats affect bullet behavior accordingly
* Player special attack draft
* Programmer art for boss X pos indicator
* Indication of boss healthbars
* Added boss name indicator
* Added boss X position indicator
* Boss pattern toast when “super phase”
* Special attack toast

# 0.0.4

* Fixed next wave spawn time not checked correctly
* Can programmatically switch stage
* Magnetic collection of points
* Reworked enemy spawning
* New bullet type: laser
* Simultaneously spawning enemies
* Waves now refer to an arraylist of spawnpositions
* Added new movementpattern to center enemy horizontally
* Waves can spawn almost simultaneously
* Boss specific patterns have identifier
* Fixed boss movementpattern and pattern referencing the same old one (create a new pattern from template if used more than once)
* When enemy dies all bullets shot by that enemy are destroyed
* Added focus mode -> hitbox becomes visible, player movement speed halves
* Can’t collect points while special attack is on
* Magnetic range activates now only in focus mode
* Fixed boss healthbar resetting when next healthbar
* Boss phases change top layer of background
* Toplayer alpha fading out/in
* Core charge bar depletes when special attack uses

# 0.0.5

* New Phase class to handle multiple simultaneous patterns
* Boss damage resistance when super phase
* New bullet pattern prototype: spiral
* Boss special phase handling moved to Phase class
* Boss pattern shooting is handled in Phase
* Phase turned into monobehaviour
* Tweaked giantweb pattern so that each layer has less bullets
* Tweaked enemy movement speed and acceleration to be a little faster
* Tweaked enemy movement patterns to wait until target position is reached instead of seconds for easier movement speed tweaking
* Library for bullet sprite types
  + + Set sprite function (shape, effect, color)
* Enemy movement pattern handling moved to phases
* Phasing loop condition recognition hotfixed with force break while
* Bullet acceleration
* New pattern “weave” shoots lasers (boss1)
* Initial Boss art (boss1)
* First static sprite for boss1
  + Added sprite setting function to library
* Created a 3D environment for later graphical testing
  + + Lightsource
  + + Perspective camera
* Boss music played when boss battle

### NOTES

* Sprite color can’t be controlled by renderer

# 0.0.6

* Patterns reference phase when checking if should end
* Removed unnecessary multiplier from enemy movement speed calc
* New bullet pattern: curtain
* New bullet movement: find player mid-movement
* Magnetic range now permanent, scales up/down when focus/no focus
* Everything resets to Stage 1 start at restart
  + Full reset
* Transition to next stage works
  + Soft reset
* Added boss identifies to wave
* Patterns customizable from phase class with a function
* Can clear 2 stages
* Phase execution finally responsive
* New movement style: Teleport
* New movement pattern: Swing (rotates around centerpoint)
* As shooting patterns ,enemy movement patterns also have a customization function now to reduce the need for pattern cases if not recyclable
* Enemy sprite flips according to movement direction
* Enemy sprite float in place animation (to be patched)
* All projectiles are destroyed when player takes a hit
* Started concepting a new boss
* New bullet art: spear
* Widened play area

### NOTES

Refrain from creating monobehaviours with “new”

# 0.0.7

* Unity bug caused left arrow not to work
* Enemies grant less core points, destroyed bullets grant none
* Statpoints are powered up when meter threshold reahed
  + Toast appears when powered up
* Fixed stats not resetting when restart
* Fixed boss namepanel not resetting when restart
* Pause function
  + Restart at pause menu
* Character spawns weapons when powerup, loses them when powerdown
* Focus mode now focuses the weapons
* New bullet pattern: Cluster
* New bullet art: fireball
* New programmer art: boss 1 sprite
* New programmer art: speech bubble
* Tweaking dialogue graphically
* Programmer art for weapons (pumpkins)
* Added sound effect for enemy shooting
* Layover graphic for core meter
* Added char selection screen
* Menu translated to keyboard
* Menu selection controllers

# 0.0.8

* Made stage 1 rough music
* Started designing stage 1 spawns
* Stage Handler handles all stage events
* Mid-boss template
* Mid-boss comes, shoots and goes
* Homing weapon for player
  + Finds nearest enemy
* Player Night Core Special: Trick-or-treat done
  + Null field that destroys all bullets and enemies inside
* Core meter redesigned to have two sides
* New core points: Night core points, Day core points
* Visual indication of which core in use
* Starlight special attack base
* 3Denvironment camera layer
* Tree sprite testing for 3Denvironment
* Parallax can be handled from stagehandler routine
* Pause menu translated to key input
* Added environment camera movement and rotation
* Stage environment duplicated 2 times so camera can move lower
* Reworked menu controller to check context when menu is opened
* Stripped down coroutines that broke the initialization
  + WaitUntils are not affected by timescale changes
* Level now restarts and initializes perfectly
* Acceleration/deceleration on environment
* Added template for stage end
* Added score gain for corepoints with multiplier
* Visual indication for score and hiscore
* Difficulty menu for main menu

# 0.1.0 (2022)

* Refactored and reformatted the project
* Decoupled a lot of components from GameControl and UI
* Fixed stage initialization after restart
* Inherited boss phase routines from Phaser so it doesn’t get crowded
* Upscaled stage canvas
* Changed all normal textassets to TMPro
* Added toggleable invulnerability indicator to boss hp bar
* Moved boss init from enemylib to stage init
* Added a difficulty modifier to stage init that affects enemy shootspeed and bullet count in patterns. Difficulties 1, 3, 5, 7
* Added a difficulty selection screen to main menu
* Fixed character movement speed, wasn’t using deltatime so it was different between dev and build
* Fixed midboss timer

# 0.1.1

* Moved stagehandling routines from handler switch to their corresponding files
* Handle stage switching by reloading the same scene but swap scripts
* Reworked dialog handling to be more flexible
* Made options menu with Autoscroll toggle, BGM and SFX volume control
* Added gameover menu
* Options JSON save/load
* Added options menu to main menu
* Hiscore JSON save/load
* Damage gives score
* Spiral pattern spawned too slowly on build because Unity was limiting the framerate. Added unlimiter and disabled vsync in Game.Start();