

# METEORA

## CS 4300 Game Project

Created by:

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# What is Meteora?

Meteora is a side scrolling, top down shooter set in space where the player controls a small spaceship that goes through a variety of hazardous environments. The player will fly through an asteroid field, fight waves of enemies in deep space and eventually make their way into a space station where they will confront a Boss enemy that is an AI controlling the space station.



# Team Details

Basically who we are and what our delegated tasks were

Tahsin Ahmed Prottoy, 201821063

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**What we didn't implement**

# Gameplay Style

The gameplay style is that of a basic horizontally scrolling spaceship shooter.

Gameplay consists of the player controlling a small spaceship that advances to the right at a constant pace and shoots a variety of projectiles at entities that mainly come from the right side of the game window while dodging obstacles that appear in their way. The player progresses towards a goal or boss that exists at the far right side of each level.

# Asset Sources

I Never got time to actually go in a do slides, shaders took AGES and so did the boss loop.

Good thing is literally everything is done

# Collisions

- Collision of player ship with power-up item adds power-up to inventory and destroys power-up
- Collision of player ship with any Non-invincible NPC negatively affects player health if player does not have invincibility and destroys NPC
- Player bullets destroys meteor of any size, bigger meteors need more bullets for destruction. Meteors may drop power-ups when they are being destroyed
- Enemy bullets negatively affect players health upon collision
- Player bullets destroy enemy ships after sufficient damage



# AI and Raycasting

- Power-ups have smooth follow behavior
- Turrets can have either “static” 4 direction shooting, or "Target" Omni-directional shooting.
- Target uses raycasting to find the position of player
- Pull behaviour - blackholes pulls player ship towards it

# Bullets/Weapons

- Player ship is able to shoot bullets, and other special weapons such as Nova and Plasma
- Enemy ships are able to shoot bullets
- Keyboard Shortcut E to swap between bullets

# NPC's

- Enemy ships - moving
- Meteors - moving / standing
- Turrets - standing
- Boss entity

# Moving Tiles

- Throughout the game levels there are moving tiles that follow a certain path
- Entities can patrol

# HP / Damage

- Bullets from enemy ships and collisions with meteors can negatively affect player health
- When player health is zero game is automatically over
- Players can increase health by health power-ups

# Power-ups and Status Effects

- Player can pick up a life restore power up that adds 1 life point (increases health by 1)
- Player can pick up a Plasma that does more damage to meteors / enemies and shoots slower
- Player can pick up a Nova power up that blasts a ring of fire, and causes all meteors / enemies to be destroyed within the radius upon collision
- Enemy Nova expands from turrets as center points and inflicts a status effect

# Objects / Inventory

- Power-ups displayed in the inventory (top right corner) once collected

# Gravity / Acceleration

- Blackholes pull player towards them
- Player is at a constant acceleration towards the right



# Camera / World View

- Two camera views
- Pressing the keyboard shortcut 'O' switches between the two views
- One view follows the camera entity
- The second view follows the player ship
- The camera entity moves at a fixed speed along the level map

# Game Progression / Save

- All levels except level 1 (Asteroid Field) are locked at the initial start of game
- When a level is cleared, the game progression is updated to the next level
- If level not cleared and player dies, a save file is created.

# Save / Load Game

- Game automatically saves when player dies with info on level cleared (progress), control scheme (0 or 1) and difficulty setting (Easy, Normal, Hard)
- Load saved game from “Save / Load Game” menu option
- Everytime the game is recompiled, saves are reset

# Status Effect

- Chilled - reduces speed of player
- Ignited - lasts 2 seconds. applies effect of 1 damage per second
- Invincible

# Shaders

- Whenever our player is hurt (HP decreases), an invincibility component is created and the player ship flashes white for a time period.
- Shaders with status effect:
- Chill effect happens when player ship is hit by a chill/blue turret shot (NPC)
- If the “chill” status is in effect, player ship flashes cyan for a time period
- Ignite effect happens when player ship is hit by a ignite/red turret shot (NPC)
- if the “ignite” status is in effect, player ship flashes red for a time period

# Parallax

- Parallax effect implemented with dust cloud and starry sky progression

# HUD/ heads-up display

- After Starting a \*new\* game, you will be directed to the “Stage Select” user interface where all levels (locked/unlocked) are displayed including the level editor.
- This helps keep track of game progression at any given time.
- At the top of the game play screen, there is a menu with player health (HP), Weapon in use and amount of ammo, current Status effects if any.
- There is also an inventory box which can hold up to 3 power-ups at a time.

# Sounds

- All sounds are taken from open source websites such as [opengameart.org](http://opengameart.org) and [freesounds.org](http://freesounds.org)
- When the game is launched, the menu music plays. This is for all menu, selection interfaces
- Each level has a unique background sound
- A sound is played whenever a bullet is fired, player is hurt (hp decreases), player hits a game decoration (hp stays the same), an NPC is hit (has hp component), an NPC dies (hp=0), an item (i.e power-up) is picked up.
- When a level is cleared a sound plays and after the player wins the boss fight a different sound is played
- If the player should die (hp=0) at any point, game over sound plays.



# Options

- Choose game difficulty:
- Easy (double player health + More Power Ups)
- Normal (normal player health)
- Hard (half player health + less Power Ups)
- Choose control scheme for gameplay actions: WASD or Arrow keys
- Music Volume, Sound Effects Volume (not separate options)

# Level Editors

- In the works
- Desired effect:
- Can use keyboard shortcut to select pieces to add
- Mouse listener to select position on grid to add piece
- To toggle Grid display - keyboard shortcut G

# Lighting Effects

- Your game must contain some sort of lighting effect

## Extra features

- Black hole effect - implements a pull behavior towards player entity
- This slows down player acceleration while in effect range

# What we never finished

- LEVEL EDITOR
- LIGHTING EFFECT

# Conclusion

# METEORA

Thank you for Listening!

# Sources

Player Spaceship

Space Shooter (Redux, plus fonts and sounds) by Kenney Vleugels ([www.kenney.nl](http://www.kenney.nl))  
downloaded from: <http://creativecommons.org/publicdomain/zero/1.0/>

Tilesets and Sounds

Downloaded from open source libraries [opengameart.org](http://opengameart.org) and [freesound.org](http://freesound.org)