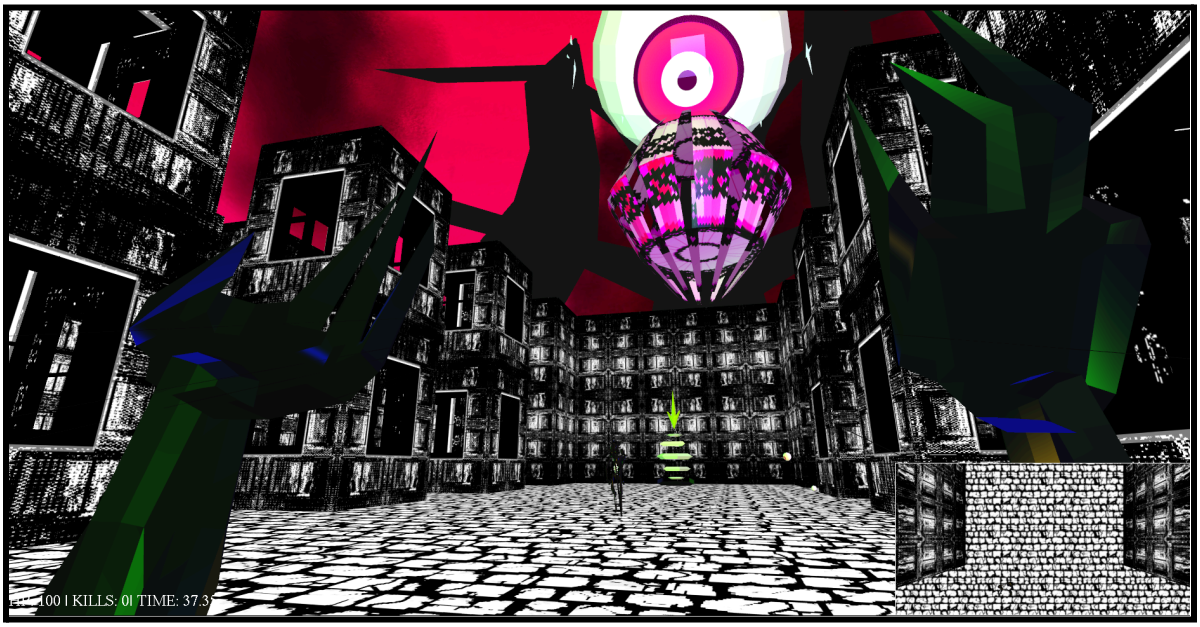
PANPSYCHISM

1.) Overview:
    a.) Game Name: PANPSYCHISM: THE NEW REALM
    b.) Hunter Brown, Section 02, A2 – Dolphin Mission 2
2.) Screenshots:



3.) How to run the game:
    a.) Double click and run clearTAGEclassFiles.bat
    b.) Run buildTAGE.bat
    c.) Run compile.bat
    d.) Run run.bat for server defaults (IP: 192.168.1.19, Port: 6010, Protocol: UDP)
    e.) OR: Run run_no_parameters.bat to be prompted to enter IP, Port, and Protocol in console
    f.) Enjoy!
4.) How to play, what happens, and how to get score:
    a.) Throughout this game you will find many mobs, specifically “Ghouls”
    b.) To gain score (kills), you can left/right click to shoot at them, if you hit them, you will kill them and they will disappear

c.) If they shoot you, however, you will take damage

d.) If you lose all 100 of your HP, the game is over

e.) There is a timer as well to see how fast you can beat the game

f.) To beat the game, reach one of the next level pads (green circles with arrow above)

5.) All Available Controls:

i.) Movement:

(1) Keyboard

(2) W: move forward

(3) S: move backward

(4) A: strafe to the left

(5) D: strafe to the right

(6) LSHIFT: hold to sprint

(7) SPACE: jumps (couldn't get working fully)

(8) Controller/Gamepad:

(9) Left Analog X-Axis: Pan to the left/right (yaw left/right)

(10) Left Analog Y-Axis: Move forward/backwards

ii.) Camera(s)/Looking:

(1) Main View:

(a) MOUSE: The entire main view you can move using your mouse!

(b) Old Camera Movement

(Still usable, but unnecessary if you have a mouse):

(i) Up Arrow: Look up (pitch up)

(ii) Down Arrow: Look down (pitch down)

(2) Minimap:

(a) T/G: Pan up and down Z axis on minimap

(b) F/H: Pan left and right X axis on minimap

(c) R/Y: Zoom in and out Y axis on minimap

(3) Gamepad:

(a) Right Analog X-Axis: Adjust Azimuth value for main cam

(b) Right Analog Y-Axis: Adjust Radius value for main cam

iii.) Interaction:

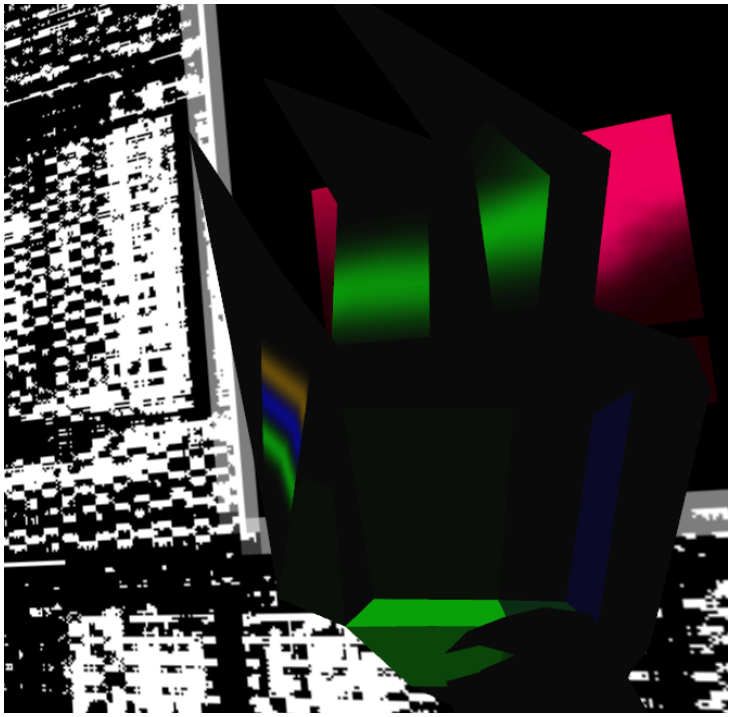
(1) Left/Right Click shoots a bullet orb!

(2) Q: Toggle the world Axis lines in the middle

(3) ECS: While in the window, press ESCAPE to toggle mouse-recentering (allows user to move mouse out of the window now)

6.) Static & Dynamic Lighting:

a.) 3 static lights:



i.) Green

ii.) Blue

iii.) Yellow

b.) 1 dynamic light:

i.) A Green light gets set to the player's location and gets enabled upon the player winning the game (reaching the end of the level)

7.) Changes to the Network Protocol:

a.) Added rotation message to send across clients

b.) Tried to add a shoot/Entity update message

8.) Things I changed within TAGE (and added JavaDocs for):

a.) Camera.java - yaw/pitch

b.) Added ShootingController

c.) Adjusted PhysicsObject, JBulletPhysics Object, PhysicsEngine, JBulletPhysicsEngine
d.) GameObject - jumping/sprinting/hp/gravity
e.) HUDmanager - code moved around but nothing really changed - was experimenting to add images

9.) Game Details:
a.) Genre: First-Person Shooter
b.) Theme: Dreams/Spiritual Experience/Psychological Horror
c.) Dimensionality: 3-Dimensional
d.) Activities: Exploration, Combat

10.) Where to Find All Project Requirements:
a.) External Models:
i.) All of the models in the game are created by me, so anywhere you look you will see the fulfillment for this requirement
ii.) All are also UV-unwrapped, textured by myself
b.) Networked Multiplayer:
i.) After setting up the server and then running the clients as described in Section #3, you will be able to see each other's avatar; all rotations and movements will be sent through the server and you'll be able to see them looking around and moving
ii.) You can play the game in singleplayer or multiplayer and it functions the same (can also still win and kill enemies, take damage, etc.)
c.) Skybox:
i.) Look up!
d.) Terrain:
i.) If you'd like to see the terrain, walk outside of the map and to the end of the platform and look down (it's flipped upside down so you can see the inside of it for a trippy effect)
e.) Lights:
i.) You can see the reflections of the lights on your character, mobs, and the main sanctum in the backdrop of the game for example
f.) HUD:

i.) In the bottom left of the screen you can see a HUD that supplies update messages to the user about what's happening in the game as well as their current HP and Kill count

g.) Hierarchical SceneGraph:

i.) The entire sanctum backdrop and all of its objects (other than the "sanctum" object out of the rest) have their parent set to some other object and rely on its scaling / translation to be positioned / updated properly (such as rotation).

ii.) To see this, go towards the end of the level (to the left of where you originally are looking at you first load into the game)

h.) NPCs:

i.) I created a simple level creator that allows for hostile NPCs to spawn at designated locations; to see them, wander the map a bit - in the very next room from the first you will see the first "Ghoul" mob

i.) Physics:

i.) Press left or right click to shoot a bullet and see it bounce off the walls and flooring, or, go to a mob and let them shoot a bullet at you to attack you and you'll see it interacts with the environment

11.) Requirements I Could Not Get Working Fully:

a.) Networking:

i.) I didn't give myself enough time to implement the character-selection part of the networking requirement (choosing character at the start)

b.) Animation:

i.) My animations I made in Blender exported all weird and distorted, as you can see with any Ghoul mob type (however, it looks creepy and weird so I kept it in because it adds to the vibe)

c.) NPCs:

i.) I didn't implement an AI controller the way the professor intended for it, however, I have an EntityManager class I made instead that essentially has the AI Controller built inside of it

ii.) It does not update AI positions / attacks across multiple clients using a shared server

12.) Any Techniques That I Did That Went Beyond The Requirements:

a.) I had a lot of fun with this game, and implemented a multitude of things that were not required

b.) Custom MapManager/Level Creating System (2D array, different IDs, takes those IDs and creates them in the world at that location in reference to the others in the array)

c.) EntityManager that allows for collection of many different types of objects / enemies to be updated easily (and to add custom behavior)

d.) Bullet/Ammo System that allows for different ammo types and for firing bullet orbs

e.) Hitboxes added to avatar and mobs, used to see if bullets should damage them

f.) Invincibility window for player so they don't get spam damaged by bullets

g.) HP deduction for both avatar and mobs based on if hit by a bullet

h.) Kill counter for when you reduce an enemy's HP to 0 (also stops rendering them/no longer updates them)

i.) Player can lose if HP hits 0

j.) Player can win if they reach the next-level pad at the end (green pad with the arrow above)

k.) I added sprinting into my game

l.) I attempted to add jumping into my game w/o reliance on the TAGE physics engine

m.) I added strafing to my game

n.) I added a first-person view to my game, moveable with the mouse

13.) I am the only person who worked on this game, so all work is done by me.

14.) Assets I Created (Or Distributed VIA The Book's Ancillary Files):

a.) brick1.jpg - Source: Book's ancillary files

b.) All of the Models under assets/models are created by me.

c.) All of the Textures under assets/textures are created by me.

d.) Sounds:

i.) AttackSound.wav

ii.) GhoulAttackSound.wav

15.) Source & Evidence of Permission for Thing I Did Not Create Myself:

a.) The only asset I did not create myself is assets/sounds/FatalistLoop.wav - this was created by my friend Courte, in which she has given me full rights to use this in my game (I plan on

making this game in Godot and more fleshed-out, and she wants to make music for that version of the game too for context).

b.) Here is the link to the song, found on her SoundCloud: https://soundcloud.com/tfwdbtbwr/fatalist

16.) Here are the two RVR-5029 lab machines I used to conduct my testing:

a.) ECS-TEKKEN

b.) ECS-SPACEQUEST