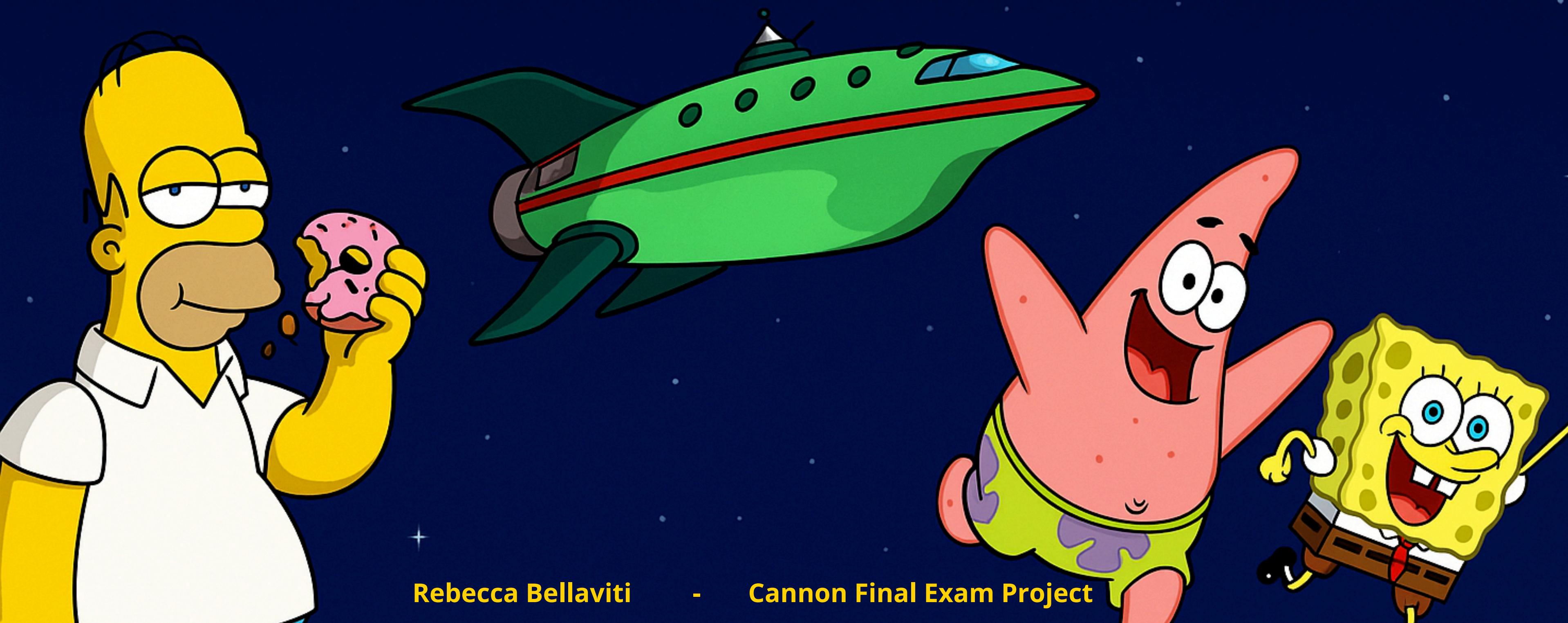


# TOONTANKS



Rebecca Bellaviti

- Cannon Final Exam Project

# ABOUT THE GAME

- 01 Gameplay and game design
- 02 Project's file organization
- 03 Details of implementation
- 04 Most important functions
- 05 Testing and debugging
- 06 Possible improvements

# Game Design

- 01** Game concept:
  - Classic artillery challenge with modern twists
  - Themed worlds: Simpson, Futurama, Spongebob
  - Short, self-contained levels promoting experimentation
- 02** Level Design
  - Gradual difficulty progression
  - Level 1: learn tank control & ammo physics
  - Level 2: dynamic obstacles, trajectory + strategy
  - Level 3: teleportation & multiple obstacles, full skill integration
- 03** Player Experience
  - Variety of weapons: multiple strategies
  - Hall of fame rewards
  - Encourages timing, resource management and spatial reasoning

01

main.py

02

/screens

03

/images

04

/sounds

05

/fonts

06

/constants

07

physics.py

FILE'S  
ORGANIZATION

ORGANIZATION

# ARMED ZONE



Bullet



Bomb



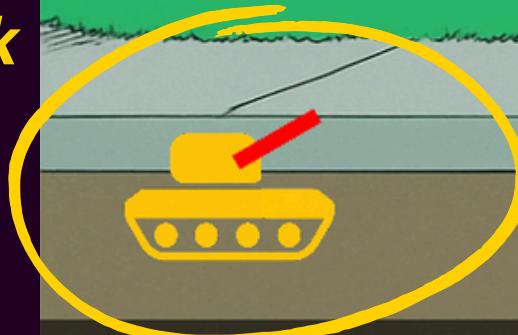
Laser

# LEVEL 7: SIMPSON

Rock



Tank



Angle: 30°

Power: 15,

Ammo: BULLET,

Shots: 7

Hud

Perpetio



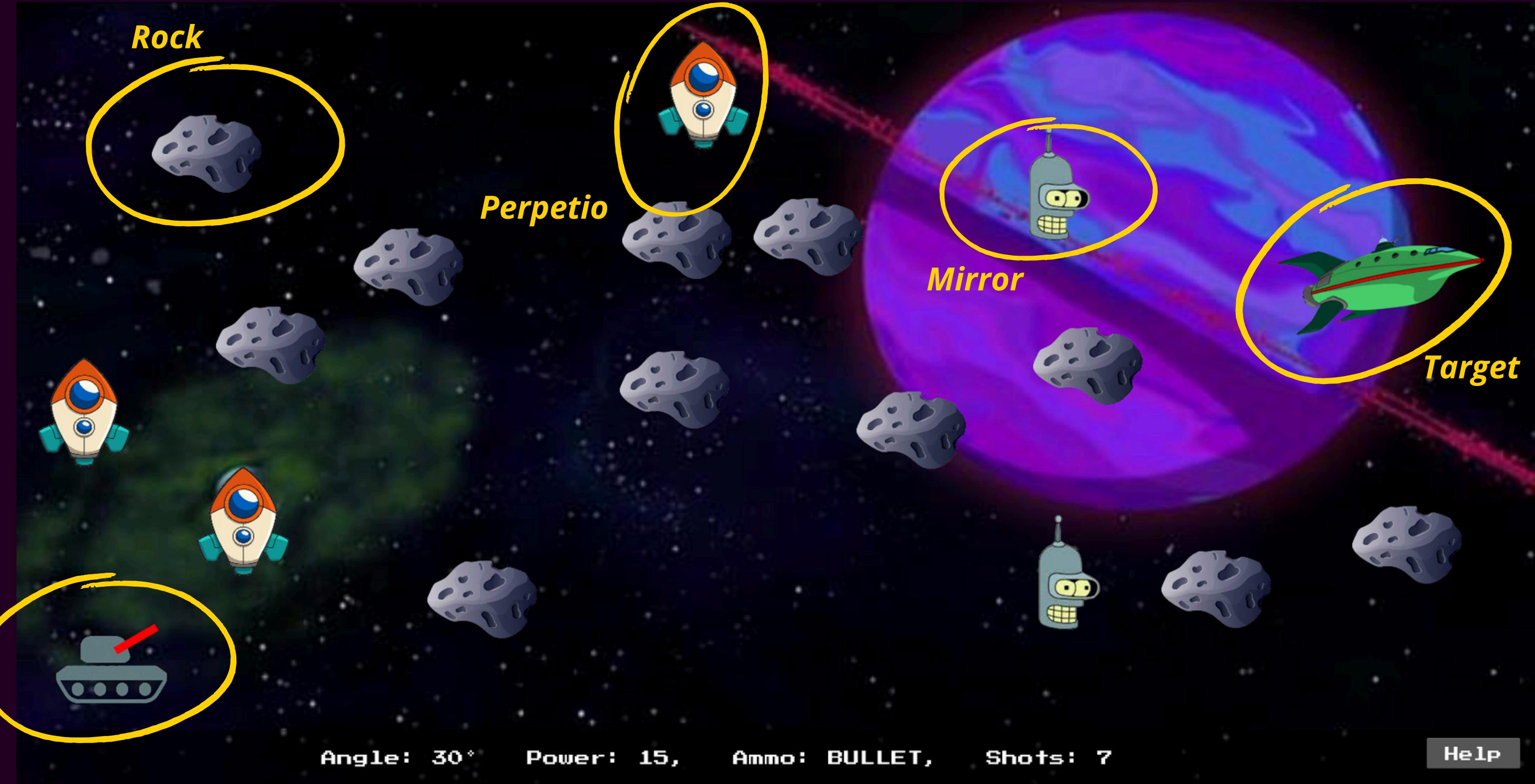
Help

Button

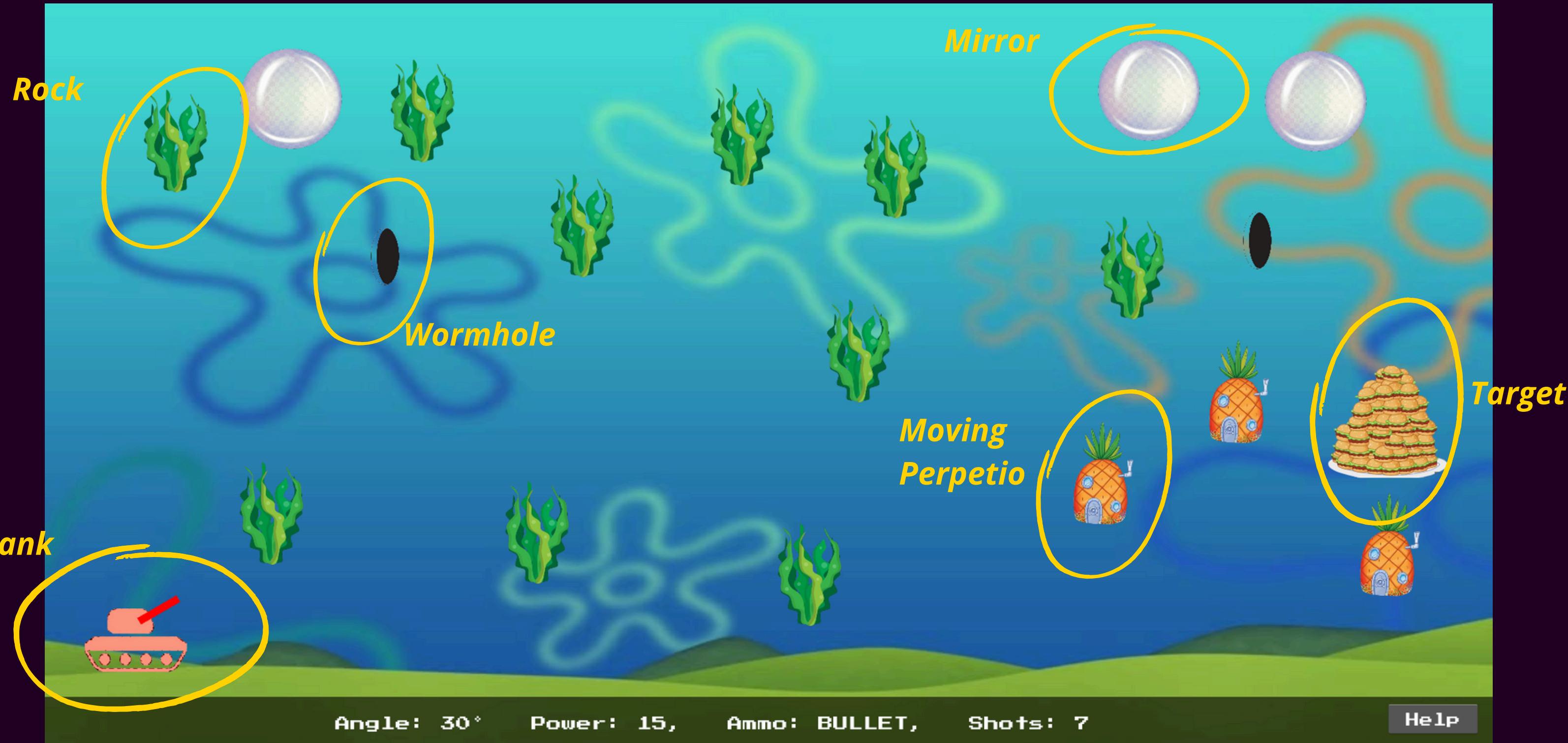
Target



# LEVEL 3: FUTURAMA



# LEVEL 3: SPONGEBOB



# most used functions

- 01 move(): to update the position on ammunitions
- 02 fire(): to control firing logic of tank
- 03 check\_collision: control whether a projectile encounters an obstacle or target
- 04 update\_canvas: for graphics

TEST

AND

DEBUG

## Bugs found:

- 01 Projectiles through obstacles
- 02 Crashes in level selection
- 03 Errors in laser reflection

## Solutions:

- 01 Updated collision logic
- 02 Managed screen boundaries
- 03 Synced canvas & widgets

01

Python (v. 3.12.10)

02

Kivy (2.3.0)

03

Python and Kivy official documentation

04

Visual Studio Code

05

AI assistant

06

Canva

Languages and Tools

# Future Improvements

## Current limitations:

- 01 Simplified tank mechanics
- 02 Only 3 levels: limited replayability
- 03 Hall of fame is shot only
- 04 Deprecated property of allow\_stretch

## Future improvements:

- 01 New levels and puzzle mechanics
- 02 Customizable difficulty settings
- 03 Advanced scoring
- 04 More assets

THANKS FOR  
THE ATTENTION

REBECCA BELLAVITI  
COMPUTER PROGRAMMING, ALGORITHMS AND DATA STRUCTURES, MOD.1