

PREZIT (SURVIVAL SHOOTER GAME)

by

Adavelli Rohan Reddy 20BRS1270

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Dr. Ummity Srinivasa Rao

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ROBOTICS**



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Vandalur – Kelambakkam Road

Chennai – 600127

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BONAFIDE CERTIFICATE

Certified that this project report entitled “**PREZIT (SURVIVAL SHOOTER GAME)**” is a bonafide work of – **ADAVELLI ROHAN REDDY (20BRS1270)** who carried out the Project work under my supervision and guidance for **CSE2039 – FUNDAMENTALS OF ARTIFICIAL INTELLIGENCE**


Dr. Umitty Srinivasa Rao

Assistant Professor (Senior Grade)

School of Computer Science and Engineering (SCOPE),

VIT University, Chennai

Chennai – 600 127.

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ADAVELLI ROHAN REDDY

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INTRODUCTION

Scratch is a coding language with a simple visual interface that allows people to create digital stories, games, and animations. Scratch is designed, developed, and moderated by the Scratch Foundation, a non-profit organization.

Scratch promotes computational thinking and problem-solving skills; creative teaching and learning; self-expression and collaboration; and equity in computing.

In the game created for this project using Scratch, the motive of player is to –

- survive the enemy attacks,
- shoot bullets and
- kill enemies before they touch him and deplete his health.

Player can use arrow keys to move and rotate, use number keys to switch guns and space to shoot

CONTROLS

- ↑ - Move front
 - ↓ - Move back
 - ← - Turn left
 - - Turn right
 - 1 - Switch to Pistol
 - 2 - Switch to Machine Gun
- Spacebar - Shoot bullets

ACTIONS

- Move front or back
- Turn left or right
- Switch guns
- Shoot bullets

STATE SPACE

A State space is the set of all states reachable from the initial state.

States => Coordinates: $x = [-240, 240]$, $y = [-180, 180]$; Direction: $[-180, 180]$

FOR PLAYER –

Start State => $x = -184$, $y = -2$

Goal State => Bullet touching enemy (temporary), no enemies left (final)

FOR ENEMY –

Start State => $x = 250$, $y = [-170, 170]$

Goal State => Player's position

WORKING LOGIC

- When game is started, player will be at the coordinates $x = -184$, $y = -2$ and will have a pistol gun with health bar full (lives = 3) and score 0.
- If '2' is pressed, the costume is changed to player with a machine gun and '1' to shift back to pistol
- Pistol has double the damage of machine gun.
- When 'space' is pressed, bullet is released one after another and firing rate of machine gun is higher than pistol but the accuracy of machine gun is lesser than pistol.
- There are 2 enemies where 1st one has 3 in 4 chances of appearing and other one 1 in 4 chances.
- Enemies appear randomly at $x = 250$, $y = [-170,170]$ and move towards the player's location.
- If a bullet touches an enemy, based on the damage of the gun the enemy's life is reduced
- When enemy life becomes 0, it is killed and based on the enemy the score is increased.
- If an enemy touches a player his health bar is decreased and he reappears randomly at $x = -184$, $y = [-170,170]$.
- When the health bar is completely depleted, game stops and backdrop is changed to 'Game Over' screen where final score is displayed.

COSTUMES

PLAYER –

Pistol -



Machine Gun –



EMEMY –

Enemy 1 -

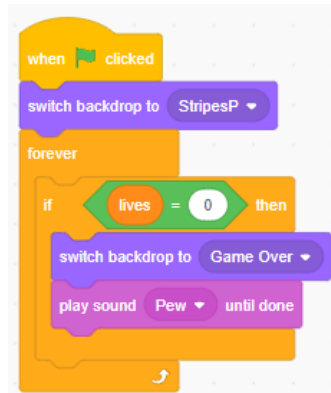


Enemy 2 -

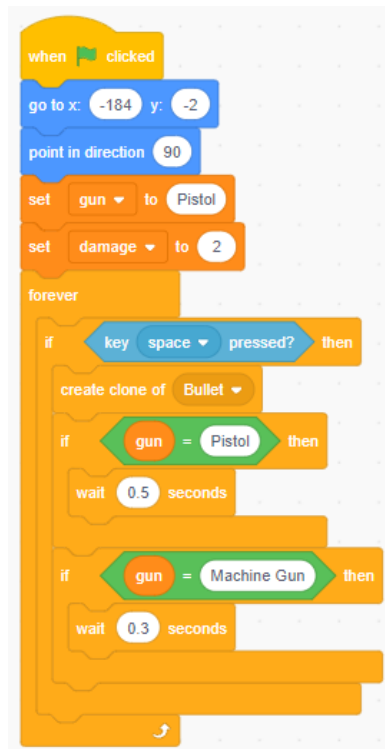


CODE

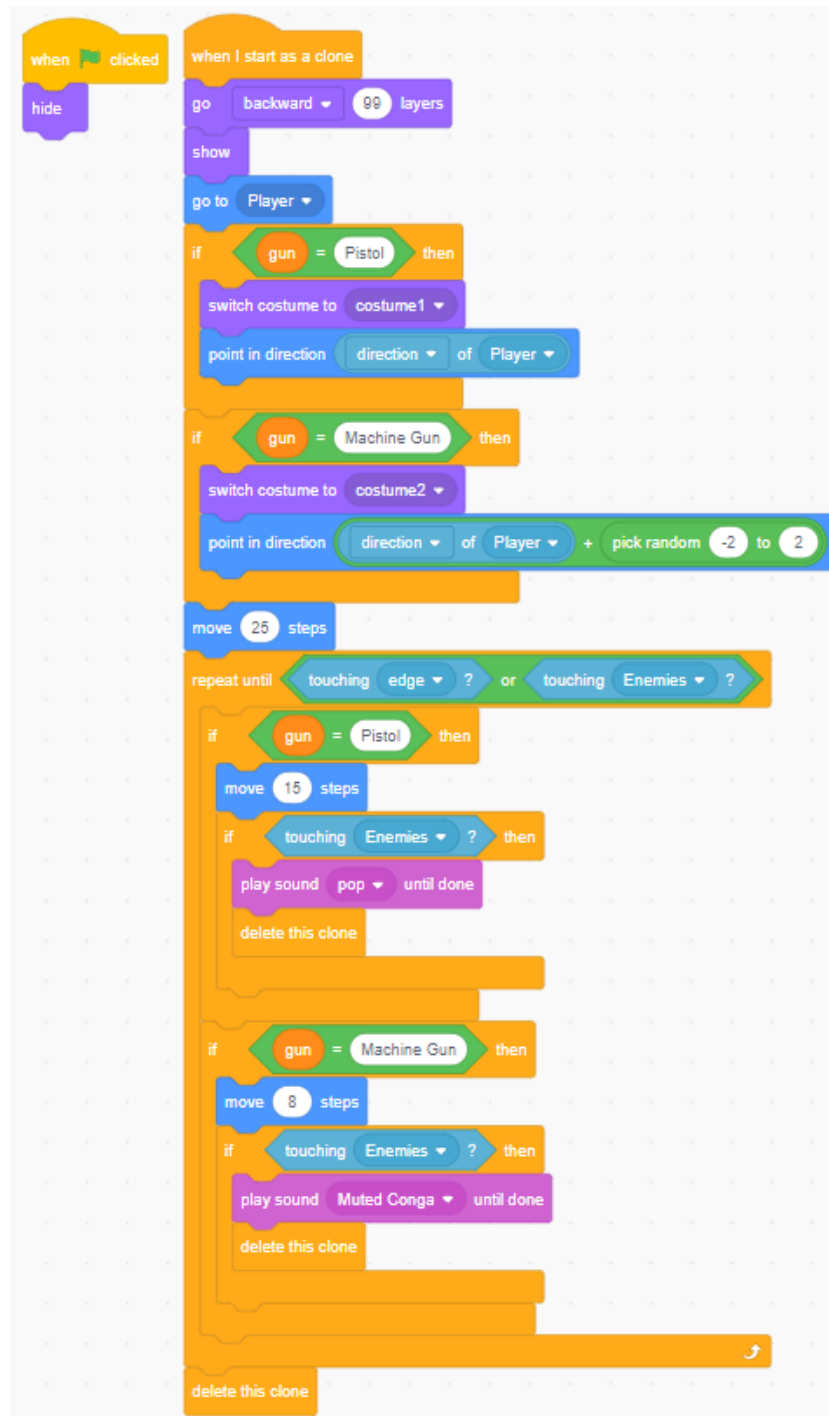
BACKDROPS -



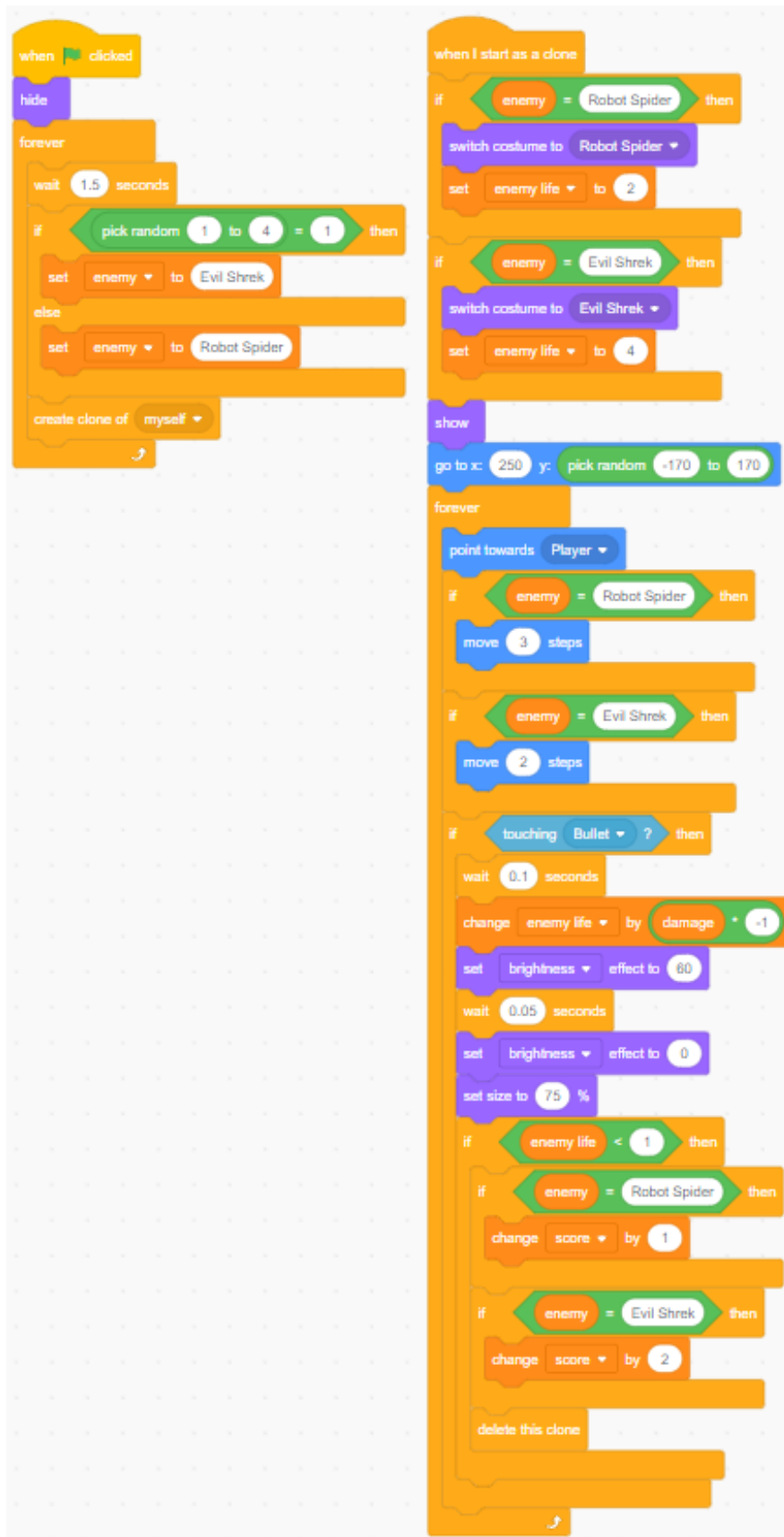
PLAYER -



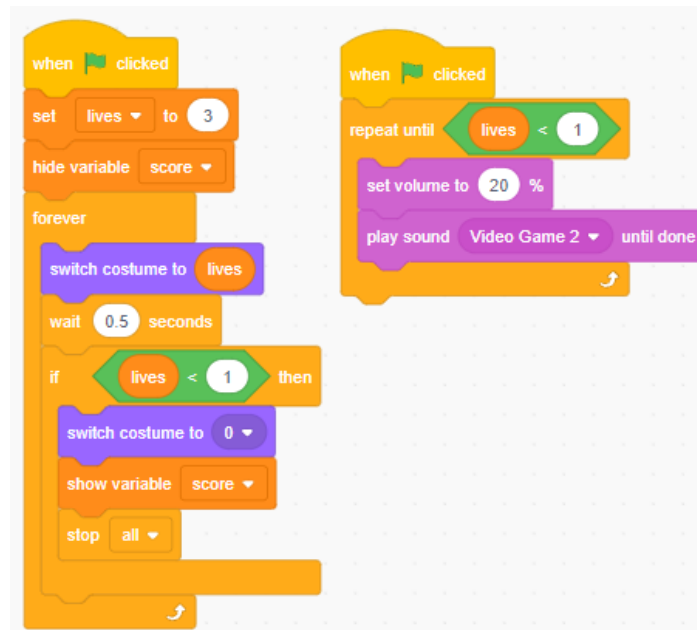
BULLET -



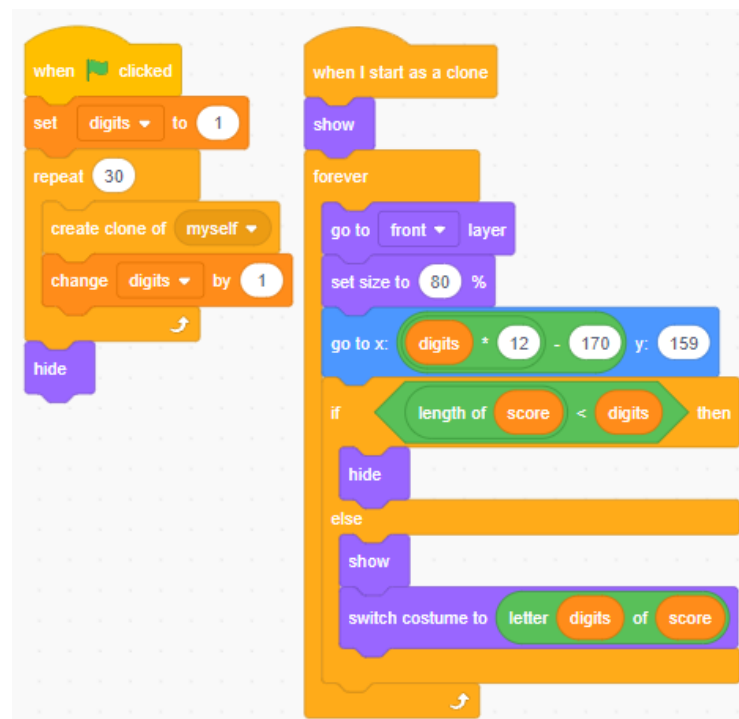
ENEMIES -



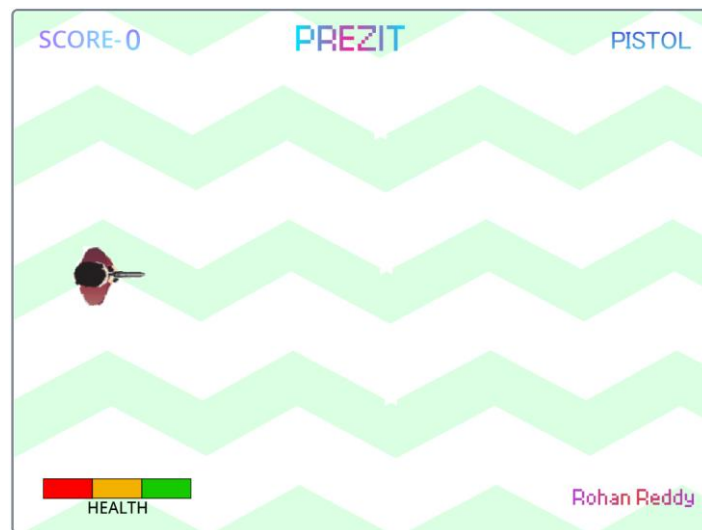
HEALTH -



SCORE -



SIMULATION





GAME LINK

<https://scratch.mit.edu/projects/676807397>

FUTURE SCOPE

- Multiple levels can be created
- After a particular score, the stronger enemy can appear more frequently
- A store can be introduced
- Power-ups based on cash collected can be introduced
- More guns can be added
- More enemies with different speed and health can be added
- Multiplayer option can be created

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