INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN COMPUTER & COMMUNICATION ENGINEERING

INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA

Impact Factor: 8.379

PacMan Top-Down Shooter Game

Shivam Dhole[1], Mukund Kulkarni[1], Kunal Bele[1], Ali Shaikh[1],Swapnali Salunkhe[2]

Diploma Student, Dept. of CSE, Sanjay Ghodawat Polytechnic, Atigre, Kolhapur, India[1]

Lecturer, Dept. of CSE, Sanjay Ghodawat Polytechnic, Atigre, Kolhapur, India[2]

ABSTRACT "Pac-Man Top-Down Shooter" is a fast-paced action game that combines the classic gameplay of Pac-Man with modern shooter mechanics. Players take control of Pac-Man as he navigates through a maze-like environment, avoiding ghosts and collecting pellets to gain power-ups and weapons. With a top-down perspective and challenging enemy AmI, this game offers an exciting and unique take on the iconic character's adventures. Get ready for a thrilling and intense experience as you embark on this exciting new journey with Pac-Man.

KEYWORDS: Evolutionary Algorithm, Multi-layer Perceptron, Pac-Man, Neuroevolutionary, Real-time Computer Games

I. INTRODUCTION

"Pacman Top-Down Shooter" is an exciting and unique game that combines the beloved gameplay of the classic Pacman game with the intense action and top-down shooting mechanics of this game together players control Pacman as he moves through a maze-like environment, fighting enemies with array of weapons The game, which also collects guns and power-ups, features a top-down perspective, allowing players to see the whole maze with its obstacles and enemy energies. The maze is filled with various bullets that players must collect in order to earn points and progress through the game. In addition to guns, there are also power-ups scattered throughout the maze that can temporarily increase Pacman's speed or firepower. Players must use these power-ups strategically to defeat enemies and progress through the game. The enemies in "Pacman Top-Down Shooter" are varied and difficult. They range from simple ghosts that move predictably, to more advanced enemies that require quick reflexes and precise aiming to defeat. Players must use their weapons and power-ups wisely to take down these enemies and advance to the next level. The game also has a variety of weapons that Pacman can use, including guns, grenades, and other explosives. Each weapon has specific strengths and weaknesses, and players must choose the right tool to succeed in the task. Overall, "Pacman Top-Down Shooter" is a fun and action-packed game that combines the best features of the classic Pacman with the dynamism and challenge of a top-down shooter the gun comes together Players of all skill levels will enjoy the fast-paced gameplay, strategic challenges, and sensational stories of classic games.

"Pac-Man Top-Down Shooter" is a game that puts a new spin on the classic Pac-Man formula by addingshooter mechanics and a top-down perspective. In this game, players take control of the iconic yellow character as he navigates through a maze-like environment, collecting pellets and power-ups while facing off against the notorious ghosts.The game features challenging enemy AI that will require players to think strategically and move quickly to avoid being caught. With a variety of weapons and power-ups at their disposal, players must use all their skills to defeat the ghosts and clear each level. Whether you are a longtime fan of the Pac-Man franchise or a newcomer looking for an exciting and challenging game, "Pac-Man Top-Down Shooter" offers a unique and thrilling experience. So gear up, get ready, and let the adventure begin!

II. RELATED WORK

There have been several related works that have combined elements of the Pacman game with other genres, such as shooting games.One example is "Pac-Man and the Ghostly Adventures," a 3D platformer game that features Pacman in a world filled with ghosts and other enemies. The game includes both platforming and combat elements, allowing players to jump, run, and fight their way through various levels.Another related work is "Pac-Man 256," a mobile game that combines the classic Pacman gameplay with an endless runner game style. In this game, players must navigate Pacman through an endless maze while avoiding obstacles and ghosts and collecting power-upspeak-Man

Championship Edition 2" is another game that combines Pacman gameplay with modern mechanics. This game features fast-paced action, high-score challenges, and unique gameplay mechanics, such as the ability to create long chains of pellets and power-ups.Finally, "Pac-Man Vs." is a multiplayer game that features single-player Pac-Man and up to three other players controlling ghosts. This game encourages teamwork and strategy as the ghost players must work together to catch Pacman while avoiding his attacks.All of these related works showcase the versatility and enduring popularity of the Pacman franchise, as well as the potential for innovation and experimentation within the game's core mechanics.

As a language model, I do not have access to a specific "Pac man top-down shooter" project to refer to. However, I can provide some general information on related work in the field of video game design and development.Pac-Man is a classic arcade game released by Namco in the 1980s.It has since become a cultural icon and has inspired numerous sequels, spin-offs, and adaptations across various platforms.Top-down shooters are a sub-genre of shooting games where the player's viewpoint is from a top-down perspective. The gameplay typically involves controlling a character or vehicle and using weapons to shoot down enemies while avoiding obstacles.

III. PROPOSED ALGORITHM

Set a game environment: Create a 2D grid-based game world with walls, power supplies, and enemies. Pac-Man is the enemy position in the world of sports.

Starting the game: Set up the game mechanics like scores, lives, and timing. Create a game loop that updates the game world and checks for encounters and events.

Using Player Control: Allows the player to use the arrow keys or WASD to access Pac-Man. When Pac-Man pairs with a power-up, set the timer for a specific amount of time that Pac-Man can't destroy and can shoot and attack enemies.

Enemy AI Implementation: Create an enemy AI that moves in a random direction but changes direction if it encounters a wall or Pac-Man. When an enemy confronts Pac-Man, reduce Pac-Man's life.

Use Shooting Mechanics: If Pac-Man can't destroy it and shoots, make a projectile that goes where Pac-Man is looking. If the projectile collides with an enemy, increase the player's score by damaging the enemy.

Add extras: Add more power-ups that give Pac-Man abilities, such as increased speed or more powerful projectiles. Add a boss enemy that requires multiple hits to defeat. Add levels of different game worlds and enemies.

Using the game on the mechanic: When Pac-Man runs out of lives, complete the game and determine the final score. Allow the player to resume or stop the game.

Make the game better: Make the game more efficient by reducing redundant statistics, optimizing data structures, and implementing more efficient algorithms.

Testing the game: Test the game to make sure it works as intended and is fun to play. Make any necessary changes based on player feedback.

IV. CORE TECHNOLOGY

JAVA

Java is a high-level, object-oriented programming language originally developed by Sun Microsystems and now owned by Oracle Corporation. First released in 1995, it has since become one of the most popular programming languages in the world. Java is platform-independent, meaning it can run on any operating system that has a Java Virtual Machine (JVM) installed. The JVM is a software layer that allows Java code to run on different hardware and operating systems without modification. This makes Java an ideal choice for developing cross-platform applications, such as mobile apps, web applications, and enterprise software.

Java is designed to be a simple, yet powerful language that is easy to learn for beginners, but also has the capabilities to support complex programming tasks. Its syntax is similar to that of other C-based languages, such as C++, C#, and Objective-C. Java code is compiled into bytecode, which can be executed by any JVM, making it very portable.One of the key features of Java is its automatic memory management, which makes it easy for developers to create and manage

objects without having to worry about manually allocating and deallocating memory. Java also includes a large library of pre-built classes and functions, called the Java Standard Library, which makes it easier to write code for common tasks, such as file I/O, network communication, and data manipulation.

Java has also become a popular language for developing server-side applications, particularly with the advent of frameworks such as Spring and Hibernate. These frameworks make it easier to develop and maintain enterprise-level applications by providing pre-built components and patterns for common tasks, such as database access and transaction management.In summary, Java is a versatile, powerful, and platform-independent programming language that is widely used for a variety of applications, from mobile apps to enterprise software. Its simplicity, portability, and automatic memory management make it a popular choice for developers of all levels of expertise.

V. METHODOLOGY

Explain game mechanics and gameplay: Before you begin, it's important to decide what kind of game you want to play. You need to consider things like the player's objective, the enemies and obstacles they face, and the power-up bonuses they can get.

Choose a game engine: There are many game engines available for your games. When choosing a game engine, consider the features and requirements of your game.

Create game assets: Pac-Man top-down shooter game will need various assets like player sprites, enemy sprites, background images, sound effects, music, etc. You can create these properties yourself or use pre-created properties.

Create a game world: Start building a game world using your chosen game engine. This includes creating game levels, designing environments, and placing game objects.

Implement game mechanics: Once the game world is created, it's time to add game mechanics. This includes programming player movement, enemy AI, collision detection, and scoring systems.

Test and debug the game: After implementing the game mechanics, you need to thoroughly test the game to make sure it works as expected. This includes finding and fixing any bugs or bugs in the game.

Add polish and finishing: After testing and fine-tuning the game, add any new effects, sounds, music, and other finishing touches to make the game more appealing and beautiful.

Release and trade the game: Once the game is complete, you can release it on various platforms like the App Store, Google Play, or Steam. You will also need to market the game to attract players and make money.

VI. WORKING

Pac-Man is a classic top-down shooter game that was first released in the early 1980s. The game is played on a single screen where the player controls a character known as Pac-Man, who must navigate through a maze while avoiding enemies and collecting dots.The gameplay of Pac-Man is relatively simple. The player controls Pac-Man using the arrow keys or a joystick, and the character moves around the maze, eating dots as it goes. The objective of the game is to clear all the dots in the maze while avoiding the enemy ghosts.The four ghosts in the game, Blinky, Pinky, Inky, and Clyde, move around the maze in a predictable pattern, and they will try to catch Pac-Man if they get too close. If Pac-Man is caught by a ghost, he loses a life, and the game ends when all lives are lost.

Pac-Man has a few tricks up his sleeve to help him evade the ghosts. There are four power pellets in the maze that, when eaten, turn the ghosts blue and vulnerable. When the ghosts are blue, Pac-Man can eat them for bonus points.The game also features fruit and other bonuses that appear in the maze at various times. Eating these bonuses will give the player extra points.The game's graphics are simple, with a top-down view of the maze and the characters represented by simple sprites. The game's sound effects are also simple, with basic bleeps and bloops accompanying the action.A Pac-Man top-down shooter is a game where the player controls a character, usually a Pac-Man-like character, in a top-down view and shoots enemies.

Here is a general overview of how such a game might work:

Player movement: The player moves their character using the arrow keys or WASD keys on the keyboard. The player can move in any direction on the screen, avoiding obstacles and collecting power-ups.

Shooting mechanics: The player can shoot their weapon by pressing the space bar or another key. The weapon can be aimed in any direction and will fire a projectile in that direction. The player must aim and shoot at enemies while avoiding their attacks.

Enemy movement: Enemies move around the screen in patterns or chase the player character. They may also have their own weapons or special abilities that the player must avoid or overcome.

Power-ups: The player can collect power-ups that can enhance their weapon or give them temporary boosts such as invincibility or increased speed.

Level progression: The game may have multiple levels or stages, each with their own challenges and enemies. The player must complete each level to progress to the next one level.

Scoring: The player earns points for defeating enemies and collecting power-ups. These points may be used to unlock new weapons, abilities, or other features.
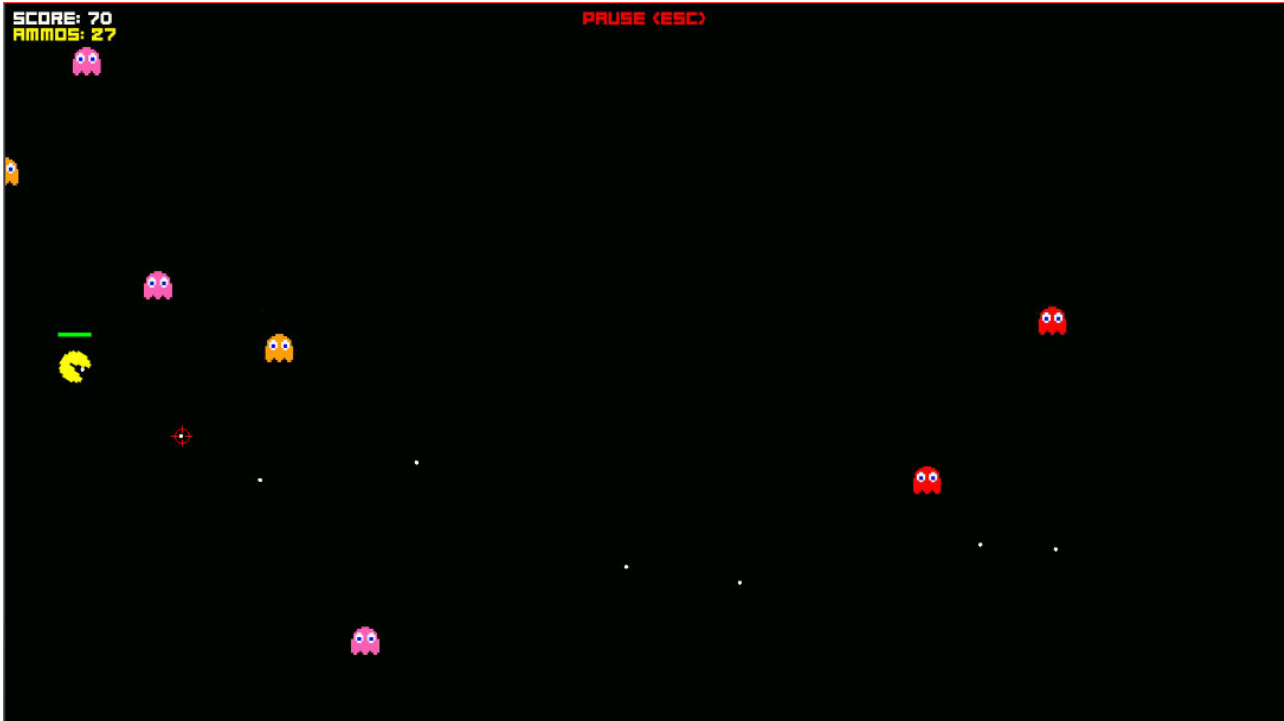
VII. RESULT
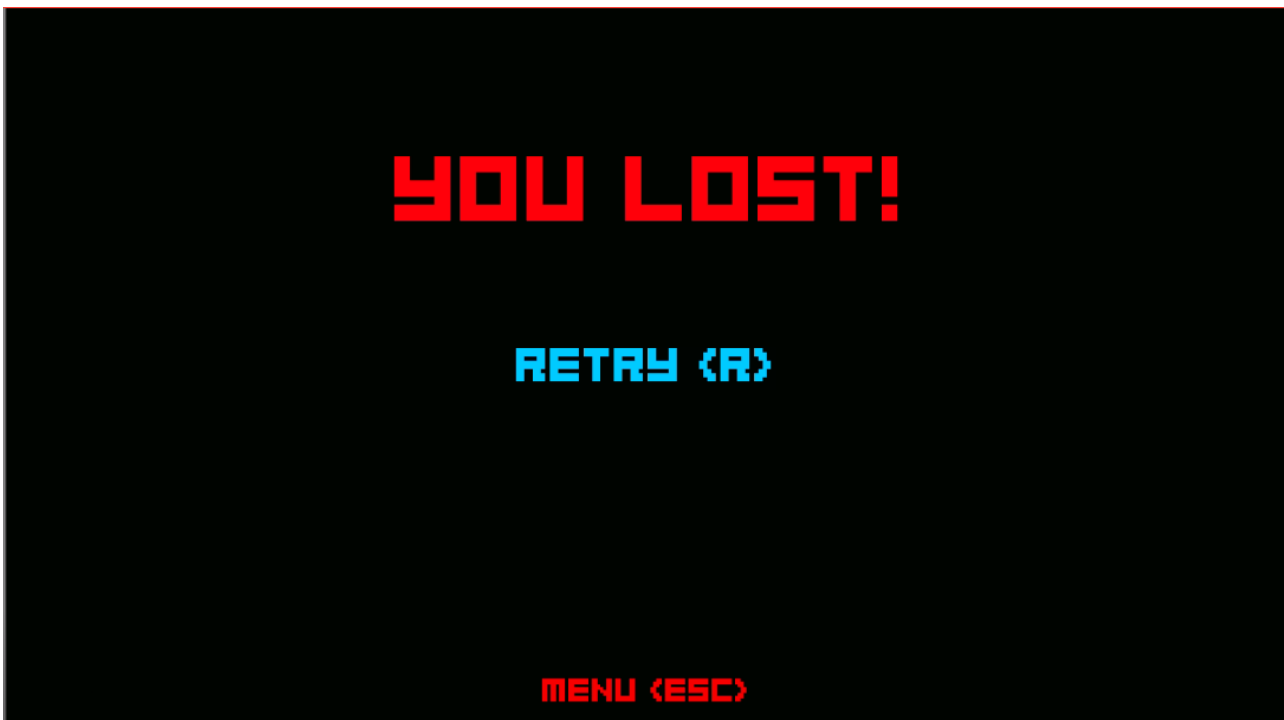

Fig.VII.a HOME PAGE
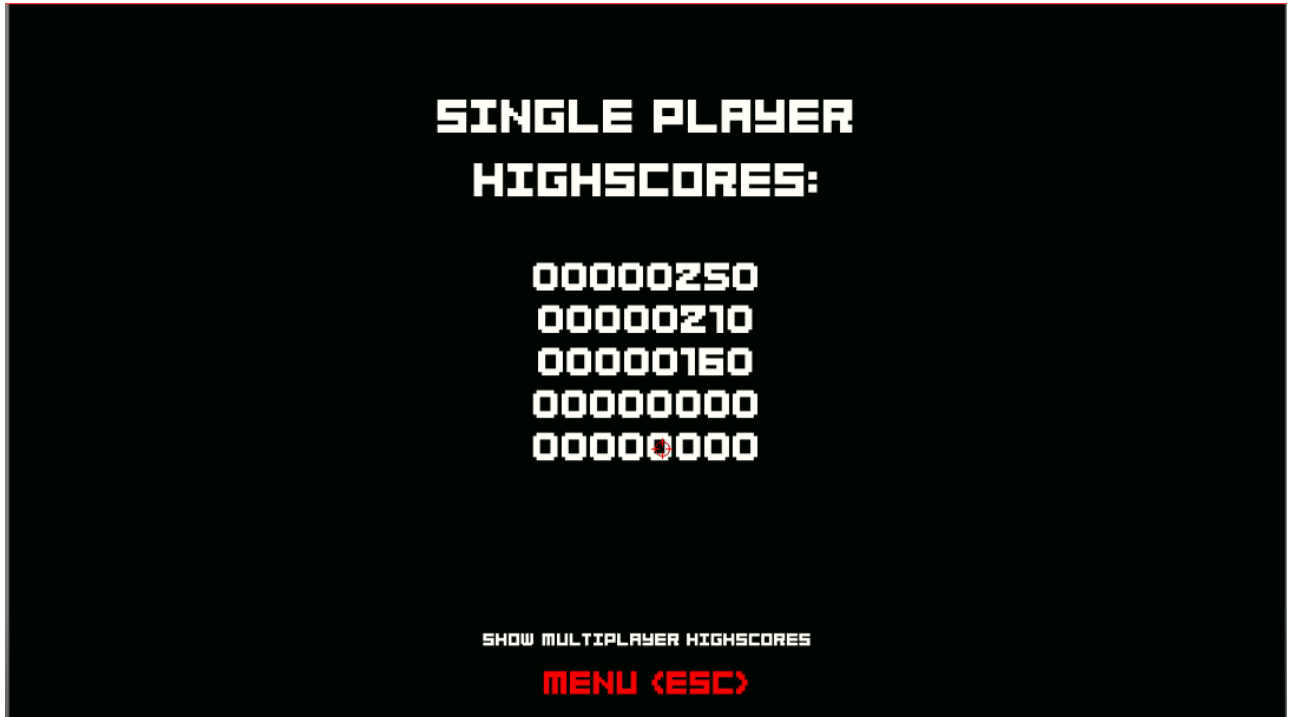
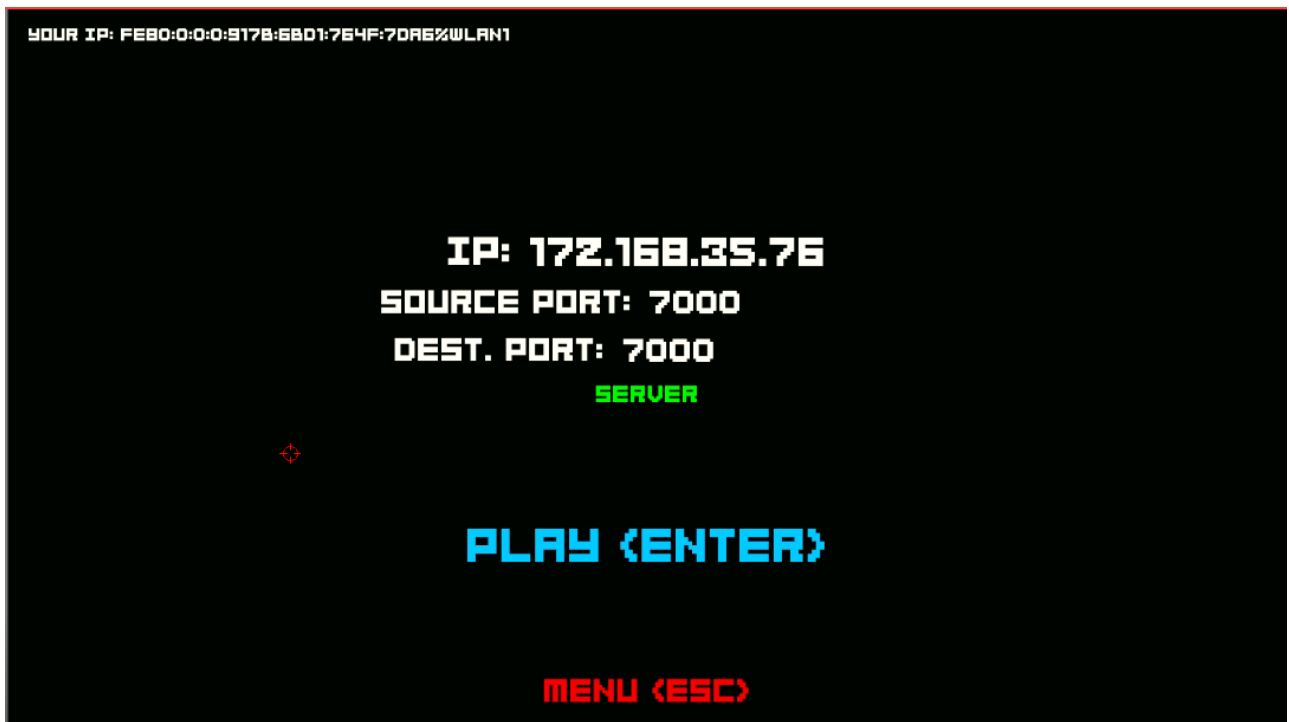Fig.VII.b Single Play

Fig.VII.c Game Over

Fig.VII.dHighscores

Fig.VII.e Multiplayer Login

VIII. CONCLUSION AND FUTURE WORK

In conclusion, building a Pac-Man top-down shooter can be an exciting and exciting project for game developers and enthusiasts. The game could incorporate elements of classic Pac-Man games, such as iconic characters and ghosts, while introducing new features such as weapons and abilities They could also be game-specific testing players in a variety of ways such as challenging enemy designs and boss battles.

FUTURE ENHANCEMENT-

- Add more types to enemies: In the original Pac-Man, each spirit had its own unique character, which added a new style to the game You can create additional types of enemies for your gun, each with n 'personal character and unique strength.
- Introduce power-ups: Eating certain orbs in Pac-Man will give Pac-Man temporary power-ups, such as increased speed or invincibility. You can also equip your gun with such an ability, giving the player a temporary advantage in combat.
- Use multiplayer functionality: Pac-Man is a game that lends itself well to multiplayer, and adding this feature to your shooter can make it more appealing to players. You can have players compete in various games, such as a death match or capture the flag.
- Create new layers: If your game only has one layer, players will get bored quickly. Consider creating new levels with new systems, enemies, and challenges to keep players engaged.
- Improve game graphics and sound: While gaming is king, improving game graphics and sound can help make it more immersive and enjoyable for players Consider upgrading the game update graphics and add sound and music to improve the player experience.

REFERENCES

1. https://www.reddit.com/r/tipofmyjoystick/comments/84166u/computer90s_mostly_top_down_pacmanlike_shooter/
2. https://en.wikipedia.org/wiki/Pac-Man
3. https://www.gamedeveloper.com/design/the-pac-man-dossier
4. https://pacman.fandom.com/wiki/Pac-Man

INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN COMPUTER & COMMUNICATION ENGINEERING

9940 572 462 6381 907 438 ijircce@gmail.com