

A Report on GAME HACKATHON 2024

Titled

“GameGen: Conquer Algorithmic Challenges in Gaming using Java”

Report Made by

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Group Member Description along with Lates Photo

Group member Name	Description of the person (Tell about yourself which best describes you as a person and as professional)
Shubham R. Pote	I'm Shubham Pote, currently pursuing my Master of Computer Applications (MCA) with a strong proficiency in Java, C++, and JavaScript. I am skilled in graphic design and adept at writing scripts to enhance software functionality and user experience. With a robust foundation in software development and a creative edge in design, I am passionate about integrating technology and art to build innovative solutions. I am eager to contribute my diverse skill set and knowledge to impactful projects and collaborate with like-minded professionals in the field.
Pratham Satpute	I'm Pratham Satpute. As a computer science student, I've been exploring the fascinating realm of machine learning, working on projects like image recognition and natural language processing. When I'm not coding, I love hitting the basketball court or hiking in the great outdoors. Recently, I've been experimenting with building my own apps and websites, honing my skills in web development and mobile app design. Now, I'm eager to take on a software development role where I can continue to learn and contribute to meaningful projects.
Akshit Nagrale	My name is Akshit Ramesh Nagrale and I am currently pursuing my MCA course from SPIT, Andheri. I have an avid interest in coding and software development. I have experience is making programs using html, JavaScript and also web development, that is both front end and backend. I am also interested in web designing.
Jayesh Patil	I'm Jayesh Patil ,deeply passionate about developing robust, efficient, and user-centric software solutions. I thrive on solving problems and creating elegant, scalable software architecture that meets the need of both clients and end-user .

	I prioritize continuous learning and growth, staying abreast of latest technology. I am dedicated to leveraging my skill and expertise to create innovative solution
Mohit salunkhe	I'm Mohit salunkhe ,currently pursuing a Master's in Computer Applications (MCA) from SPIT, Mumbai. With a passion for technology and its practical applications, I am enthusiastic about leveraging software solutions to address real-world challenges. I possess a strong interest in software development and continuously seek to enhance my skills by exploring new technologies. Proficient in programming languages such as Java and Python, I bring technical expertise to the project.

Group Photo with Name of the group.

BHAI - Ka - DRIVER



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1. Description of Game and Motivation

DESCRIPTION

- This Java application is a graphical game where the player controls a bowl at the bottom of the screen to catch falling eggs of different types.
- The objective of the game is to catch regular eggs and golden eggs while avoiding bomb eggs. Regular eggs increase the score, golden eggs provide bonus points, and bomb eggs decrease life.
- The game includes a dynamic background, animated egg movement, and user-controlled bowl movement using mouse and keyboard inputs.
- The game provides a visually engaging experience with colorful graphics, animations, and interactive controls that respond to player actions.

MOTIVATION

- Entertainment and Engagement: The game aims to entertain players with its simple yet challenging gameplay, encouraging them to improve their skills and beat their own high scores.
- Skill Development: Players can enhance their hand-eye coordination and reaction time by maneuvering the bowl to catch eggs of different types, adding an element of strategy and skill development.
- Reward System: The game incorporates a scoring and life system that motivates players to achieve higher scores and maintain their lives by making strategic decisions during gameplay.

- Interactive Learning: The game utilizes various Java programming concepts such as GUI, event handling, animation, and graphics, making it an interactive way to learn and apply these programming skills.

2. Tools used (Both frontend and Backend)

- ⇒ Frontend – Java's AWT Framework, Swing for GUI development,
- ⇒ Backend – Java programming language for game development

3. Detailed Innovation description

The "Ande ka Fanda" game is a fun interactive experience where you catch falling eggs using a mouse-controlled bowl. Different types of eggs give varying points: regular eggs add points, golden eggs give more, and bomb eggs end the game if caught. You can also use arrow keys to move the bowl. The game features colorful graphics, background music, and prompts for restarting when all lives are lost. It's designed to be engaging and easy to play, with dynamic challenges as you progress.

KEY FEATURES:

1. Game Mechanics:

- ⇒ Egg Types: Eggs come in different types - Regular, Golden, and Bomb. Each type has unique behavior:
- ⇒ Regular Egg: Adds points to the score.
- ⇒ Golden Egg: Adds more points than regular eggs.
- ⇒ Bomb Egg: Ends the game if caught by the bowl, reducing life count.

2. User Interaction:

- ⇒ Mouse Control: The bowl's position is controlled using mouse drag and drop, providing intuitive gameplay.
- ⇒ Keyboard Control: Arrow keys (VK_LEFT and VK_RIGHT) can also be used to move the bowl left or right.

3. Graphics and Visuals:

- ⇒ Custom Graphics: Uses custom-drawn shapes (e.g., eggs, bowl) and images (e.g., background, chicken).
- ⇒ Animation: Smooth egg falling animation with continuous updates and repaints.
- ⇒ Colorful Interface: Utilizes gradients and colorful elements for an appealing visual experience.

4. Game Lifecycle:

- ⇒ Start Screen: Displays an interactive start screen with instructions.
- ⇒ Game Over Handling: Detects when all lives are lost (`lives == 0`) and prompts the user to restart or exit the game.
- ⇒ Game Loop: Utilizes a continuous game loop (`run()`) to handle game logic and rendering.

5. Sound Effects:

- ⇒ Background Music: Plays background music during gameplay.
- ⇒ Sound on Interaction: Sound effects play when eggs are caught or when the game state changes.

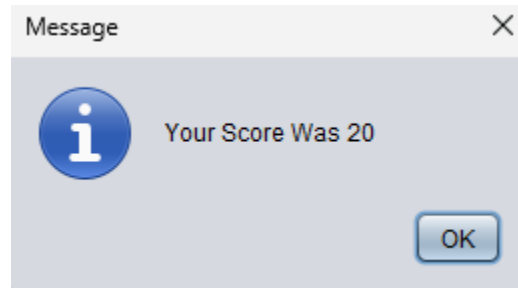
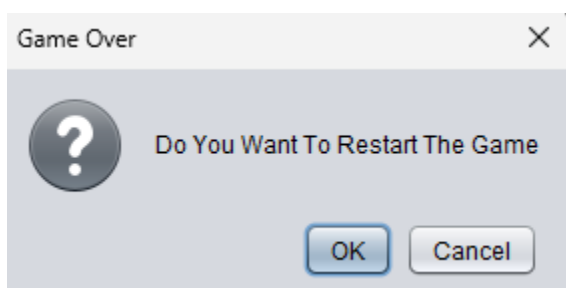
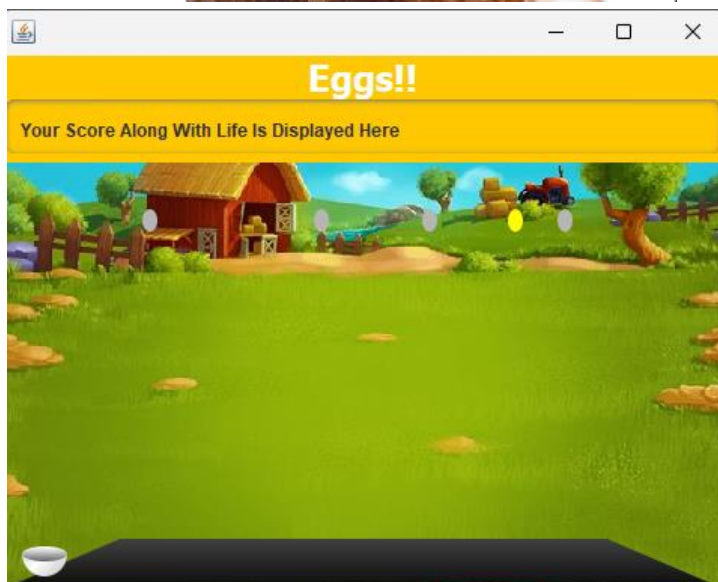
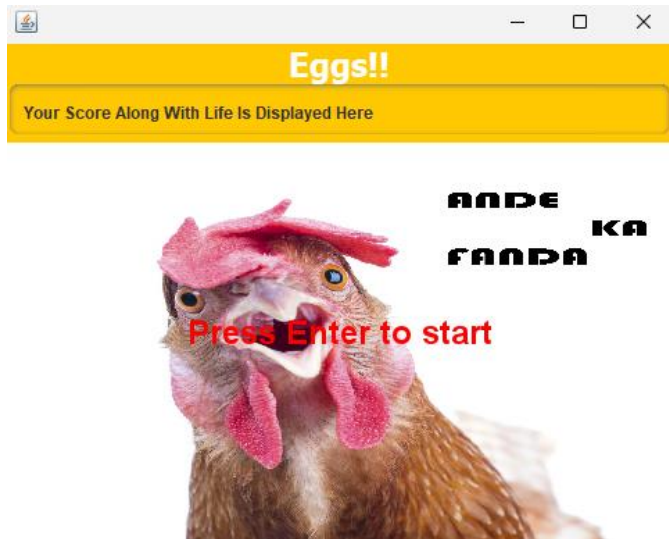
6. Dynamic Gameplay:

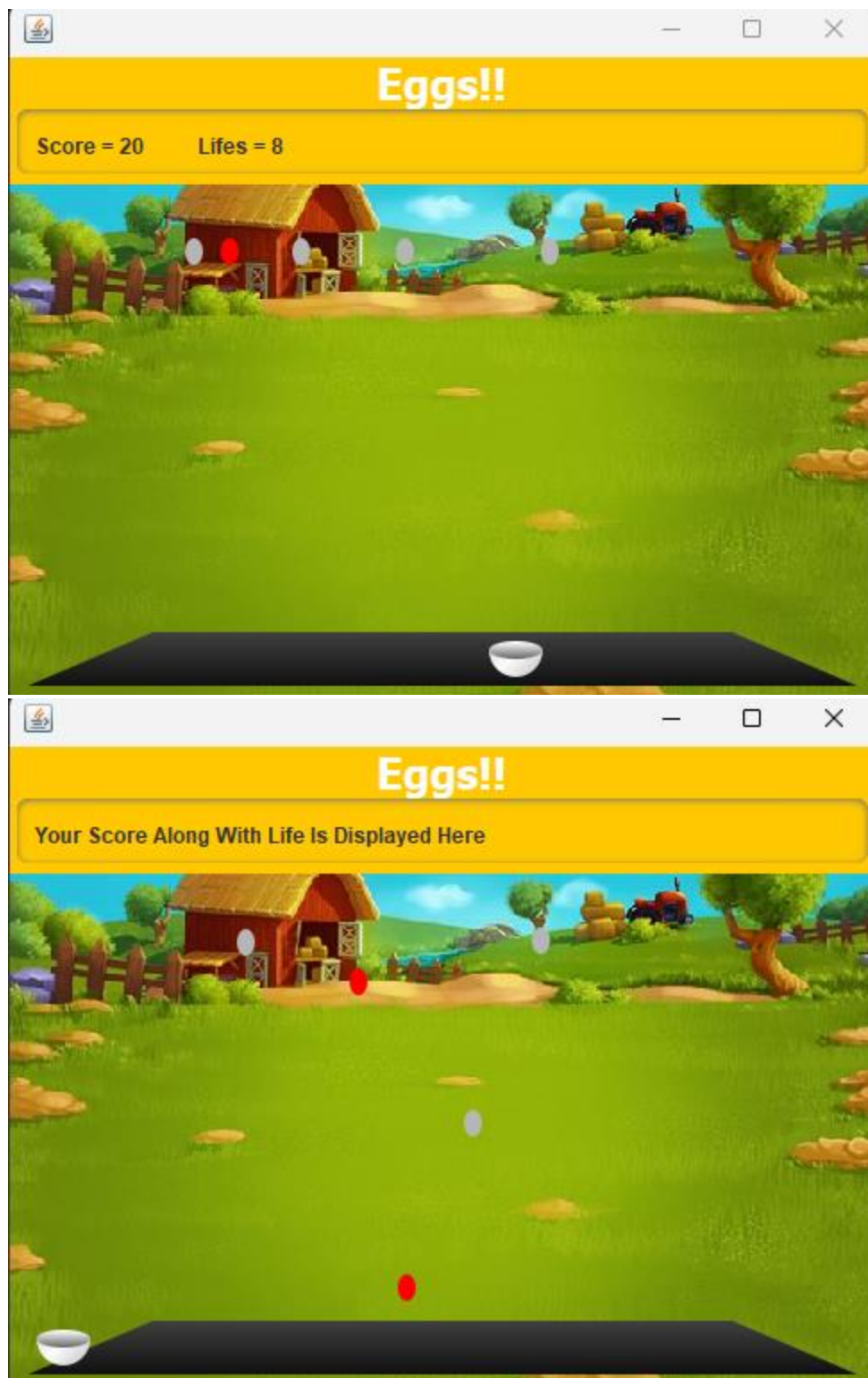
- ⇒ Randomization: Eggs are spawned at random intervals and positions, adding variability to gameplay.
- ⇒ Difficulty Progression: Increases complexity by adjusting egg falling speed (`speed`) over time.

7. Event Handling:

- ⇒ Event Listeners: Uses various event listeners (e.g., `MouseListener`, `KeyListener`) to capture user input and trigger game actions.

4. Screenshots





REFERENCES –

- Oracle's official Java Swing tutorials.
- "Introduction to Computer Graphics" by James D. Foley, Andries van Dam, et al., covers fundamental concepts of graphics programming.
- <https://gamedev.stackexchange.com/>
- <https://www.geeksforgeeks.org/java/?ref=ghm>
- YouTube channels and tutorials like TheChernoProject, RealTutsGML, and CodeNMore offer Java game development tutorials.