Gen - x – Games

Project Report Submitted

To

Gujarat University

In partial fulfilment of the requirements

forthe award to the Degree of

5 YEAR INTEGRATED MASTER OF SCIENCE (COMPUTER SCIENCE)

SEMESTER – III

GUIDED BY:

DR.BHUMIKA SHAH

SUBMITTED BY:

ANSARI YUSUF (3002)

DEVANG SHRIMALI (30113)

TARUN PANNEL (30112)

DEPARTMENT OF COMPUTER SCIENCE

GUJARAT UNIVERSITY, AHMEDABAD

YEAR: 2023-24

Department Of Computer Science

Gujarat University

Certificate

***R**oll No : 61* *Seat No :30002*

*This is to certify that Mr. **Ansari Yusuf Mo Yunus** student of Third Semester of 5 years Integrated M.Sc (Computer Science) has duly completed his project titled **Gen X Games** for the semester ending in December 2023, towards partial fulfillment of degree of 5 years Integrated M.Sc (Computer Science).*

06 - 01 - 2024
Date of Submission *Internal Project Guide*

Course Coordinator

Head of Department

Department Of Computer Science

Gujarat University

Certificate

Roll No : 123 *Seat No :30113*

*This is to certify that Mr.Devang shrimali student of Third Semester of 5 years Integrated M.Sc (Computer Science) has duly completed his project titled **Gen X Games** for the semester ending in December 2023, towards partial fulfillment of degree of 5 years Integrated M.Sc (Computer Science).*

06 - 01 - 2024
Date of Submission *Internal Project Guide*

Course Coordinator

Head of Department

Department Of Computer Science

Gujarat University

Certificate

Roll No : 122 *Seat No :30112*

This is to certify that Mr.Tarun Pannel student of Third Semester of 5 years Integrated M.Sc (Computer Science) has duly completed his project titled ***Gen / Games*** *for the semester ending in December 2023, towards partial fulfillment of degree of 5 years Integrated M.Sc (Computer Science).*

06 - 01 - 2024
Date of Submission *Internal Project Guide*

Course Coordinator

Head of Department

- **Acknowledgement**

I extend my heartfelt gratitude to all those who have been instrumental in the successful completion of this project. Their unwavering support and valuable contributions have been pivotal throughout this journey.

I would like to express my sincere thanks to Dr.Bhumika shah, our guide, for their guidance, expertise, and continuous support. Their insightful feedback and constructive criticism have been invaluable in shaping the direction of this project.Dr. Bhumika Shah's deep understanding of logical building, development tools like Github has been a guiding light throughout our project. Her innovative perspectives have added an extra layer of depth and creativity to our games.

A special note of thanks to Dr.Jyoti Pareek, the Head of the Department, for providing us with the necessary resources and a conducive environment for conducting our research and development and for being a source of inspiration and for creating an atmosphere that fosters learning, innovation, and accomplishment.

Lastly, I would like to express my gratitude to my classmates, seniors and friends for their unwavering encouragement and understanding throughout this academic endeavor.

This project would not have been possible without the collective efforts of everyone mentioned above. Thank you for being an integral part of this rewarding experience.

Index

❖ Project Profile

Title	Description
Project	**Gen-x-games**
IDE	**Visual studio code**
Team size	**3 members**
Team members	**ANSARI YUSUF (30002)** **DEVANG SHRIMALI(30113)** **TARUN PANNEL (30112)**
Guide	**Dr. Bhumika Shah**
Project duration	**6 Months**
Project Submitted	**Department of computer Science, Rollwala computer Center, Gujarat university Navrangpura, Ahmedabad**

❖ Project Description

Overview:

GEN-X-GAMES

"GENX-X-GAMES" represents a groundbreaking venture in the world of web-based gaming, a sophisticated platform meticulously designed to deliver an unparalleled and diverse gaming experience. This platform offers exciting games that not only entertain but immerse users in a world of challenges and excitement, each with its unique set of challenges, the platform ensures knowledge for users of all ages.It combines innovation ,skill, and fun to engage a diverse audience.

GEN-X-GAMES

is an web game with sub-games like :

1. Memory game

1) MEMORY GAME:

Description:

Welcome to the Color Memory Game, a delightful and engaging challenge designed to test and improve your memory skills! In this game, you'll be surrounded by a grid of colorful tiles. To play, just hit the "Start Game" button, and watch as the tiles light up in a specific order. Your task is to memorize this sequence and then click on the tiles in the exact same order. As you successfully complete each round, the game gets trickier with longer and more complex color patterns, offering a continuous challenge to keep you entertained.

The game's design is not only visually appealing with its vibrant colors but also adapts seamlessly to different devices, ensuring you can play anywhere. The Color Memory Game is not just about having fun; it's a fantastic way to give your brain a workout. Test your memory, challenge yourself with

increasing difficulty levels, and enjoy the satisfaction of improving your cognitive abilities. Click "Restart" to try again and see how far you can go in mastering the colorful sequences. Are you ready for a brain-teasing adventure? Start playing now and let the memory challenge begin!

- FEATURES:
- Colorful Tiles:
- Vibrant colors add a visually appealing aspect to the game, making it engaging and enjoyable.
-
- Progressive Difficulty:
- With each level, the complexity increases, providing an ever-growing challenge for players.
-
- Responsive Design:
- Play seamlessly on various devices. The game adapts to different screen sizes, ensuring a consistent experience.
-
- Brain Training:
- Exercise your memory and concentration skills in a fun and interactive way.
-
- Restart Option:
- Want to improve your score? Click "Restart" to reset the game and try again.
-
- Whether you're looking to unwind with a casual game or stimulate your cognitive abilities, the Color Memory Game is the perfect choice. Challenge yourself, track your progress, and enjoy the satisfaction of mastering the colorful sequences. Are you up for the challenge? Start playing now!

How to play

- Start the Game: Click "Start Game" to initiate the challenge. The game board will display a grid of colored tiles.

- Remember the Sequence: Observe as the tiles light up in a specific sequence. Memorize the order in which the colors appear.

- Repeat the Sequence: Once the sequence is displayed, it's your turn! Click on the tiles in the same order you observed. Can you recall the entire sequence?

- Level Up: Successfully completing a round advances you to the next level, where the challenge intensifies with longer sequences. Keep your focus sharp!

- Game Over: Make a mistake, and the game will end. Your final score is determined by the number of levels you successfully complete.

CONCLUSION:

In conclusion, the Color Memory Game provides an entertaining and intellectually stimulating experience for players of all ages. This game not only captivates with its visually appealing design but also challenges and enhances memory and concentration skills in a fun and interactive way. The progressive difficulty levels ensure that the game remains engaging and offers a continuous challenge to keep players on their toes.

As you navigate through the colorful tiles, memorizing and replicating sequences, you embark on a journey of mental agility and pattern recognition. The game's responsive design allows you to enjoy a seamless experience on various devices, making it accessible to a wide audience.

Whether you're seeking a brief mental break or aiming to boost your cognitive abilities, the Color Memory Game is a delightful choice. The option to restart and improve your score adds a layer of replayability, encouraging players to refine their memory skills with each attempt.

So, why not dive into the vibrant world of Color Memory Game? Challenge yourself, have fun, and witness the satisfaction of mastering increasingly complex color sequences. Start playing now and discover the joy of sharpening your mind through this captivating and visually appealing memory game!

❖ Tools and Technologies used

- **Tools :-**
  - ➢ Visual studio code
  - ➢ Notepad++
  - ➢ W3schools
  - ➢ Github
- **Technologies :-**
  - ➢ HTML
  - ➢ CSS
  - ➢ JAVA SCRIPT

Tools:

Visual Studio Code:

Description: Visual Studio Code is a lightweight yet powerful source code editor known for its speed and versatility.

Application in Project: Used as the primary integrated development environment (IDE) for coding, debugging, and version control, facilitating a seamless development workflow.

Notepad++:

Notepad++ is a powerful and feature-rich text editor that goes beyond the basic functionalities of the standard Notepad application on Windows.

W3schools:

W3Schools is a widely used online platform that provides extensive tutorials, references, and examples for web development technologies. It covers a broad spectrum of topics, including HTML, CSS, JavaScript,

GitHub:

Description: GitHub is a web-based platform for version control and collaboration using Git.

Application in Project: Served as a centralized repository for storing and managing project code. Enabled collaboration among team members, version tracking, and issue management.

Technologies:

HTML (Hypertext Markup Language):

- Description: HTML is the standard markup language used to create and design web pages.
- Application in Project: Implemented to structure the content and layout of the web-based game, defining the basic structure and elements of the game interface.

CSS (Cascading Style Sheets):

- Description: CSS is a style sheet language used for describing the presentation of a document written in HTML.
- Application in Project: Applied to enhance the visual presentation of the game, including styling elements, layout adjustments, and ensuring a consistent and appealing user interface.

JavaScript:

- Description: JavaScript is a high-level, interpreted programming language that enables dynamic and interactive content on web pages.
- Application in Project: Used for implementing the game's logic, interactions, and dynamic elements, making the gameplay engaging and responsive to user actions.

❖ proposed system

In the proposed system, we envision a comprehensive set of enhancements aimed at elevating the overall user experience and system efficiency. Key features include a user-friendly interface, leveraging advanced technologies to optimize performance, scalability, and flexibility. We prioritize robust security measures, integrating encryption and authentication protocols. Our system not only seamlessly integrates with existing technologies but also introduces innovative functionalities that are thoroughly explained in user training and adoption programs. With a focus on simplicity and effectiveness, the proposed system anticipates a significant positive impact, promising improved efficiency, heightened security, and a more intuitive user experience for seamless integration into existing infrastructures.

❖ Work Division

Ansari yusuf:

- Taking the lead in overseeing the entire project.
- Keeping track of technical details in the PowerPoint (PPT) presentation.
- Ensuring a cohesive integration of technical and research aspects across all games.
- Making critical decisions to maintain the project's overall integrity.
- Ansari yusus,s contributions extend to creating logic for Memory game.
- Yusufs leadership shines in the coding aspects, managing JavaScript

Devang shrimali:

- Leading the team in error detection and debugging processes.
- Contributing extensively to the content development for the research paper.
- he plays a crucial role in error detection and debugging, ensuring smooth functionality.

Tarun pannel:

- Leading the design efforts for all games, ensuring a cohesive visual identity.
- Creating the homepage that connects all games seamlessly.
- Taking the lead of game logo design, showcasing creativity on his own.
- Tarun, leadership is evident in the design realm, creating a visual identity for all games.

❖ Methodology

Begin by outlining the game concepts, functionalities, and user interactions for each game. Develop wireframes and sketches illustrating the game interfaces and mechanics. Determine the specific HTML elements needed for user interface components. Simultaneously, define the game logic and rules for each game in JavaScript. This phase involves conceptualizing the visual layout using CSS for a coherent and engaging user experience.

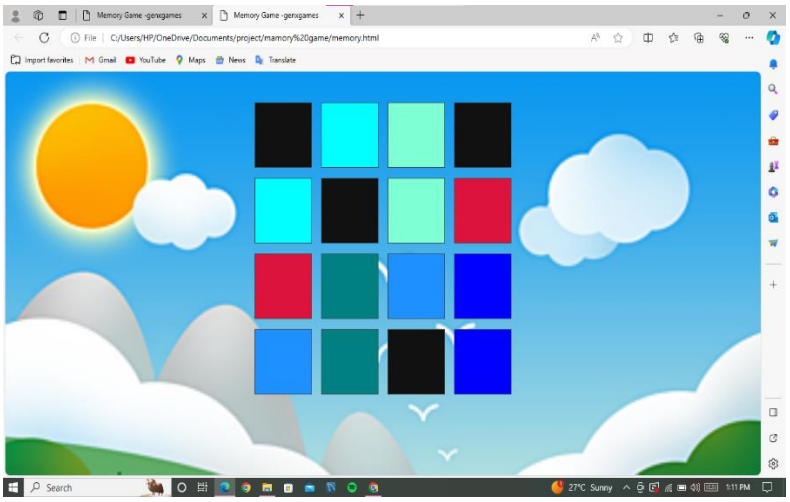
With the planning completed, proceed to implement the games using HTML, CSS, and JavaScript. Build each game iteratively, focusing on modular development for easier debugging and maintenance. Ensure responsiveness and compatibility across different devices and browsers. Integrate the game logic with the user interface elements, coding the functionalities for player interactions, scoring mechanisms, and game outcomes.

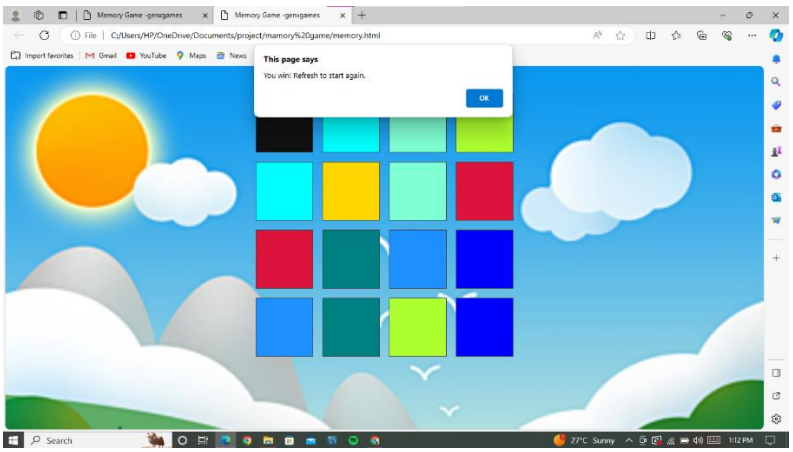
Rigorous testing is crucial to identify and rectify any bugs, glitches, or inconsistencies within the games. Conduct functional tests to verify that the games perform as intended and provide an enjoyable user experience. Solicit feedback from testers to improve gameplay and address any usability issues. Iteratively refine the games based on the testing feedback, optimizing code, enhancing visuals, and ensuring seamless gameplay.

By following this methodology, the development of each game within the "gen_x_games" project can progress systematically from conceptualization to implementation and refinement. The phased approach ensures a structured workflow, aiding in efficient collaboration among team members and culminating in high-quality, engaging web-based games.

❖ Screenshot

- **Memory game**





❖ Learning Outcome

1) Proficiency in Frontend Development:

HTML Mastery: The project implementation significantly enhanced our understanding of HTML's structural components. We gained proficiency in organizing content, defining layouts, and integrating multimedia elements, crucial for building interactive web applications.

CSS Styling Expertise: Working extensively with CSS allowed us to grasp advanced styling techniques. We learned to create visually appealing interfaces, implement responsive designs, and optimize user experiences through effective styling practices.

JavaScript Proficiency: Implementing game functionalities using JavaScript deepened our understanding of dynamic web interactions. We honed our skills in event handling, DOM manipulation, and implementing game logic, empowering us to create interactive and engaging gaming experiences.

2) Collaborative Development Skills:

Team Collaboration: Collaborating on the implementation of multiple games strengthened our teamwork and communication skills. We learned to coordinate tasks, resolve conflicts, and leverage each team member's strengths to achieve project goals efficiently.

Version Control (GitHub): Utilizing GitHub for collaborative development improved our version control proficiency. We learned to manage code repositories, track changes, and merge contributions, ensuring a cohesive development workflow. Engaged in collaborative coding on Github, contributing to a virtual team environment, and developing communication and coordination skills.

3) Problem-Solving and Iterative Development:

Debugging and Problem Resolution: Implementing complex game functionalities involved rigorous debugging and problem-solving. This process enhanced our ability to identify and troubleshoot errors, refining our analytical and debugging skills.

Research Skills: Conducted research on HTML, CSS, and JavaScript best practices, informed design choices, and expanded my knowledge base through literature review.

❖ Future Work and Conclusion

To enhance the "GEN-X-GAMES" project's appeal and extend the gaming experience, we aim to introduce enriching features and levels across each game: CHESS, QUIZS, and PUZZEL. The intent is to deepen gameplay, increasing engagement and complexity for players.

❖ References

Mozilla Developer Network. "Document Object Model (DOM)." MDN Web Docs.

- Link:https://developer.mozilla.org/en-US/docs/Web/API/Document_Object_Model
- Accessed on February 5, 2022.
- Provides in-depth documentation on the DOM, essential for understanding how to manipulate HTML and XML documents.

Codecademy. "Learn JavaScript." Codecademy.

- Link: https://www.codecademy.com/learn/introduction-to-javascript
- Accessed on February 15, 2022.
- Offers interactive JavaScript lessons, helpful for mastering the scripting language used in your game.

W3Schools. "JavaScript Animation."

- Link: https://www.w3schools.com/js/js_animation.asp
- Accessed on March 10, 2022.
- Provides information on JavaScript animation, which can be beneficial for creating interactive elements in games like Rock, Paper, Scissors.

❖ Bibliography

•HTML
https://www.w3schools.com/html/default.asp

•css
https://www.w3schools.com/css/default.asp

•Javascript

https://www.w3schools.com/js/default.asp

•Git and github (learning)
https://youtu.be/Uz_mTOQL9Tw?si=1F7joZ5gJv_xnlkY

•Git profile
https://github.com/ANSARI-YUSUF/project