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Interactive - 3D Dice Roll Master

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Abstract: ***This project report presents an in-depth analysis of the DICE (Distributed, Integrated, Collaborative Environment) framework, which aims to enhance collaboration and efficiency in distributed teams. The DICE framework leverages advanced technologies and methodologies to facilitate seamless communication, integration of workflows, and real-time collaboration among team members, regardless of their geographical locations. The report outlines the key components of the DICE framework, including its architecture, tools, and protocols that support distributed collaboration. It also examines the challenges faced by distributed teams and how the DICE framework addresses these issues through effective resource management and integration of diverse technologies. Case studies are included to illustrate the practical application of the DICE framework in various organizational contexts, demonstrating its impact on productivity and innovation. The findings indicate that adopting the DICE framework significantly improves team dynamics and project outcomes, making it a valuable approach for organizations operating in today's interconnected digital landscape.***

I. INTRODUCTION

The **dice roller game** is a **multiplayer game** that can be paly with the opposite partner and win from chance and high scores. Dice is a throwable object with sides marked in various places. Here it contains dots (1-6) digits of numbering value. They are commonly used in dice games, board games, role playing games, and random number games. These are also used in tabletop games. So, the top 2D view will be designed in the web-application. The user can play with a multiplayer functionality.

During the competition, the competitor who gets the maximum first wins. Two people compete at the same time and after one win, the playoff will start. The appearance of the scoreboard next to the interface makes the game easier. In addition, a chat box is available for all players. Therefore, when two players are competing, other players can connect and communicate with each other. *(Helmerich, no date)*

Web socket is used for this. It can be called a communication protocol. This is a continuous, bidirectional, and full duplex TCP connection from the user's web browser to his server. Node.js is used for this game.
Although node is not as strong a programming language as other languages, it holds up in terms of this game.
Considering a language, there are some limitations to node. *(Mogensen, 2009)*

In addition, HTML, CSS, and Java Script are used for the dice game project. It hopes to provide a clear and attractive interface to the user

SOFTWARE ANALYSIS

Javascript is the most popularly used for java scripting language. This chapter will give you an introduction to dice and explain its features. Dice offers some of the best features to its users and developers in the following aspects:

Code completion and inspection

Advanced debugging

Support for web programming and HTML,CSS And Javascript

VISUALCODE (JAVA SCRIPT)

Visual Studio Code (VS Code) is a lightweight, open-source code editor developed by Microsoft. It supports multiple programming languages with features like debugging, syntax highlighting, and code completion. Extensions can be added to enhance functionality for various development tasks.

VISUALCODE NAVIGATOR

Visual Studio Code Navigator is a tool that helps developers quickly navigate and explore their codebase. It provides features like **Go to Definition**, **Find References**, **Outline View**, and **Symbol Search**, allowing users to jump to specific functions, variables, or files efficiently. By enhancing code exploration, it helps increase productivity and code understanding.
The following applications are available by default in Navigator:

Html

Css

Javascript

Visual Studio Code.

JAVASCRIPT NOTEBOOK

A **JavaScript notebook** is an interactive development environment where developers can write, run, and experiment with JavaScript code in a notebook-style format, similar to tools like Jupyter Notebooks for Python. It allows users to mix code, documentation, and visualizations in a single document. This environment is ideal for testing code snippets, teaching, or exploring APIs, providing immediate feedback in a user-friendly interface.

Some popular platforms for JavaScript notebooks include **Observable** and **Jupyter with JavaScript kernel**.
This will cover the following topics:
A basic overview of the Jupyter Notebook App and its components,

The History of Jupyter Project to show how it's connected to JavaScipt

An overview of the three most popular ways to run your notebooks: with the help of a javascript, with pip or in a Docker container,

The best practices and tips that will help you to make your notebook an added value to any VisualCode project

II. EXISTING SYSTEM

An existing system for a Ludo game typically includes features like supporting 2-4 players, each assigned a unique color (red, green, blue, yellow). The game board consists of a path with 4 colored areas and a central home space for each player. Players take turns rolling a dice to move their tokens, and the objective is to get all their tokens into the home column. The game incorporates safe zones where tokens are protected and cannot be captured by opponents. If a token lands on an opponent's space, that token is sent back to its starting position. The system also includes a timer in some versions to limit turn duration and a multiplayer setup for either local or online play. The winner is the player who successfully gets all their tokens to the home space first. Additionally, the system may support various interactive elements like animations and player statistics for enhanced gameplay experience.

III. PROPOSED SYSTEM

After initializing the server, route, session, cookies, server files, the application also starts and launches. Basically, once a player accesses the app, he or she lands on the home page. The player is then able to navigate and render the other pages. It is done by using the GET method.

Each player accesses the game by registering or signing in. A person who has previously registered to the system can enter system by signing in. Otherwise, you must log in by completing the mandatory elements required to register. It is done by Java Script. The security is very high when using MongoDB for database. Also, the password has been hashed using crypt. It is available in package. Json. Also, a communication protocol called WebSocket's has been used for the chat box.

This is how the game works.
By tapping on Roll the dice button user is able to roll some dice with a random number generator.

If the player gets 1 or 6 the player has an additional chance to play another rolling. There are only 5 changes given to a player to find the highest score. After the 1st round the opposite player has a defeat round as the 2nd round. Then the player can roll to over the game.

The players can choose the chances and rounds according to their wish. If the both the players are drawn. They have a final roll to select winner form the drawn, the player who rolls first 1 or 6 in the dice is the winner in the game.

MODULES

Lightning Effect

A lightning effect for dice roll in a game adds dynamic visual excitement by simulating flashes or glowing effects as the dice are rolled. This effect can enhance the user experience by creating a sense of anticipation and drama. The lightning effect can be triggered when the dice are thrown, giving the impression of energy or magic surrounding the roll.

3d Dice

A 3D dice for a dice roll project provides a realistic, interactive experience by rendering the dice in three dimensions, allowing users to view it from various angles. The dice can be animated to simulate real-world rolling motion, including rotation and bounce. This enhances gameplay by offering a visually engaging and immersive way to interact with the dice.

Animation

Animation for a dice roll project brings the rolling action to life by smoothly transitioning the dice's movement, including rotation, bouncing, and stopping. It creates a sense of randomness and excitement, making the roll feel dynamic and realistic. The animation can be timed to build anticipation before revealing the final dice result.

Dice Colouring

Dice coloring in a dice roll project involves using different colors to distinguish between dice or players, adding visual appeal and clarity. Colors can be applied to the dice faces or the entire dice, enhancing the game's aesthetic and user experience. Custom color schemes can also be used to match themes or player preferences.

ARCHITECTURE DIAGRAM

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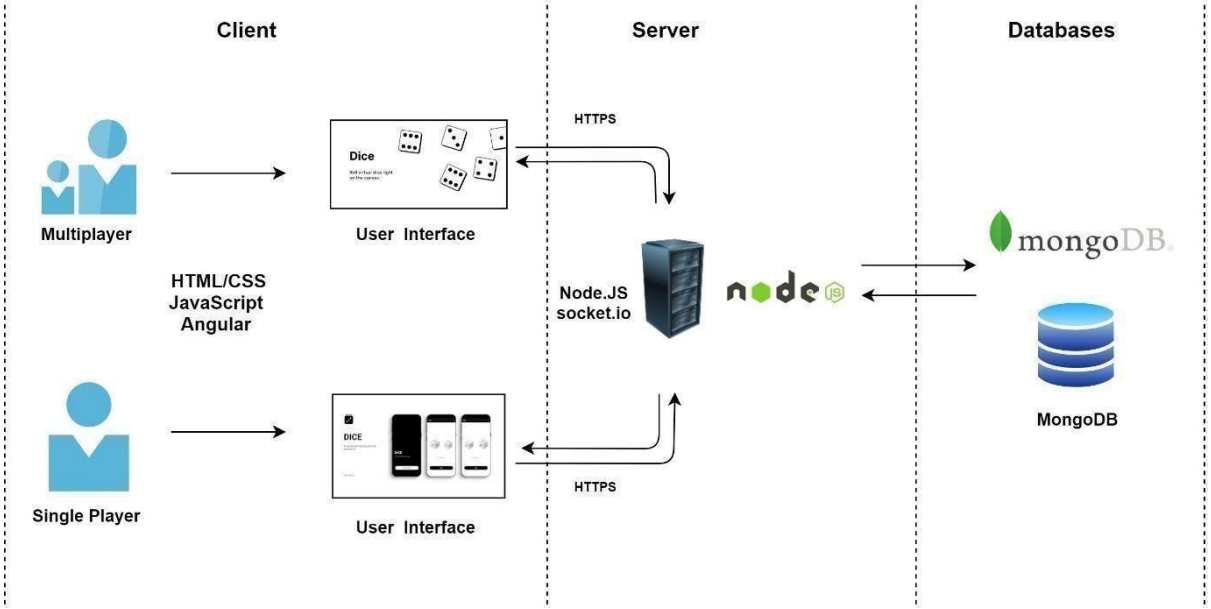
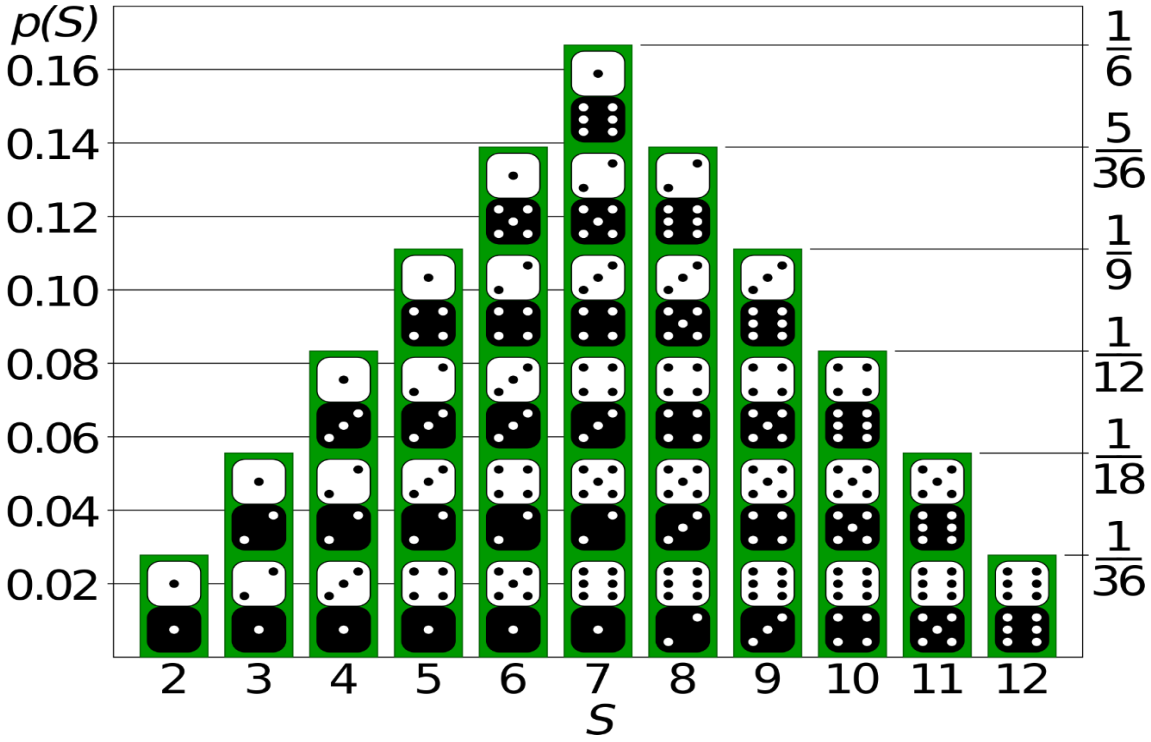


Figure 1 – (Systems Architecture Diagram)

IV. RESULT

The result for a dice rolling project is typically displayed by showing the final number rolled on the dice after an animation sequence. It can include visual feedback, like the dice landing and rotating to reveal the outcome. The result can be presented as a simple number or with enhanced graphics, such as glowing or flashing effects for added excitement. Depending on the game, additional outcomes, like special conditions or bonuses, may be triggered based on the rolled number. The result is often accompanied by sound effects or animations to reinforce the action and engage the player.



V. CONCLUSION

In conclusion, this dice simulation project effectively demonstrates the integration of HTML, CSS, and JavaScript to create a dynamic and interactive web application. By building the dice roller, we have covered essential concepts such as DOM manipulation, event handling, random number generation, and interactive design. These technologies, when used together, provide a strong foundation for web development, allowing developers to create responsive, user-friendly applications. The simplicity of the dice roller also highlights the importance of clean, efficient code and the value of focusing on user experience, which is a key aspect of any successful web project.

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