NUMBER GUESSING GAME

MINI PROJECT REPORT

Mini project report

Submitted by

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BONAFIDE CERTIFICATE

Certified that this project report titled “NUMBER GUESSING GAME USING C LANGUAGE" is the bonafide work of VADLAMUDI SANDHYA**(111720102165)** who carried out the work under my supervision.

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ABSTRACT

My project title is “number guessing game”. It is very interesting game for our mind refreshment.

Given an integer from 1 to 100. The user should suppose to guess the number that computer has chosen. The user should guess the number in 10 attempts only. The game will end after 10 attempts and if the player failed to guess the number, and then he loses the game. If the user guessed the number correctly in max 10 attempts he/she will win the game.

Mostly, we are seeing that due to heavy works, they mind will disturb. For that, to overcome from it we should play games that of thinking, interactive. Our stress levels are normal when our mind is cool and refresh.

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CHAPTER 1

1. INTRODUCTION

1.1 problem statement

Now a day's most of them are in stress, tension. There is no refreshment for their mind. They are working whole day to get success. So that I had chooses a game for refresh our mind and that was program on number guessing game. The user should find the computer guessed number to win the game.

1.2 objective of the project

The main objective of my project is for refreshing our mind, quick grasping, great thinking power, knowledge experience, etc…..

1.3 project scope

The main scope of the project is to overcome from stress and relaxation. This will help the user to improve their knowledge skills. The user will be peaceful when playing this game. This project gives the hints to user whether the user guessed number is low or high. We can quickly guess the number what computer taken number randomly. It is very entertaining game and useful for us. If the user guessed a number random the computer say lower number or higher number or you win. But the computer gives 10 attempts only. If the user not guessed in 10 attempts he loses the game. This will help them to improve their peace of learning. It is very simple and very easy.

CHAPTER 2

2. System implementation

2.1 System specification

2.11 Hard ware requirements

Operating system**:** windows
Processor : 2.0 GHZ

2.12 Software requirements

1. Operating System: Windows, macOS, Linux, or Chrome OS
2. Web Browser: Google Chrome, Mozilla Firefox, Safari, or Microsoft Edge.
3. Programming Language: (HTML, CSS, JS)
4. Runtime Environment: Browser-based (no additional installation required)

2.2 Software description

The Number Guessing Game is a web-based application built using HTML5, CSS3, and JavaScript. This interactive game challenges users to guess a randomly generated number between 1 and 100.

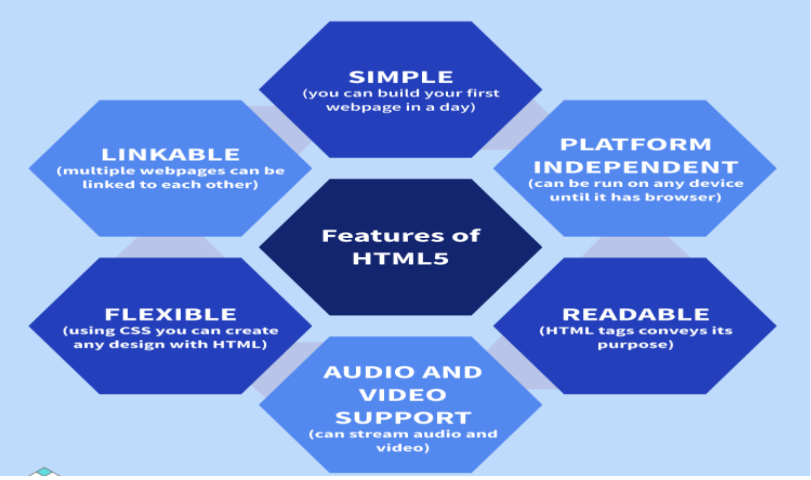

SIMPLE
(you can build your first webpage in a day)
LINKABLE
(multiple webpages can be linked to each other)
PLATFORM INDEPENDENT
(can be run on any device until it has browser)
Features of HTML5
FLEXIBLE
(using CSS you can create any design with HTML)
READABLE
(HTML tags conveys its purpose)
AUDIO AND VIDEO SUPPORT
(can stream audio and video)

Fig 1. Features of html language

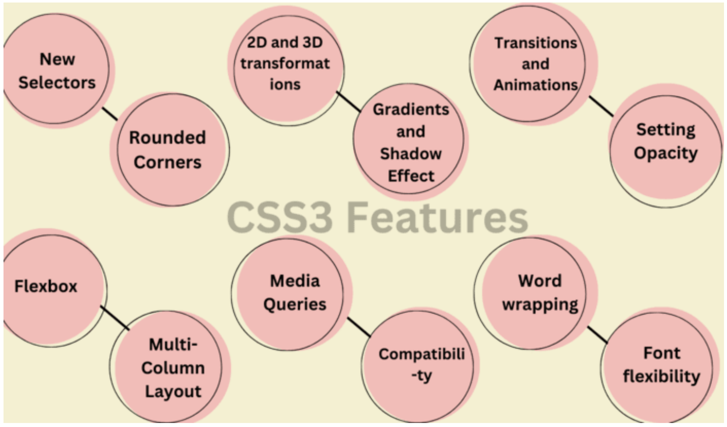


Fig 2. Features of CSS language

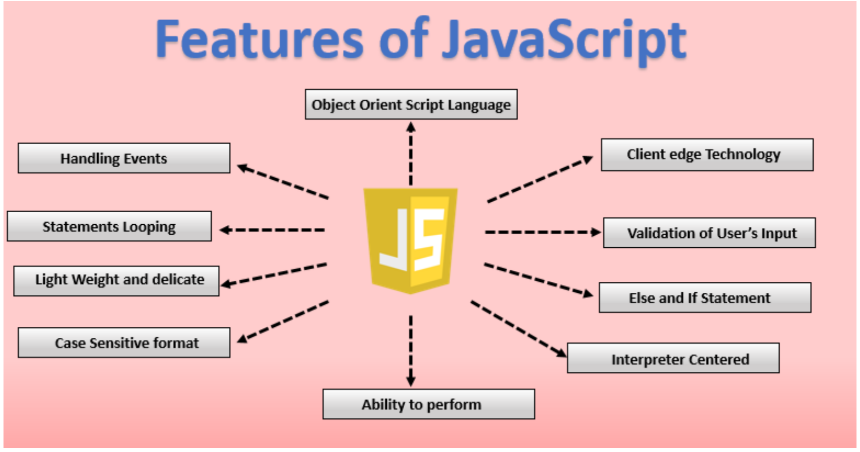


Fig 3. Features of JavaScript language

CHAPTER 3

3. Methodology

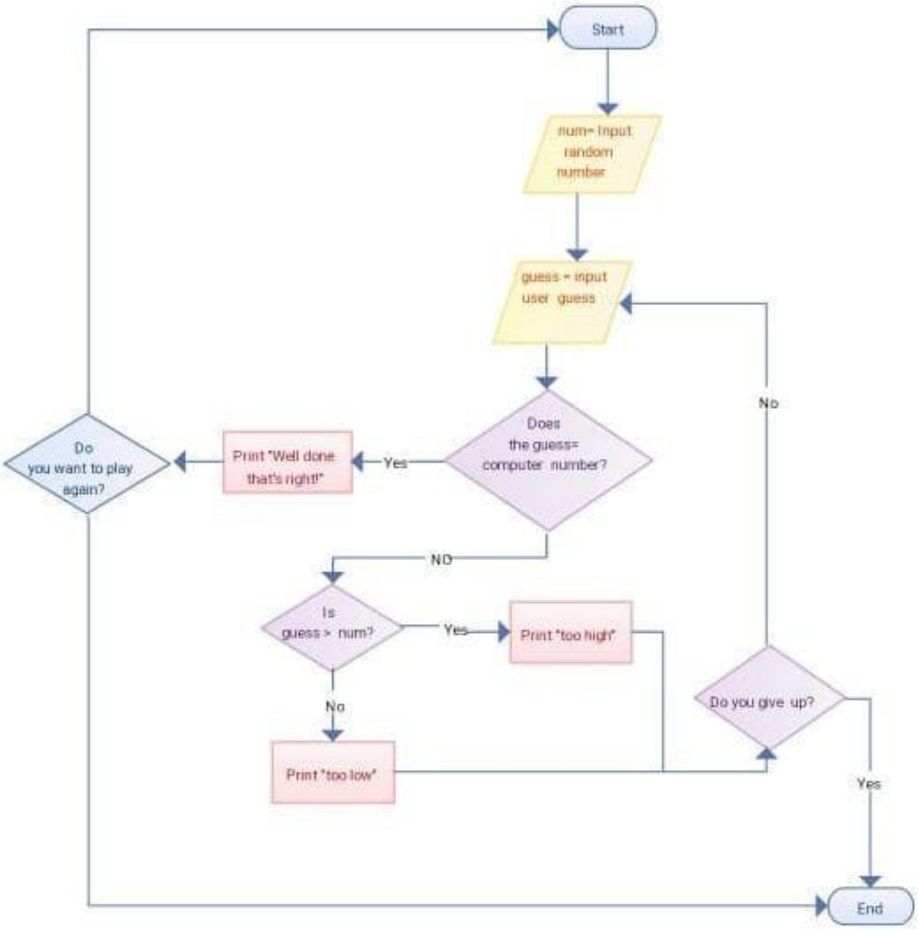


Fig 4. Methodology

This is the game played by a single player. Computer guess is equal to input user guess. Guess the computer number. The user should guess the secret number of computer in 10 attempts. After every guess the algorithm will tell the user if the guess was too high, too low, or was correct. The game is about guessing a number for IQ power.

CHAPTER 4

4. Implementation and result

4.1 system implementation

4.11 Stdio.h

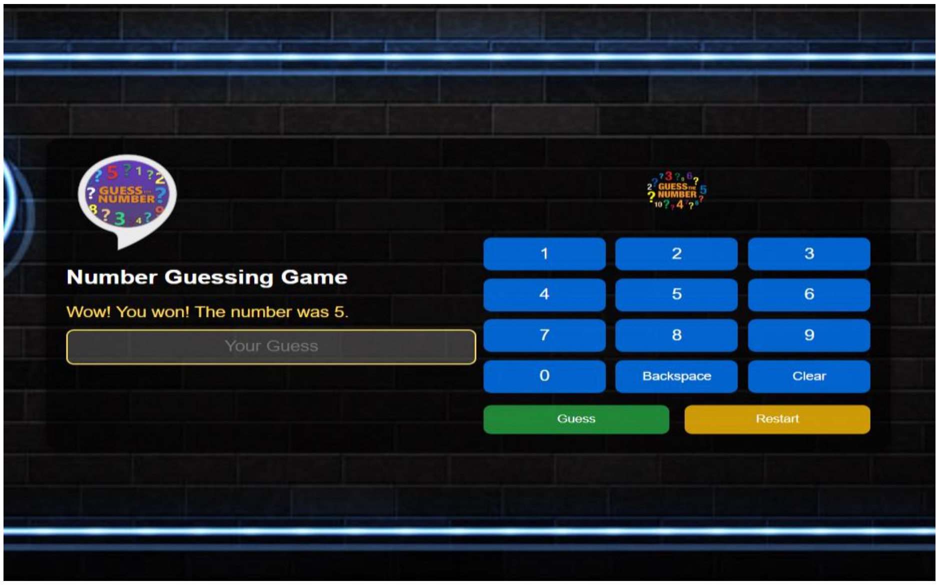
The header file stdio.h stands for standard input output. It has the information related to input/output functions. These functions makeup the bulk of the C standard library header <stdio.h>. We all know that at starting we use this as #include<stdio.h>.

The header file stdlib.h stands for standard library. It has the information of memory allocation/freeing functions. It also used in some of the coding as #include<stdlib.h>. H is the header of the general purpose standard library of c programming language which includes functions involving memory allocation, process control, conversions and others. It is compatible with C++ and is known as cstdlib in C++.

4.13 Math.h

The math.h header defines various mathematical functions and one macro. All the functions available in this library take double as an argument and return double as the result.

4.2 Results


Number Guessing Game

Wow! You won! The number was 5.

Fig 5. Output of my project

The above fig.5 is my result on number guessing game. That is the output I got. I had executed this in vs code. I had done the code for this to execute whether it is working or not. As that computer said to guess a number from 1 to 100 as I had choosen 70. The computer said that lower number please. So next I chosen 40, again it says lower number please. And next I choosen 10 it says lower number please. I choosen 2, it says higher number. Finally I guessed 5 correctly in 5 attempts.

It was very relaxing game for me. And it makes us thinking power. Our IQ levels also are work fastly. In this game our mind makes peace. As I guessed in 4 attempts but there are no infinity attempts, there are only 10 attempts to guess the computer secret number.

CHAPTER 5

5. Code snippet

Index.html :

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
     <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Number Guessing Game</title>
    <link rel="stylesheet" href="style.css">
</head>
<body>
    <!-- Game container with flex layout -->
    <div class="container">
```

```
        <!-- Left side: logo and input -->
        <div class="left-side">
            <!-- Game logo -->
            <img src="images/logo.png" alt="Game Logo" class="game-logo">
            <h1>Number Guessing Game</h1>
            <p id="message">Guess a number between 1 and 100:</p>

            <!-- Display the guess input -->
            <input type="text" id="guessInput" placeholder="Your Guess" readonly />
        </div>

        <!-- Right side: keyboard and buttons -->
        <div class="right-side">
            <!-- On-Screen Numeric Keyboard -->
            <img src="images/img.png" alt="image" class="image">

            <div class="keyboard">
                <button class="key" data-key="1">1</button>
                <button class="key" data-key="2">2</button>
        <button class="key" data-key="3">3</button>

        <button class="key" data-key="4">4</button>

        <button class="key" data-key="5">5</button>

        <button class="key" data-key="6">6</button>

        <button class="key" data-key="7">7</button>

        <button class="key" data-key="8">8</button>

        <button class="key" data-key="9">9</button>

        <button class="key" data-key="0">0</button>

        <button class="key small" id="backspace">Backspace  </button>

        <button class="key small" id="clear">Clear</button>

      </div>


      <!-- Buttons for Guess and Restart -->

      <div class="button-container">

        <button id="guessButton">Guess</button>

        <button id="restartButton" style="display: none;">Restart</button>

      </div>

    </div>

  </div>
```

```
    <script src="script.js"></script>
</body>
</html>
```

Style.css :

```
/* General body styles */
body {
    font-family: Arial, sans-serif;
    background: url('images/bg.jpeg') no-repeat center center fixed;
    background-size: cover;
    margin: 0;
    padding: 0;
    color: white;
    display: flex;
    flex-direction: column;
    justify-content: center;
    align-items: center;
    height: 100vh;  /* Full height for centering vertically */
    text-align: center;
}
/* Game logo at the top */
```

```
.game-logo {
    width: 120px;  /* Adjust the size of the logo */
    height: auto;
    margin-bottom: 20px;  /* Space below the logo */
    display: block;
}
.image {
    width: 100px;
    height: auto;
}
/* Flexbox container for left and right side */
.container {
    display: flex;
    justify-content: center;
    align-items: flex-start;
    gap: 30px;  /* Space between left and right side */
    padding: 20px;
    background-color: rgba(0, 0, 0, 0.6);  /* Semi-transparent background */
    border-radius: 15px;
    box-shadow: 0px 4px 10px rgba(0, 0, 0, 0.5);
    width: 70%;  /* Adjust width */
    max-width: 800px;  /* Limit maximum width */
    margin: auto;
}
/* Left-side styling */
.left-side {
    text-align: left;
    flex: 1;
}
/* Heading */
h1 {
    color: #fff;
    font-size: 24px;
    margin-bottom: 20px;
}

/* Message styling */
#message {
    margin-bottom: 10px;
    font-size: 18px;
    color: #ffdd57;
}

/* Input field styling */
input[type="text"] {
    width: 100%;
    padding: 10px;
    margin-bottom: 10px;
    border: 2px solid #ffdd57;
    border-radius: 8px;
    text-align: center;
    font-size: 18px;
    background-color: rgba(255, 255, 255, 0.2);  /* Light transparent background */
    color: white;
}

/* Right-side styling */
.right-side {
    text-align: center;
    flex: 1;
}

/* Keyboard styling */
.keyboard {
    display: grid;
    grid-template-columns: repeat(3, 1fr);
    gap: 10px;
    margin-bottom: 15px;
}

.key {
    padding: 10px;
    background-color: rgba(0, 123, 255, 0.8);
    color: white;
    border: none;
    border-radius: 8px;
    font-size: 18px;
    cursor: pointer;
```

```
}

.key:hover {
    background-color: rgba(0, 123, 255, 1);
}

/* Smaller key sizes */
.key.small {
    font-size: 14px;
    padding: 8px;
}

/* Button container styling */
.button-container {
    display: flex;
    justify-content: space-between;
    margin-top: 10px;
}

/* Guess and Restart button styles */
```

```
#guessButton, #restartButton {
   padding: 10px;
   background-color: rgba(40, 167, 69, 0.8);
   color: white;
   border: none;
   border-radius: 8px;
   cursor: pointer;
   width: 48%;
}

#guessButton:hover, #restartButton:hover {
   background-color: rgba(40, 167, 69, 1);
}

/* Restart button specific styles */
#restartButton {
   background-color: rgba(255, 193, 7, 0.8);
}

#restartButton:hover {
    background-color: rgba(255, 193, 7, 1);
}

/* Result message styling */
#resultMessage {
    margin-top: 15px;
    font-size: 18px;
    color: #ffdd57;
}
```

Script.js :

```
let randomNumber;
let attempts = 10;
let currentGuess = '';

document.addEventListener('DOMContentLoaded', () => {
    resetGame();

    // Add event listeners to number buttons
    const keys = document.querySelectorAll('.key');
```

```
  keys.forEach(key => {
    if (key.dataset.key) { // Check if data-key attribute exists
      key.addEventListener('click', () => {
        handleKeyPress(key.dataset.key);
      });
    }
  });

  // Add event listener for the Backspace button
document.getElementById('backspace').addEventListener('click', () => {
    if (currentGuess.length > 0) {
      currentGuess = currentGuess.slice(0, -1);
      updateGuessInput();
    }
  });

  // Add event listeners for the Guess and Restart buttons
```

```
document.getElementById('guessButton').addEventListener('click',
handleGuess);

document.getElementById('restartButton').addEventListener('click'
, resetGame);


    // Clear button functionality
    document.getElementById('clear').addEventListener('click',     ()
=> {
        currentGuess = '';
        updateGuessInput();
    });
});



// Function to reset the game
function resetGame() {
    randomNumber = Math.floor(Math.random() * 100) + 1; // New
random number
    attempts = 10; // Reset attempts
    currentGuess = ''; // Reset current guess
    document.getElementById('message').textContent = 'Guess a number between 1 and 100:';
    updateGuessInput();
    document.getElementById('restartButton').style.display = 'none'; // Hide restart button
}

// Function to update the guess input display
function updateGuessInput() {
    document.getElementById('guessInput').value = currentGuess; // Update the input field
}

// Function to handle key presses
function handleKeyPress(key) {
    if (currentGuess.length < 3) { // Limit to 3 digits for guessing
        currentGuess += key;
        updateGuessInput();
    }
}
```

```
// Function to handle the guess
function handleGuess() {
    if (currentGuess === '') {
        alert('Please enter a guess!');
        return;
    }

    const guess = parseInt(currentGuess);
    if (isNaN(guess) || guess < 1 || guess > 100) {
        alert('Please enter a valid number between 1 and 100.');
        return;
    }

    attempts--; // Decrease attempts

    if (guess === randomNumber) {
        document.getElementById('message').textContent = `Wow! You won! The number was ${randomNumber}.`;
        document.getElementById('restartButton').style.display = 'block'; // Show restart button
    } else if (attempts === 0) {
        document.getElementById('message').textContent =
`Computer won! The number was ${randomNumber}.`;
        document.getElementById('restartButton').style.display =
'block'; // Show restart button
    } else {
        document.getElementById('message').textContent = guess <
randomNumber ? `Higher number, please!...   Attempts left:
${attempts}` : `Lower number, please!...   Attempts left:
${attempts}`;
    }

    currentGuess = ''; // Reset current guess
    updateGuessInput(); // Clear input field
}
```

CHAPTER 6

Conclusion

The number guessing game has been implemented successfully. By doing methodology I got the idea for code execution. My guessing game worked correctly as it followed by most of the objectives. It told you if your guess was too high or too low and if your guess was right it told you that also. It had a limit between 1-100 so that it wasn't too hard for people to guess. As well as this the final, completed guessing game didn't come up with error messages as it ran through the flow chart each time a number was entered which shows that it was correct. It was only a basic version and wasn't expanded but it worked fine.

References

I am an embedded c software engineer and a corporate trainer, currently; I am working as senior software engineer in a largest software consulting company. I have working experience of different microcontrollers, drivers, and POS device and payment gateway.

Hunt J.(2019) number guessing game. In: A beginner's guide to c programming, undergraduate topics in computer science. Springer, Cham is publishers of this book.