NUMBER GUESSING GAME

INTRODUCTION

A number guessing game is a simple guessing game where a user is supposed to guess a number between 0 and N in a maximum of 10 attempts. The game will end after 10 attempts and if the player failed to guess the number, and then he loses the game. Examples: N = 100. Number chosen: 20. Given an integer N. A number guessing game is a simple guessing game where a user is supposed to guess a number between 0 and N in a maximum of 10 attempts. The game will end after 10 attempts and if the player failed to guess the number, and then he loses the game.

Approach: The following steps can be followed to design the game:

Generate a random number between 0 and N.

Then iterate from 1 to 10 and check if the input number is equal to the assumed number or not.

If yes, then the player wins the game.

Otherwise, terminate the game after 10 attempts.

Below is the implementation of the above approach:

The user is prompted to guess a number from 1 to 10.

The parseInt() converts the numeric string value to an integer value.

The while loop is used to take input from the user until the user guesses the correct answer.

The if...else statement is used to check the condition. The equal to == operator is used to check if the guess was correct.

- **Pseudo-random number generation**

The first step in the guessing game is to generate a number for the player to guess. JavaScript includes several built-in global objects that help you write code. To generate your random number, use the Math object.

Math has properties and functions for working with mathematical concepts in JavaScript. You will use two Math functions to generate the random number for your player to guess.

Start with Math.random(), which generates a pseudo-random number between 0 and 1. (Math.random is inclusive of 0 but exclusive of 1. This means that the function could generate a zero, but it will never generate a 1.)

For this game, set the random number between 1 and 100 to narrow down the player's options. Take the decimal you just generated and multiply it by 100 to produce a decimal between 0 and…not quite 100. But you'll take care of that in a few more steps.

Right now, your number is still a decimal, and you want it to be a whole number. For that, you can use another function that is part of the Math object, Math.floor(). Math.floor()'s purpose is to return the largest integer that is less than or equal to the number you give it as an argument—which means it rounds down to the nearest whole number:

```
Math.floor(Math.random() * 100)
```

That leaves you with a whole number between 0 and 99, which isn't quite the range you want. You can fix that with your last step, which is to add 1 to the result. Voila! Now you have a (somewhat) randomly generated number between 1 and 100:

```
Math.floor(Math.random() * 100) + 1
```

Variables

Now you need to store the randomly generated number so that you can compare it to your player's guesses. To do that, you can assign it to a variable.

JavaScript has different types of variables you can choose, depending on how you want to use the variable. For this game, use const and let.

let is used for variables if their value can change throughout the code.

const is used for variables if their value should not be changed.

There's a little more to const and let, but this is all you need to know for now.

The random number is generated only once in the game, so you will use a const variable to hold the value. You want to give the variable a name that makes it clear what value is being stored, so name it random Number:

HTML CODE

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width,
initial-scale=1.0">
    <meta http-equiv="X-UA-Compatible" content="ie=edge">
    <title>Number Guessing Game</title>
    <link rel="stylesheet" href="style.css">
</head>
<body>
    <h1>Number guessing game</h1>
    <p>Try and guess a random number between 1 and
100.</p>
    <p>You have 10 attempts to guess the right number.</p>
    </br>
    <div id="wrapper">
        <form class="form">
            <label2 for="guessField" id="guess">Guess a
number</label>
            <input type="text" id="guessField"
class="guessField">
```

```
            <input type="submit" id="subt" value="Submit guess"
class="guessSubmit">
        </form>
        <div class="resultParas">
            <p >Previous Guesses: <span
class="guesses"></span></p>
            <p >Guesses Remaining: <span
class="lastResult">10</span></p>
            <p class="lowOrHi"></p>
        </div>
    </div>
    <script src="app.js"></script>
</body>
</html>
```

CSS CODE

```
html {
    font-family: sans-serif;
}
body {
    width: 50%;
    max-width: 750px;
    min-width: 480px;
    margin: 0 auto;
}
.lastResult {
    color: white;
    padding: 7px;
}
.guesses {
    color: white;
    padding: 7px;
}
button {
    background-color: purple;
    color: #fff;
    width: 250px;
    height: 50px;
```

```
    border-radius: 25px;
    font-size: 30px;
    border-style: none;
    margin-top: 30px;
    /* margin-left: 50px; */
}
#subt {
    background-color: yellow;
    color: #000;
    width: 350px;
    height: 50px;
    border-radius: 25px;
    font-size: 30px;
    border-style: none;
    margin-top: 50px;
    /* margin-left: 75px; */
}
#guessField {
    color: #000;
    width: 550px;
    height: 100px;
    font-size: 30px;
    border-style: none;
```

```
    margin-top: 25px;
    font-size: 45px;
    /* margin-left: 50px; */
    border: 5px solid #14727d;
    text-align: center;
}
#guess {
    font-size: 55px;
    /* margin-left: 90px; */
    margin-top: 120px;
    color: #fff;
}
.guesses {
    background-color: #12aab4;
}
#wrapper {
    box-sizing: border-box;
    text-align: center;
    width: 750px;
    height: 550px;
    background-color: #12aab4;
    color: #fff;
    font-size: 25px;
```

```
}
h1 {
    background-color: #7b3056;
    color: #fff;
    text-align: center;
    width: 750px;
}
p {
    font-size: 20px;
    text-align: center;
}
```

JAVASCRIPT CODE

```
//Generate a random number between 1 and 500
let randomNumber = parseInt((Math.random()*100)+1);
const submit = document.querySelector('#subt');
const userInput = document.querySelector('#guessField');
const guessSlot = document.querySelector('.guesses');
const remaining = document.querySelector('.lastResult');
const startOver = document.querySelector('.resultParas');
const lowOrHi = document.querySelector('.lowOrHi');
const p = document.createElement('p');
let previousGuesses = [];
let numGuesses = 1;
let playGame = true;

if (playGame){
    subt.addEventListener('click', function(e){
        e.preventDefault();
        //Grab guess from user
        const guess = parseInt(userInput.value);
        validateGuess(guess);
    });
}
```

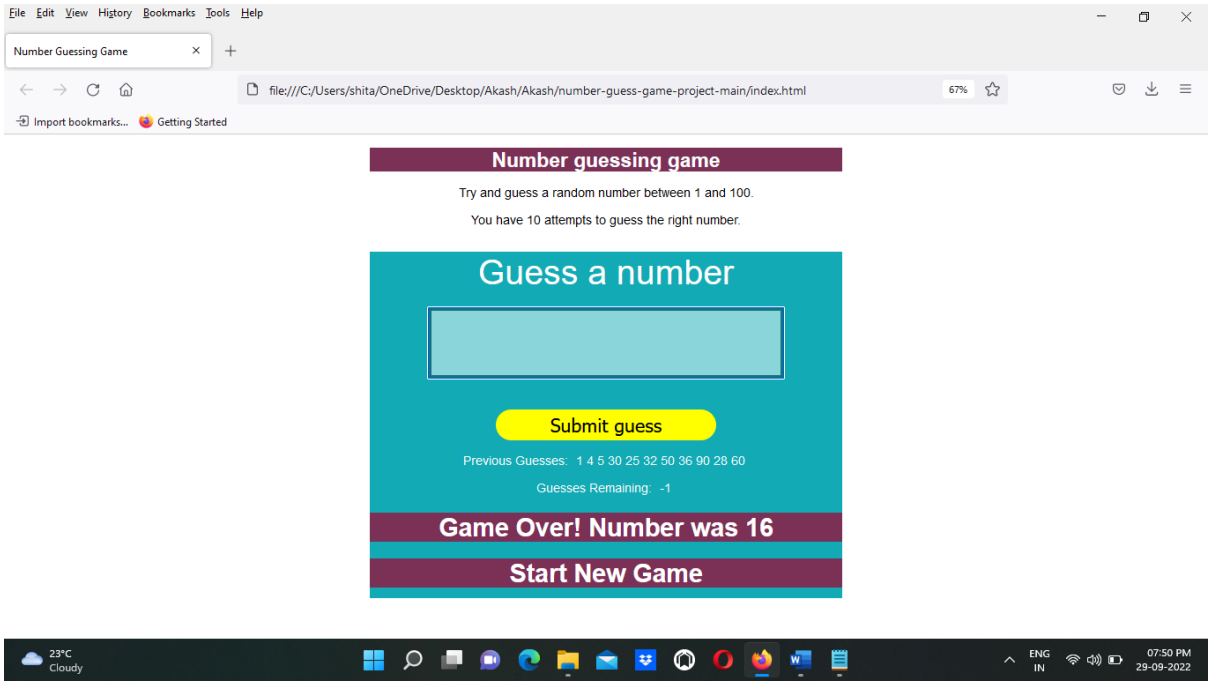
```
function validateGuess(guess){
    if (isNaN(guess)){
        alert('Please enter a valid number');
    } else if (guess < 1) {
        alert('Please enter a number greater than 1!');
    } else if (guess > 100){
        alert('Please enter a number less than 500!')
    } else {
        //Keep record of number of attempted guesses
        previousGuesses.push(guess);
        //Check to see if game is over
        if (numGuesses === 11){
            displayGuesses(guess);
            displayMessage(`Game Over! Number was
${randomNumber}`);
            endGame();
        } else {
        //Display previous guessed numbers
        displayGuesses(guess);
        //Check guess and display if wrong
        checkGuess(guess);
        }
    }
```

```
}

function checkGuess(guess){
    //Display clue if guess is too high or too low
    if (guess === randomNumber){
        displayMessage(`You guessed correctly!`);
        endGame();
    } else if (guess < randomNumber) {
        displayMessage(`Too low! Try again!`);
    } else if (guess > randomNumber) {
        displayMessage(`Too High! Try again!`);
    }
}

function displayGuesses(guess){
    userInput.value = '';
    guessSlot.innerHTML += `${guess}  `;
    numGuesses++
    remaining.innerHTML = `${11 - numGuesses}  `;
}

function displayMessage(message){
        lowOrHi.innerHTML = `<h1>${message}</h1>`
```

```
}

function endGame(){
    //Clear user input
    userInput.value = '';
    //Disable user input button
    userInput.setAttribute('disabled', '');
    //Display Start new Game Button
        p.classList.add('button');
        p.innerHTML = `<h1 id="newGame">Start New
Game</h1>`
    startOver.appendChild(p);
    playGame = false;
    newGame();
}

function newGame(){
    const newGameButton =
document.querySelector('#newGame');
    newGameButton.addEventListener('click', function(){
        //Pick a new random number
        randomNumber = parseInt((Math.random()*100)+1);
        previousGuesses = [];
```

```
        numGuesses = 1;
        guessSlot.innerHTML = '';
        lowOrHi.innerHTML = '';
        remaining.innerHTML = `${11 - numGuesses}  `;
        userInput.removeAttribute('disabled');
        startOver.removeChild(p);
        playGame = true;
    })
}
//Allow to restart game with restart button
//Change DIV to a form so it can accept the enter key

//NOTES:
//NaN != NaN
```

OUTPUT


File Edit View History Bookmarks Tools Help
Number Guessing Game
file:///C:/Users/shita/OneDrive/Desktop/Akash/Akash/number-guess-game-project-main/index.html
67%
Import bookmarks...
Getting Started
Number guessing game
Try and guess a random number between 1 and 100.
You have 10 attempts to guess the right number.
Guess a number
Submit guess
Previous Guesses: 1 4 5 30 25 32 50 36 90 28 60
Guesses Remaining: -1
Game Over! Number was 16
Start New Game
23°C
Cloudy
ENG
IN
07:50 PM
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