Ex1:

Analyse the code below without running it, what will be the output ? var num = 8; var num = 10; console.log(num);

The code snippet provided declares a variable named **num** twice and assigns different values to it.

In JavaScript, when a variable is declared multiple times using the **var** keyword, the latest declaration overrides any previous declarations. Therefore, the second declaration **var num = 10;** will overwrite the initial value of **num**.

As a result, the output of **console.log(num);** will be **10**

Ex2:

function numbers() { for (var i = 0; i < 5; i += 1) { console.log(i); } console.log(i); } numbers(); Change the code so the var i will be undefined outside of the for loop

To ensure that the variable **i** is **undefined** outside of the **for** loop, you can use the **let** keyword instead of **var**. The **let** keyword creates a block-scoped variable that is limited to the block in which it is defined.

Here's the modified code:

javascript

function numbers() { for (let i = 0; i < 5; i += 1) { console.log(i); } console.log(typeof i); // Output: "undefined" } numbers();

By replacing **var** with **let** in the **for** loop, the variable **i** will only be accessible within the loop's block scope. After the loop ends, attempting to access **i** will result in it being **undefined**. The final **console.log(typeof i)** statement will output **"undefined"** as desired.

Ex3:

You have to decide which type of variables you have to use Create a global variable that save the amount of money you have in your account Create a variable that saves the amount of VAT Create a variable that saves the amout of all the expenses and revenu you did /received for the past last month Create a JS code that multiplies of the expenses by the VAT Create a JS code that changes the amount of the money you have in your account depending on your expenses/revenu. Display it

Based on the requirements, here's an example of how you can create and use the variables:

In this example, I assumed an initial account balance of $1000, a VAT rate of 20% (represented as 0.2), and a total amount of expenses and revenue for the last month of $500. The **expensesWithVAT** variable calculates the expenses with the VAT applied, and then the **accountBalance** is updated by subtracting the expenses with VAT. Finally, the updated account balance is displayed using **console.log()**.

// Create a global variable for the amount of money in your account

let accountBalance = 1000;

// Create a variable for the amount of VAT

const vatRate = 0.2;

// Create a variable for the total expenses and revenue of the last month

let totalAmount = 500;

// Calculate the expenses after applying VAT

let expensesWithVAT = totalAmount \* (1 + vatRate);

// Update the account balance based on expenses and revenue

accountBalance -= expensesWithVAT;

// Display the updated account balance

console.log("Account Balance: $" + accountBalance);

Hangman game:

 document.addEventListener('DOMContentLoaded', function() {

    function HangmanGame() {

      var word = '';

      var hiddenWord = '';

      var attempts = 10;

      var guessedLetters = [];

      var wordContainer = document.getElementById('hidden-word');

      var guessesContainer = document.getElementById('guesses');

      var guessInput = document.getElementById('guess-input');

      var guessButton = document.getElementById('guess-button');

      var messageContainer = document.getElementById('message');

      function isLetterInWord(letter) {

        return word.includes(letter);

      }

      function updateHiddenWord(letter) {

        var updatedWord = '';

        for (var i = 0; i < word.length; i++) {

          if (word[i] === letter) {

            updatedWord += letter;

          } else {

            updatedWord += hiddenWord[i];

          }

        }

        return updatedWord;

      }

      function displayHiddenWord() {

        wordContainer.textContent = hiddenWord.split('').join(' ');

      }

      function isPlayer1Winner() {

        return !hiddenWord.includes('\*');

      }

      function handleGuess() {

        var guess = guessInput.value.toLowerCase();

        if (guessedLetters.includes(guess)) {

          messageContainer.textContent = 'You have already guessed that letter. Try again.';

          return;

        }

        guessedLetters.push(guess);

        guessesContainer.textContent = guessedLetters.join(' ');

        if (isLetterInWord(guess)) {

          hiddenWord = updateHiddenWord(guess);

          displayHiddenWord();

          if (isPlayer1Winner()) {

            messageContainer.textContent = 'CONGRATS! You win.';

            disableInput();

            return;

          }

        } else {

          attempts--;

          messageContainer.textContent = 'Incorrect guess! ' + attempts + ' attempt(s) remaining.';

          if (attempts === 0) {

            messageContainer.textContent = 'YOU LOSE.';

            disableInput();

            return;

          }

        }

        guessInput.value = '';

      }

      function disableInput() {

        guessInput.disabled = true;

        guessButton.disabled = true;

      }

      function startGame() {

        word = prompt('Player 1, enter a word (minimum 8 letters):');

        if (word.length < 8) {

          alert('Word must have a minimum of 8 letters.');

          return;

        }

        word = word.toLowerCase();

        hiddenWord = '\*'.repeat(word.length);

        displayHiddenWord();

        guessButton.addEventListener('click', handleGuess);

        guessInput.addEventListener('keydown', function(event) {

          if (event.key === 'Enter') {

            handleGuess();

          }

        });

      }

      startGame();

    }

    var game = new HangmanGame();

  });