Programs to practice in the Lab

Topics Covered: Callback, Promise, and Async/Await

Question 1: Write a function greet that takes a name and a callback function. The function should return a greeting message by calling the callback with the message.

Question 2: Create three functions that take a number, multiply it by 2, subtract 3, and then add 10. Use callbacks to chain these operations together.

Question 3: Write a function delayedMessage(message, delay) that prints the message after the specified delay using setTimeout. Use a callback for when the message has been printed.

Question 4: Write a function fetchDataWithCallback that simulates fetching data from an API with a delay. Implement error handling in the callback, where the callback can receive either a successful response or an error message. Test the function by simulating both success and failure scenarios.

Question 5: Create a function fetchData(url) that returns a promise. If the URL contains the word "error", the promise should reject; otherwise, it should resolve with "Data fetched successfully."

Question 6: Write a series of promises where each promise resolves with a value (e.g., 5, 10, 15), and you can chain them to calculate the sum of all values.

Question 7: Create a series of promises where each promise depends on the result of the previous one. For example, fetch user data, then fetch posts for that user, and finally fetch comments for the posts.

Question 8: Write a function that returns a promise, and the promise should be rejected with an error if it takes longer than a specified timeout duration (e.g., 3 seconds).

Question 9: In a payment processing system, you need to:

Authenticate the user, verify if the payment method is valid, Process the payment, Update the user’s account balance, and notify the user of the payment result via email.
Design this payment processing system using callbacks to ensure each step happens in order?

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