Programs to practice in the Lab

Topics Covered: Node JS Modules (os, events, util, fs, http)

Question 1: Program to track and display the current memory usage and calculate the percentage of free memory for every 5 seconds.

Question 2: Program to log the system uptime in a user-friendly format (days, hours, minutes).

Question 3: Create an event emitter that emits a "userDetails" event with two arguments: name and age. Write a listener that formats the output and logs it as "Hello, [name]! You are [age] years old."

Question 4: Write a program where an event is emitted, but the listener will only respond to it the first time; then, it should remove itself.

Question 5: Create a Class EventManagement that emits start, in-progress and completed events. Create a separate module and access it to listen to the events.

Question 6: Write a Node.js script that reads the content of a file asynchronously using the fs.readFile() method. The script should print the file's content to the console, and if an error occurs (e.g., the file doesn't exist), it should print an appropriate error message.

Question 7: Create a script that appends some text to a file using fs.appendFile(). If the file does not exist, it should be created. After appending the text, read the file's content and log it to the console.

Question 8: Explore the features like mkdir(), unlink(), rename(), readdir() of file system module of Node JS.

Question 9: Write a Node.js script using the http module to create a simple HTTP server that listens on port 3000. The server should respond with "Hello, World!" when accessed via a browser or an HTTP client.

Question 10: Modify the previous HTTP server to handle two routes:

- / should respond with "Welcome to the homepage".
- /about should respond with "This is the about page".

Use conditional statements to check the requested URL and send the appropriate response.

Question 11: Extend the HTTP server to respond with a JSON object when a request is made to /api/data. The server should send a JSON object with name, age, and city properties. Make sure the correct Content-Type header is set to application/json.

Question 12: Write a Node.js script using the os module to display the following system information: The hostname of the machine. The platform of the system (e.g., Linux, Darwin, Windows). The system's uptime (in seconds). The total memory available (in MB) and free memory (in MB).

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