COURSE NAME : ADVANCED WEB DEVELOPMENT

Read the following instructions carefully before attempting the question paper.
1. Attempt only the question allocated by neutral examiner out of all the given questions. If some other question is attempted by the candidate, it shall lead to cancellation of the examination.
2. Submit the question paper along with the answer sheet to the invigilator before leaving the examination hall/lab.
3. Fill all the details mentioned below very carefully in the space provided.

Registration No. :_____   Signature of student:_____

Question No. Allocated to candidate:_____
(To be filled by Neutral Examiner)

It is certified that I have verified that the candidate has attempted the allocated question only.

Signature of Neutral Examiner:_____   Signature of Invigilator:_____

Name of Neutral Examiner:_____   Name of Invigilator:_____

UID: _____   UID:_____

Q1 a) Include http module to create a server application and use the fs module to duplicate the original.txt file as the duplicate.txt file in the server with the client(user) request from the browser. Create a source.txt file and add personal information (name, city, state) in the server system for duplication.
b) Create a node.js web server application with the http module to perform the search operation on a given set of values. Accept a series of values from the input text fields of the client page and provide the output values as a response with the click event on a button.

Q2 a) Implement an express application to Pass 2 numbers in the url of the client request to the server and access those 2 numbers from the url using the params object and perform basic arithmetic operations (+,-,*,/) in the server node.js application. Finally, add a button on the client page and provide the output values as a response with a click event.
b) Implement a Node.js application to create a writable stream with a new sample.txt file and compute the prime numbers up to 100 and write the values to the sample.txt file with writable stream. Display the message "Task Completed "at the end in the console window.

Q3 a) Implement a Node.js application to create a readable stream with an employee.txt file (add basic employee details in the file). Read the student details from the above stream and send the data as a response to the client request from the browser.
b) Create a node.js web server application with the HTTP module to perform sort operations on a given set of values. Accept a series of values from the input text fields of the client page and provide the output values as a response with the click event on a button.

Q4 a) Implement a Node.js application to connect with MongoDB to Create a database and add car collection with the fields- Model, Company, Mileage, color, and Owner. Add multiple documents with Employee data. Finally, Query the above collection to find employees with more than a specific salary and display it in the console window.
b) Create a node.js web server application with the HTTP module to find a series of factorial numbers up to a given number. Accept a number from the input text field of the client page and provide the output values as a response with the click event on a button.

Q5 a) Implement a Node.js application to connect with MongoDB to Create a database and add House collection with the fields- Hno, rooms, furniture, and rent and Add multiple documents with student data. Finally, Sort (in ascending order) the student details with marks and display them in the console window.

b) Create a node.js web server application with the HTTP module to find a series of Fibonacci numbers up to a given number. Accept a number from the input text field of the client page and provide the output values as a response with the click event on a button.

Q6 a) Implement a client-server application with the express, HTTP, and socket.io modules to display the student (your) details in the server console after getting a request (connection) from a client. Then Broadcast the only odd visitor count from the server to all clients with the new client connections.

b) Create a node.js web server application with the HTTP module for computing the sum of digits of a given number. Accept a number from an input text field of the client page and provide the output value as a response with the click event on a button.

Q7 a) Create an express application to accept Student Name, Reg. no., Roll. No., Mobile No. and Mail Id from the input text fields of a client page and perform a chain of validations on the data in the server application. Check all the fields are not empty, minimum and maximum lengths of data. Add a submit button on the client web page to submit the data and display the warning messages if required.

b) Create a node.js web server application with the HTTP module to produce a series of Armstrong numbers up to a given number. Accept a number from the input text field of the client page and provide the output values as a response with the click event on a button.

Q8 a) Implement a client-server application with the express, HTTP, and socket.io modules to display the student (your) details in the server console after getting a request (connection) from a client. Then Trigger events from the server to display a series of even numbers after every 2 seconds on the client web page. Finally, display Thank you in the server console with the termination of connect from the client.

b) Create a node.js web server application with the HTTP module for conversion between Celsius and Fahrenheit. Accept temperature values from the input text fields of the client page and provide the output values as a response with the click event on a button.

Q9 a) Implement an express application to accept a number from the input text field of a user web page and perform the basic arithmetic operations, increment (++), decrement (--), square, on the number inside a middleware function of server node.js application. Finally, display the output values in the user web page as a response to the click event from the button.

b) Create an express application for the following scenario to accept a file name from the input text field of a user web page and transfer the requested file using download () function from the server as a response to the button click event from the user web page. Create a text file and add student information (Reg. No., Name, Grade) in the server system.

Q10 a) Create an express application to accept a file name from the input text field of a user web page and transfer the requested file using sendFile() function from the server as a response to the button click event from the user web page. Create a text file and add student information (Reg. No., Name, Grade) in the server system.

b) Create a web server application with http module to provide the file name in the url of the client request from a browser. Include the url module in the server application and parse the url to get the file name from the client request. Access the file and display the content as a response to the client(user) request in the browser. Create a test.txt file and add personal information (name, roll no) in the server system.

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