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Roll no:72

Sub:701(Full Stack)

Assignment – 1

```
Que-1:
Index.html
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
 <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>My Web Server</title>
</head>
<body>
 <h1>Welcome to My Web Server!</h1>
  <form method="POST" action="/submit">
    <input type="text" name="data" placeholder="Enter some information" required>
    <button type="submit">Submit</button>
  </form>
</body>
</html>
```

```
Server.js
const http = require('http');
const fs = require('fs');
const path = require('path');
const url = require('url');
const querystring = require('querystring');
const PORT = 3000;
// Function to serve static files
const serveStaticFile = (res, filePath, contentType) => {
  fs.readFile(filePath, (error, content) => {
    if (error) {
       res.writeHead(500);
      res.end(`Sorry, there was an error: ${error.code} ..\n`);
    } else {
      res.writeHead(200, { 'Content-Type': contentType });
      res.end(content, 'utf-8');
    }
  });
};
// Create the server
const server = http.createServer((req, res) => {
  const parsedUrl = url.parse(req.url, true);
  // Handle GET request
  if (req.method === 'GET') {
    if (parsedUrl.pathname === '/') {
```

```
serveStaticFile(res, path.join(__dirname, 'public', 'index.html'), 'text/html');
} else if (parsedUrl.pathname === '/submit') {
  // Handle form submission here if needed
  res.writeHead(200, { 'Content-Type': 'text/plain' });
  res.end('Form submitted successfully!');
} else {
  // Serve other static files
  const filePath = path.join(__dirname, 'public', parsedUrl.pathname);
  const extname = String(path.extname(filePath)).toLowerCase();
  const mimeTypes = {
    '.html': 'text/html',
    '.js': 'text/javascript',
    '.css': 'text/css',
    '.json': 'application/json',
    '.png': 'image/png',
    '.jpg': 'image/jpg',
    '.gif': 'image/gif',
    '.svg': 'image/svg+xml',
    '.wav': 'audio/wav',
    '.mp4': 'video/mp4',
    '.woff': 'application/font-woff',
    '.ttf': 'application/font-ttf',
    '.eot': 'application/vnd.ms-fontobject',
    '.otf': 'application/font-otf',
    '.txt': 'text/plain',
    '.xml': 'application/xml',
    '.pdf': 'application/pdf',
    '.zip': 'application/zip',
    '.css': 'text/css',
```

```
};
      const contentType = mimeTypes[extname] || 'application/octet-stream';
      serveStaticFile(res, filePath, contentType);
    }
  }
  // Handle POST request
  else if (req.method === 'POST' && parsedUrl.pathname === '/submit') {
    let body = ";
    req.on('data', chunk => {
      body += chunk.toString(); // Convert Buffer to string
    });
    req.on('end', () => {
      const postData = querystring.parse(body);
      console.log('Received data:', postData.data);
      res.writeHead(200, { 'Content-Type': 'text/plain' });
      res.end('You entered: ' + postData.data);
    });
  } else {
    res.writeHead(404);
    res.end('404 Not Found');
  }
});
// Start the server
server.listen(PORT, () => {
  console.log(`Server is listening on http://localhost:${PORT}`);
});
```



Welcome to My Web Server!

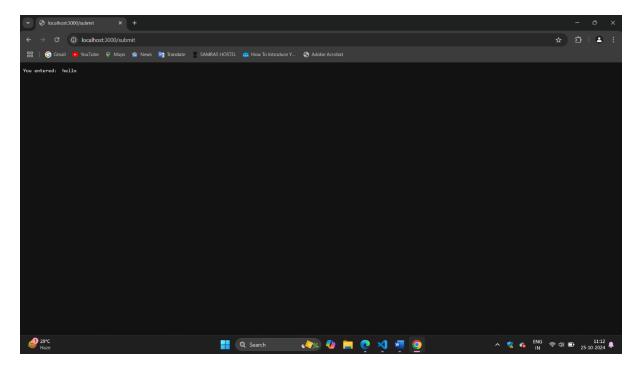




Welcome to My Web Server!







.....

```
Que-2:
Index.html
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Hello NodeJS</title>
  <script src="https://code.jquery.com/jquery-3.6.0.min.js"></script>
</head>
<body>
  <h1>Welcome to the NodeJS App</h1>
  <button id="getHelloButton">Get message</button>
  <div id="response"></div>
  <script>
    $(document).ready(function() {
```

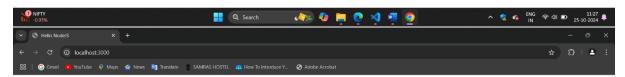
```
$('#getHelloButton').click(function() {
         $.ajax({
           url: '/gethello',
           method: 'GET',
           success: function(data) {
              $('#response').text(data);
           },
           error: function() {
              $('#response').text('Error occurred while fetching data.');
           }
         });
       });
    });
  </script>
</body>
</html>
server.js
const express = require('express');
const path = require('path');
const app = express();
const PORT = 3000;
app.use(express.static('public'));
app.get('/gethello', (req, res) => {
  res.send('Hello Nodejs!!');
});
app.get('/', (req, res) => {
  res.sendFile(path.join(__dirname, 'public', 'index.html'));
```

```
});
app.listen(PORT, () => {
  console.log(`Server is listening on http://localhost:${PORT}`);
});
```



Welcome to the NodeJS App

Get message



Welcome to the NodeJS App

Get message



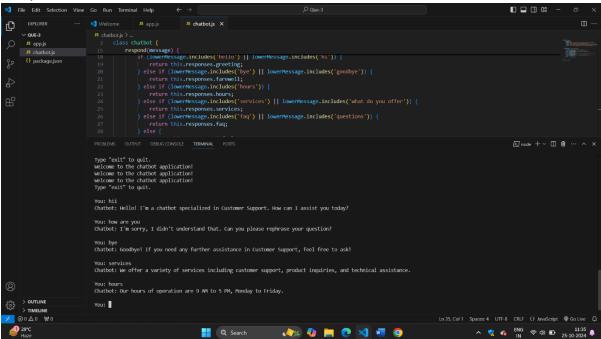
```
Que-3:
```

```
app.js
const readline = require('readline');
const Chatbot = require('./chatbot');
const chatbot = new Chatbot('Customer Support');
const rl = readline.createInterface({
  input: process.stdin,
  output: process.stdout
});
console.log('Welcome to the chatbot application!');
console.log('Type "exit" to quit.\n');
const askQuestion = () => {
  rl.question('You: ', (input) => {
    if (input.toLowerCase() === 'exit') {
      console.log('Chatbot: Goodbye!');
      rl.close();
      return;
    }
    const response = chatbot.respond(input);
    console.log(`Chatbot: ${response}\n`);
    askQuestion();
  });
};
askQuestion();
```

```
chatbot.js
class Chatbot {
  constructor(domain) {
    this.domain = domain;
    this.responses = {
      greeting: `Hello! I'm a chatbot specialized in ${this.domain}. How can I
assist you today?`,
      farewell: `Goodbye! If you need any further assistance in ${this.domain},
feel free to ask!`,
      hours: 'Our hours of operation are 9 AM to 5 PM, Monday to Friday.',
      services: 'We offer a variety of services including customer support,
product inquiries, and technical assistance.',
      fag: 'You can ask me about our services, hours of operation, or any other
questions you might have!',
      default: 'I'm sorry, I didn't understand that. Can you please rephrase
your question?`
    };
  }
  respond(message) {
    const lowerMessage = message.toLowerCase();
    if (lowerMessage.includes('hello') || lowerMessage.includes('hi')) {
      return this.responses.greeting;
    } else if (lowerMessage.includes('bye') ||
lowerMessage.includes('goodbye')) {
      return this.responses.farewell;
```

```
} else if (lowerMessage.includes('hours')) {
    return this.responses.hours;
} else if (lowerMessage.includes('services') ||
lowerMessage.includes('what do you offer')) {
    return this.responses.services;
} else if (lowerMessage.includes('faq') ||
lowerMessage.includes('questions')) {
    return this.responses.faq;
} else {
    return this.responses.default;
}
module.exports = Chatbot;
```

Output:



```
Que-4:
Index.html
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>WebSocket Chatbot</title>
  <style>
    body { font-family: Arial, sans-serif; }
    #chat { max-width: 600px; margin: auto; }
    #messages { border: 1px solid #ccc; height: 300px; overflow-y: scroll;
padding: 10px; }
    #input { width: 100%; padding: 10px; }
  </style>
</head>
<body>
  <div id="chat">
    <h1>Chatbot</h1>
    <div id="messages"></div>
    <input type="text" id="input" placeholder="Type your message..." />
  </div>
  <script>
    const messagesDiv = document.getElementById('messages');
    const inputField = document.getElementById('input');
```

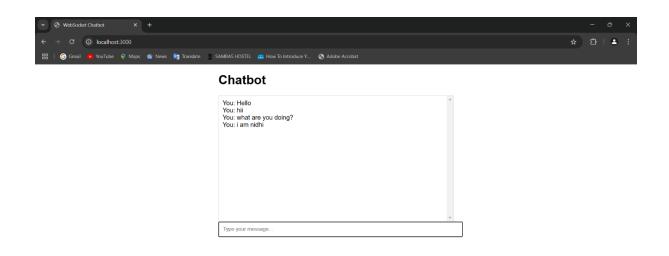
```
const socket = new WebSocket('ws://localhost:3000');
    socket.onopen = function() {
      console.log('WebSocket connection established.');
    };
    socket.onmessage = function(event) {
      const message = document.createElement('div');
      message.textContent = `Chatbot: ${event.data}`;
      messagesDiv.appendChild(message);
      messagesDiv.scrollTop = messagesDiv.scrollHeight; // Scroll to the
bottom
    };
    inputField.addEventListener('keypress', function(event) {
      if (event.key === 'Enter') {
        const userMessage = inputField.value;
        const message = document.createElement('div');
        message.textContent = `You: ${userMessage}`;
        messagesDiv.appendChild(message);
        socket.send(userMessage);
        inputField.value = "; // Clear input
      }
    });
  </script>
</body>
</html>
```

```
server.js
const express = require('express');
const WebSocket = require('ws');
const http = require('http');
const Chatbot = require('./chatbot');
const app = express();
const server = http.createServer(app);
const wss = new WebSocket.Server({ server });
const chatbot = new Chatbot('Customer Support');
app.use(express.static('public'));
wss.on('connection', (ws) => {
  console.log('New client connected');
  ws.on('message', (message) => {
    console.log(`Received: ${message}`);
    const response = chatbot.respond(message);
    ws.send(response);
```

```
ws.send(response);
});
ws.on('close', () => {
  console.log('Client disconnected');
```

```
});
});
const PORT = 3000;
server.listen(PORT, () => {
  console.log(`Server is listening on http://localhost:${PORT}`);
});
Chatbot.js
class Chatbot {
  constructor(domain) {
    this.domain = domain;
    this.responses = {
      greeting: `Hello! I'm a chatbot specialized in ${this.domain}. How can I
assist you today?`,
      farewell: `Goodbye! If you need any further assistance in ${this.domain},
feel free to ask!',
      hours: 'Our hours of operation are 9 AM to 5 PM, Monday to Friday.',
      services: 'We offer a variety of services including customer support,
product inquiries, and technical assistance.',
      faq: 'You can ask me about our services, hours of operation, or any other
questions you might have!`,
      default: `I'm sorry, I didn't understand that. Can you please rephrase
your question?`
    };
  }
```

```
respond(message) {
    const lowerMessage = message.toLowerCase();
    if (lowerMessage.includes('hello') || lowerMessage.includes('hi')) {
      return this.responses.greeting;
    } else if (lowerMessage.includes('bye') | |
lowerMessage.includes('goodbye')) {
      return this.responses.farewell;
    } else if (lowerMessage.includes('hours')) {
      return this.responses.hours;
    } else if (lowerMessage.includes('services') | |
lowerMessage.includes('what do you offer')) {
      return this.responses.services;
    } else if (lowerMessage.includes('faq') ||
lowerMessage.includes('questions')) {
      return this.responses.faq;
    } else {
      return this.responses.default;
    }
  }
}
module.exports = Chatbot;
Output:
```





Que-5:

output.on('close', () => {

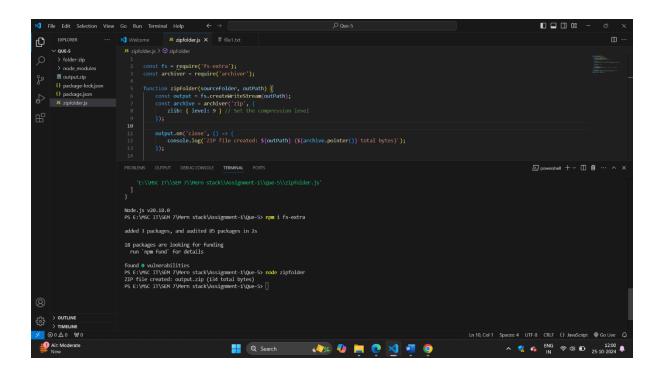
```
Zipfolder.js

const fs = require('fs-extra');
const archiver = require('archiver');

function zipFolder(sourceFolder, outPath) {
   const output = fs.createWriteStream(outPath);
   const archive = archiver('zip', {
      zlib: { level: 9 } // Set the compression level
   });
}
```

console.log(`ZIP file created: \${outPath} (\${archive.pointer()} total bytes)`);

```
});
  archive.on('error', (err) => {
    throw err;
  });
  archive.pipe(output);
  archive.directory(sourceFolder, false); // Include all files in the folder
  archive.finalize();
}
// Example usage
const folderToZip = 'folder-zip'; // Change this to the folder you want to zip
const outputZipPath = 'output.zip'; // Name of the output zip file
zipFolder(folderToZip, outputZipPath);
folder-zip => file1.txt
Output:
```



Que-5: Extract_zip_file.js

```
const fs = require('fs');
const unzipper = require('unzipper');

function extractZip(zipFilePath, outputFolder) {
  fs.createReadStream(zipFilePath)
    .pipe(unzipper.Extract({ path: outputFolder }))
    .on('close', () => {
      console.log(`Extraction completed: ${outputFolder}`);
    })
    .on('error', (err) => {
      console.error(`Error during extraction: ${err.message}`);
```

```
});
}

// Example usage

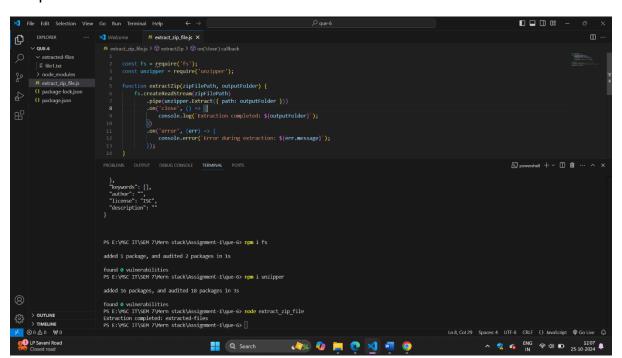
const zipFilePath = '../Que-5/output.zip'; // Adjust the path if needed
; // Change this to the path of your zip file

const outputFolder = 'extracted-files'; // Folder where extracted files will be
```

extractZip(zipFilePath, outputFolder);

Output:

saved



```
Que-6:
```

```
Promishifi.js

const fs = require('fs');
const util = require('util');
const unlink = util.promisify(fs.unlink);
async function deleteFile(filePath) {
    try {
        await unlink(filePath);
        console.log(`File deleted: ${filePath}`);
    } catch (err) {
        console.error(`Error deleting file: ${err.message}`);
    }
}
const fileToDelete = 'test.txt';
fs.writeFileSync(fileToDelete, 'This is a test file.');
deleteFile(fileToDelete);
```

Output:

```
| Program | Prog
```

Que-8:

```
fetchgoogle.mjs
import fetch from 'node-fetch';
import * as cheerio from 'cheerio'; // Use named import

async function fetchGooglePage() {
   try {
      const response = await fetch('https://www.google.com');

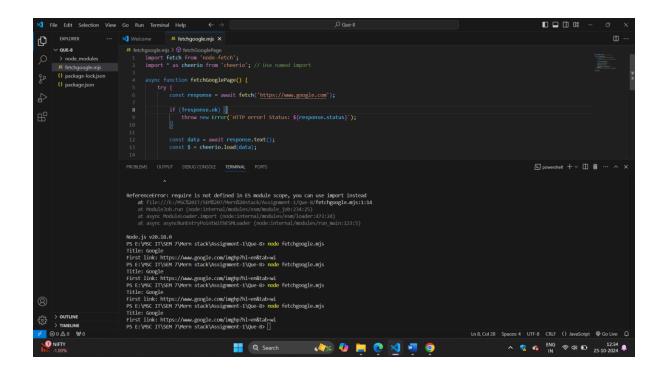
   if (!response.ok) {
      throw new Error(`HTTP error! Status: ${response.status}`);
   }
```

```
const data = await response.text();
const $ = cheerio.load(data);

const title = $('title').text();
console.log(`Title: ${title}`);

const firstLink = $('a').first().attr('href');
console.log(`First link: ${firstLink}`);
} catch (error) {
   console.error(`Error fetching Google page: ${error.message}`);
}
```

fetchGooglePage();



```
Que-10:
```

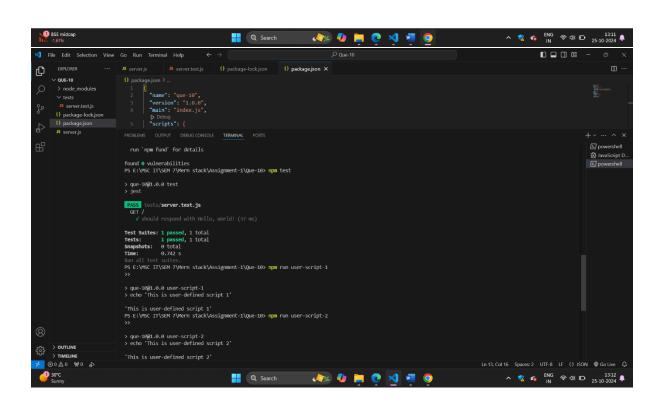
```
Server.js
const express = require('express');
const app = express();
const PORT = process.env.PORT || 3000;
app.get('/', (req, res) => {
  res.send('Hello, World!');
});
app.listen(PORT, () => {
  console.log(`Server is running on http://localhost:${PORT}`);
});
In tests folder=>
server.test.js
const request = require('supertest');
const express = require('express');
const app = express();
app.get('/', (req, res) => {
  res.send('Hello, World!');
});
```

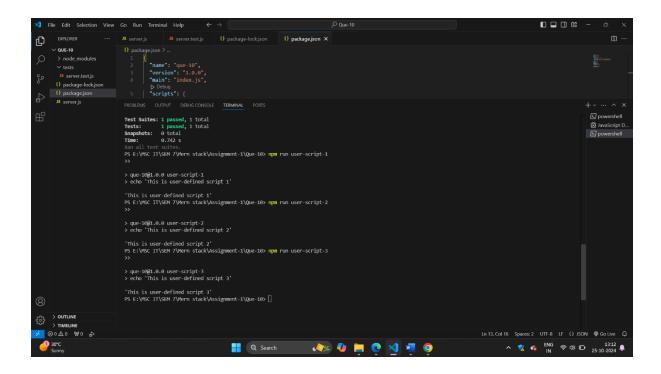
```
describe('GET /', () => {
  it('should respond with Hello, World!', async () => {
    const response = await request(app).get('/');
    expect(response.text).toBe('Hello, World!');
  });
});
Package.json
{
 "name": "que-10",
 "version": "1.0.0",
 "main": "index.js",
 "scripts": {
  "start": "node server.js",
  "test": "jest",
  "user-script-1": "echo 'This is user-defined script 1"",
  "user-script-2": "echo 'This is user-defined script 2"",
  "user-script-3": "echo 'This is user-defined script 3'"
 },
 "keywords": [],
 "author": "",
 "license": "ISC",
 "description": "",
 "dependencies": {
  "express": "^4.21.1",
  "supertest": "^7.0.0"
```

```
},
"devDependencies": {
   "jest": "^29.7.0"
}
```

Output:







Que-11:

```
Server.js
const express = require('express');
const app = express();
const PORT = process.env.PORT || 8000;

// Set EJS as the templating engine
app.set('view engine', 'ejs');

// Serve static files
app.use(express.static('public'));

// Sample static cricket scores
```

```
const scores = [
  {
    series: { name: 'IPL 2023' },
    team1: { name: 'Team A' },
    team2: { name: 'Team B' },
    status: 'Team A: 150/5 (18.0 overs) - Team B: 155/2 (17.0 overs) - Team B
won by 8 wickets'
  },
  {
    series: { name: 'ODI Series' },
    team1: { name: 'Team C' },
    team2: { name: 'Team D' },
    status: 'Team C: 200/10 (40.0 overs) - Team D: 201/3 (35.0 overs) - Team D
won by 7 wickets'
  }
];
// Home route
app.get('/', (req, res) => {
  res.render('index');
});
// Scores route
app.get('/scores', (req, res) => {
  res.render('scores', { scores });
});
```

```
// Start the server
app.listen(PORT, () => {
  console.log(`Server is running on http://localhost:${PORT}`);
});
Views folder
Scores.ejs
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Live Cricket Scores</title>
  <style>
    body {
      font-family: Arial, sans-serif;
      margin: 20px;
    }
    table {
      width: 100%;
      border-collapse: collapse;
      margin-top: 20px;
    }
    th, td {
      padding: 12px;
      text-align: left;
```

```
border-bottom: 1px solid #ddd;
   }
   th {
     background-color: #f2f2f2;
   }
   tr:hover {
     background-color: #f5f5f5;
   }
   h1 {
     color: #333;
   }
 </style>
</head>
<body>
 <h1>Live Cricket Scores</h1>
 <a href="/">Back to Home</a>
 <thead>
     Series
       Teams
       Status
     </thead>
   <% if (scores.length > 0) { %>
```

```
<% scores.forEach(match => { %>
        <%= match.series.name %>
          <%= match.team1.name %> vs <%= match.team2.name
%>
          <%= match.status %>
        <% }) %>
     <% } else { %>
      No live matches at the moment.
      <% } %>
   </body>
</html>
Index.ejs
<!DOCTYPE html>
<html lang="en">
<head>
 <meta charset="UTF-8">
 <meta name="viewport" content="width=device-width, initial-scale=1.0">
 <title>Live Cricket Score</title>
</head>
```

<body>

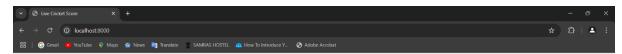
<h1>Welcome to Live Cricket Score</h1>

View Live Scores

</body>

</html>

Output:



Welcome to Live Cricket Score

View Live Scores

