

1. Simple HTTP Server Responding with "Hello, Students!"

javascript

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```
const http = require('http');

const server = http.createServer((req, res) => {
  res.writeHead(200, { 'Content-Type': 'text/plain' });
  res.end('Hello, Students!');
});

server.listen(3000, () => {
  console.log('Server running on http://localhost:3000');
});
```

✓ **Run the program** and visit: **<http://localhost:3000>**

2. Read Content from a File and Write to Another File

javascript

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

fs.readFile('source.txt', 'utf8', (err, data) => {
  if (err) {
    console.error('Error reading file:', err);
    return;
  }

  fs.writeFile('destination.txt', data, (err) => {
    if (err) {
      console.error('Error writing file:', err);
    } else {
      console.log('Content copied successfully!');
    }
  });
});
```

✓ **Make sure** `source.txt` exists before running this script.

3. HTTP Server Handling Different Routes

javascript

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```
const http = require('http');

const server = http.createServer((req, res) => {
  if (req.url === '/') {
    res.writeHead(200, { 'Content-Type': 'text/plain' });
    res.end('Hello, World!');
  } else {
    res.writeHead(404, { 'Content-Type': 'text/plain' });
    res.end('Page Not Found');
  }
});

server.listen(3000, () => {
  console.log('Server running on http://localhost:3000');
});
```

✓ **Visit:**

- **`http://localhost:3000/`** → *Hello, World!*
 - **`http://localhost:3000/anythingelse`** → *Page Not Found*
-

4. Retrieve OS Information Using OS Module

javascript

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```
const os = require('os');

console.log('Operating System:', os.type());
console.log('Platform:', os.platform());
console.log('Architecture:', os.arch());
console.log('Total Memory:', os.totalmem());
console.log('Free Memory:', os.freemem());
```

```
console.log('CPU Info:', os.cpus());  
console.log('Uptime:', os.uptime(), 'seconds');
```

✓ **Run this script** to see system details.

5. Manipulate File Paths Using the Path Module

javascript

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```
const path = require('path');  
  
const filePath = '/users/admin/docs/file.txt';  
  
console.log('Directory Name:', path.dirname(filePath));  
console.log('Base Name:', path.basename(filePath));  
console.log('File Extension:', path.extname(filePath));  
  
const newPath = path.join(__dirname, 'new_folder', 'new_file.txt');  
console.log('New Path:', newPath);
```

✓ **Output** will show different file path manipulations.

6. Command-Line Calculator

javascript

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```
const readline = require('readline');  
  
const rl = readline.createInterface({  
  input: process.stdin,  
  output: process.stdout  
});  
  
console.log('Simple Calculator: Enter operation (+, -, *, /)');  
  
rl.question('Enter first number: ', (num1) => {  
  rl.question('Enter second number: ', (num2) => {
```

```
    rl.question('Enter operation (+, -, *, /): ', (op) => {
      const a = parseFloat(num1);
      const b = parseFloat(num2);
      let result;

      switch (op) {
        case '+': result = a + b; break;
        case '-': result = a - b; break;
        case '*': result = a * b; break;
        case '/': result = b !== 0 ? a / b : 'Cannot divide by
zero'; break;
        default: result = 'Invalid operation';
      }

      console.log(`Result: ${result}`);
      rl.close();
    });
  });
});
```