

```
const http = require('http');
const fs = require('fs');
const url = require('url');
const os = require('os');
const path = require('path');
const readline = require('readline');
```

// 1. Simple HTTP Server

```
const server1 = http.createServer((req, res) => {
  res.writeHead(200, {'Content-Type': 'text/plain'});
  res.end('Hello, Students!\n');
});
```

```
server1.listen(3000, () => {
  console.log('Server listening on port 3000');
});
```

// 2. File Reading and Writing

```
fs.readFile('input.txt', 'utf8', (err, data) => {
  if (err) throw err;

  fs.writeFile('output.txt', data, (err) => {
    if (err) throw err;
    console.log('Data written to output.txt');
  });
});
```

```
});
```

// 3. Handling Different Routes

```
const server2 = http.createServer((req, res) => {  
  const parsedUrl = url.parse(req.url, true);  
  
  if (parsedUrl.pathname === '/') {  
    res.writeHead(200, {'Content-Type': 'text/plain'});  
    res.end('Hello, World!\n');  
  } else {  
    res.writeHead(404, {'Content-Type': 'text/plain'});  
    res.end('Page Not Found\n');  
  }  
});
```

```
server2.listen(3001, () => {  
  console.log('Server listening on port 3001');  
});
```

// 4. Retrieving Operating System Information

```
console.log('Operating System:', os.platform());  
console.log('CPU Architecture:', os.arch());  
console.log('Hostname:', os.hostname());  
console.log('Free Memory:', os.freemem() / 1024 / 1024, 'MB');  
console.log('Total Memory:', os.totalmem() / 1024 / 1024, 'MB');
```

// 5. Manipulating File Paths

```
const filename = 'myfile.txt';  
const directory = '/path/to/directory';  
  
console.log('Filename:', path.basename(filename));  
console.log('Extension:', path.extname(filename));  
console.log('Directory:', path.dirname(filename));  
console.log('Joined Path:', path.join(directory, filename));
```

// 6. Basic Calculator

```
const rl = readline.createInterface({  
  input: process.stdin,  
  output: process.stdout  
});  
  
rl.question('Enter the first number: ', (num1) => {  
  rl.question('Enter the second number: ', (num2) => {  
    rl.question('Enter the operation (+, -, *, /): ', (operator) => {  
      let result;  
      switch (operator) {  
        case '+': result = num1 + num2; break;  
        case '-': result = num1 - num2; break;  
        case '*': result = num1 * num2; break;  
        case '/': result = num1 / num2; break;
```

```
        default: console.log('Invalid operator'); return;
    }
    console.log('Result:', result);
    rl.close();
});
});
});
```