

## ASSIGNMENT

### 1) Illustrate the need of commander.js package?

The commander.js package is a popular Node.js library used to build command-line interfaces (CLI). It simplifies the process of creating commands, parsing arguments, and displaying help messages. Here's an illustration of why you need commander.js in a Node.js project:

Suppose you want to create a CLI tool like:

```
node app.js greet --name John
```

Manually parsing arguments (process.argv) is tedious:

```
-app.js
```

```
const args = process.argv.slice(2);
if (args[0] === "greet" && args[1] === "--name" && args[2]) {
  console.log(`Hello, ${args[2]}!`);
} else {
  console.log("Usage: node app.js greet --name <name>");
}
```

Using commander.js, your code becomes clean and powerful:

```
npm install commander
```

```
-app.js
```

```
const { Command } = require('commander');
const program = new Command();
program
  .command('greet')
  .description('Greet a user by name')
  .requiredOption('--name <name>', 'Name to greet')
  .action((options) => {
    console.log(`Hello, ${options.name}!`);
  });
```

```
});
```

```
program.parse(process.argv);
```

Now you can run:

```
node app.js greet --name John
```

And you automatically get help with:

```
node app.js -help
```

2) Implement small application which will make use of mentioned package?

Code:

```
const { Command } = require('commander');
```

```
const program = new Command();
```

```
program
```

```
  .name('greet-cli')
```

```
  .description('Simple CLI to greet users and show time')
```

```
  .version('1.0.0');
```

```
program
```

```
  .command('greet')
```

```
  .description('Greet a user by name')
```

```
  .requiredOption('-n, --name <name>', 'Name of the user')
```

```
  .option('-t, --time', 'Show current date and time')
```

```
  .action((options) => {
```

```
    console.log(`Hello, ${options.name}!`);
```

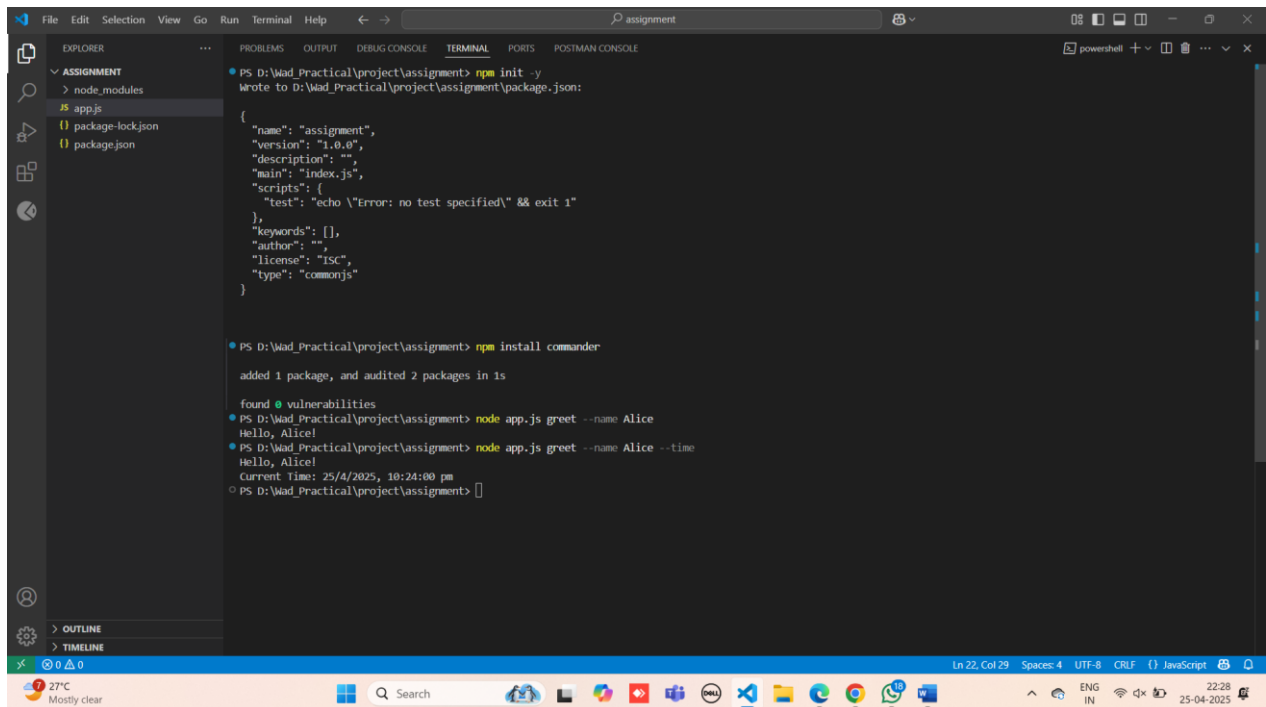
```
    if (options.time) {
```

```
      console.log(`Current Time: ${new Date().toLocaleString()}`);
```

```
    }
```

```
  });
```

```
program.parse(process.argv);
```



The screenshot shows a Visual Studio Code editor window with a terminal at the bottom. The terminal is running a PowerShell session in the directory `D:\Wad_Practical\project\assignment`. The following commands and their outputs are visible:

```
PS D:\Wad_Practical\project\assignment> npm init -y
Wrote to D:\Wad_Practical\project\assignment\package.json:

{
  "name": "assignment",
  "version": "1.0.0",
  "description": "",
  "main": "index.js",
  "scripts": {
    "test": "echo \"Error: no test specified\" && exit 1"
  },
  "keywords": [],
  "author": "",
  "license": "ISC",
  "type": "commonjs"
}

PS D:\Wad_Practical\project\assignment> npm install commander
added 1 package, and audited 2 packages in 1s
found 0 vulnerabilities

PS D:\Wad_Practical\project\assignment> node app.js greet --name Alice
Hello, Alice!

PS D:\Wad_Practical\project\assignment> node app.js greet --name Alice --time
Hello, Alice!
Current Time: 25/4/2025, 10:24:00 pm
PS D:\Wad_Practical\project\assignment>
```

The Explorer view on the left shows the file structure with `package-lock.json` and `package.json` files. The bottom status bar indicates the current file is `Ln 22, Col 29` in a `JavaScript` file.

### 3) Illustrate the need for code of ethics?

A Code of Ethics is a set of principles and guidelines that help individuals or organizations distinguish right from wrong in their work or behavior.

Need a Code of Ethics

#### 1.Guides Ethical Decision-Making

Scenario: A software developer is asked to build a feature that collects user data without their consent.

Without a Code of Ethics: They might proceed, thinking, "It's just part of the job."

With a Code of Ethics: They refer to principles like "Respect user privacy" or "Do no harm" and raise concerns.

Helps in doing what's right, not just what's asked.

#### 2. Builds Trust and Reputation

Example: If a tech company is transparent, respects user data, and treats employees fairly, it earns public trust.

Ethics Trust Long-term Success

#### 3.Reduces Legal and Moral Risks

Example: A business that discriminates in hiring may face legal action. A code of ethics ensures fair treatment and compliance with laws.

Prevents conflicts, scandals, and lawsuits.

#### 4. Creates a Positive Work Culture

Scenario: A company's code emphasizes honesty, collaboration, and respect.

Result: Employees feel safe, valued, and motivated to contribute positively.

Ethics = Strong, healthy, inclusive workplace

#### 5. Consistency in Behavior

Example: If everyone follows the same ethical code, there's less confusion or favoritism.

Everyone knows what is expected from interns to CEOs.