Essential Angular CLI Commands Guide

Creating and Managing Projects

- **Create a New Project:**

```
ng new my-app
```

Initializes a new Angular application with default configurations, including the initial setup for routing, styles, and testing.

Generating Components, Modules, and More

- **Generate a Component:**

```
ng generate component component-name
```

Creates a new component with the specified name. This includes the component's TypeScript, HTML, and CSS files, and updates the parent module.

- **Generate a Module:**

```
ng generate module module-name
```

Creates a new Angular module. Modules help organize the application into cohesive blocks of functionality.

- **Generate a Service:**

```
ng generate service service-name
```

Creates a new service. Services are used to encapsulate reusable logic, often related to data access or business rules.

- **Generate a Directive:**

```
ng generate directive directive-name
```

Creates a new directive. Directives are used to extend the behavior of elements in the application.

- **Generate a Pipe:**

```
ng generate pipe pipe-name
```

Creates a new pipe. Pipes are used for transforming data in templates.

- **Generate a Class or Interface:**

```
ng generate class class-name
ng generate interface interface-name
```

Creates a new class or interface. These are often used for defining data models and structures.

Running and Serving Applications

- **Serve the Application:**

```
ng serve
```

Builds and serves the app, typically at `http://localhost:4200/`. It watches the files and rebuilds the app if changes are detected.

- **Build the Application:**

```
ng build
```

Compiles the application into an output directory (`dist/`). You can also specify different build configurations (e.g., production).

Testing and Linting

- **Run Unit Tests:**

```
ng test
```

Executes unit tests with Karma. It runs the tests in a browser environment and provides detailed feedback.

- **Run End-to-End Tests:**

```
ng e2e
```

Runs end-to-end tests using Protractor. These tests are designed to simulate user interactions and verify the application's functionality as a whole.

- **Lint the Project:**

```
ng lint
```

Analyzes the project's code for linting errors. Linting helps maintain code quality and consistency by catching common programming errors and style issues.

Configuration and Maintenance

- **Update Angular and Dependencies:**

```
ng update
```

Updates Angular and its dependencies to the latest version, ensuring your project stays current with the latest features and fixes.

- **Add a Feature or Library:**

```
ng add library-name
```

Adds a library or feature to the project, such as `@angular/material`. This command installs the package and configures it in your project.

- **Run Custom Schematics:**

```
ng generate @schematics/package-name:schema-name
```

Runs a custom schematic from a specified package. Schematics are templates that help automate tasks in your Angular project.

Other Useful Commands

- **List All Available Commands:**

```
ng help
```

Displays help and lists all available Angular CLI commands, along with their options and usage examples.

- **Get Angular CLI Version:**

```
ng version
```

Shows the versions of Angular CLI and other Angular packages used in the project.