

8. User Interaction and Interfaces

- **Web Dashboard:** Allows users to submit requirements, track progress, and view generated outputs.
- **CLI Tool:** Lightweight interface for developers who prefer command-line environments.
- **IDE Plugins:** Direct integration with IDEs such as VS Code to allow seamless development workflows.

9. Scalability and Extensibility

- Designed with a **modular architecture** that allows new frameworks, programming languages, or LLMs to be integrated with minimal reconfiguration.
- Supports **open-source contributions** in future iterations, making the system community-driven and continuously evolving.

10. Security and Compliance

- Ensures generated code follows **secure coding practices** to prevent vulnerabilities.
- Provides **role-based access controls** for collaborative projects.
- Maintains **data privacy compliance** when handling user inputs and project information.

2.2.3 External Interface Requirements

2.2.3.1 User Interfaces

The *CodeCodez* system is designed to be lightweight and developer-friendly by adopting a **Command-Line Interface (CLI)** as its primary interaction medium.

- **Interaction Flow:**

Users input natural language project specifications directly into the CLI prompt. The system then processes the request and generates the corresponding project structure, including code files, configurations, and documentation.

- **Output Presentation:**

Generated projects are displayed as a **directory structure**. Users can navigate, view summaries of generated files, and export them to their local environment.

- **User Experience Design:**

- Minimalistic text-based interface aligned with developer workflows.