- Open-source distribution of the system to promote community collaboration.
- Integration with **Ollama** or lightweight LLM deployment platforms to reduce GPU dependency.

2.2.2 Overall Description

2.2.2.1 Product Perspective

The *CodeCodez* system is envisioned as an **intelligent software development assistant** that seamlessly integrates into the broader ecosystem of software engineering tools and practices. It is not a standalone entity but rather a **supportive and augmentative system** that extends existing development workflows by automating repetitive tasks, reducing cognitive effort, and accelerating project delivery.

Position in the Larger System

- *CodeCodez* functions as a **middleware layer** between human developers and production-ready software systems.
- It bridges the gap between **natural language requirements** and **technical project implementation**, acting as an AI-driven translator that ensures user intent is correctly captured and transformed into structured, executable artifacts.
- While traditional software development environments focus on manual coding, configuration, and documentation, *CodeCodez* leverages **Large Language Models (LLMs)** and **hierarchical task decomposition** to handle these processes automatically.

System Interfaces

The product is designed to integrate with multiple development environments and tools:

1. **User Input Interface**
    - Natural Language Processing (NLP) interface where users provide project requirements in plain English (or other supported languages).
    - Can be accessed via a **web application, CLI tool, or IDE plugin** (e.g., Visual Studio Code extension).
2. **Internal Processing**
    - **Requirement Decomposition Engine:** Breaks down user inputs into structured subtasks using tree/graph-based planning.