

AI-Powered Automated Task Prioritization System

1. Introduction

- **Project Overview** : Optimize daily task management with AI-powered tools for automated task prioritization.
- **Problem Statement**
 - Challenges in manual task prioritization.
 - Dilemma of Planning v/s Execution
 - Need for AI-assisted decision-making.
- **Solution Overview**
 - AI enhances task prioritization
 - **Overview of Features** :
 - **Speech To Text** : No need to open your laptops, your voice is enough !
 - **Multiple Language Support** : Speak in the language you want !
 - **Image Analysis** :

For example , A colleague at the office hands me over , a set of tasks written on a sticky note . I can just click a picture and upload

- **Text Extraction from Documents** :

For example , The tasks of my day , are affected by the minutes of a meeting , that is sent to me as a document . I can just upload

2. Technology Stack

- **Frontend**: Next.js, TailwindCSS
- **Backend**: Next.js , Node.js, Express.js
- **Database**: MongoDB with Prisma (as ORM)
- **Authentication & Security**:
 - OAuth for API authentication
 - OAuth for Login and Sign up on the application

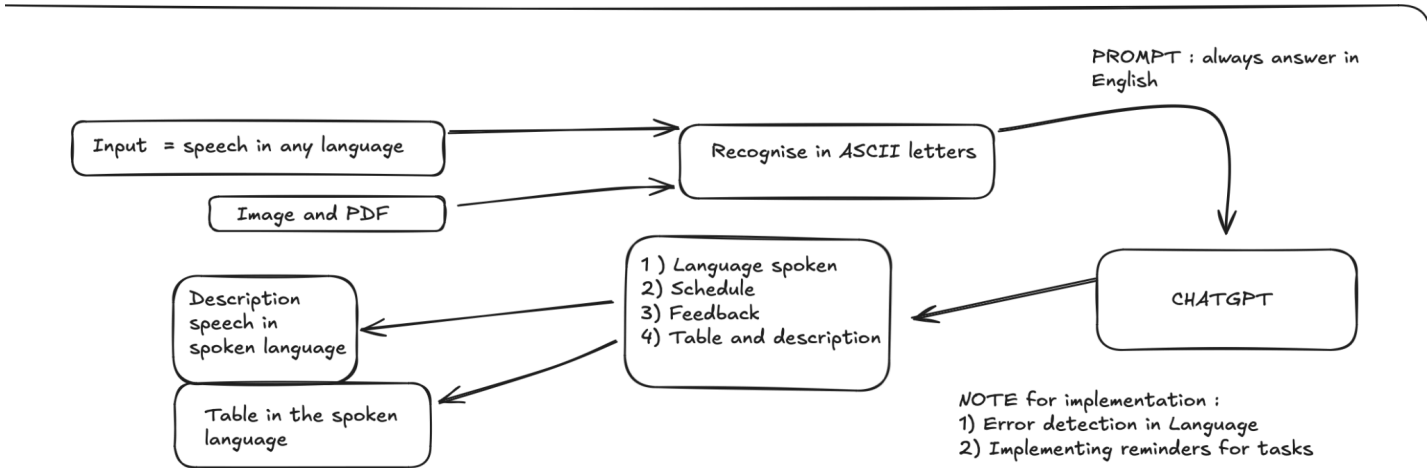
3. AI Services Integration

- **Azure Vision API** (Image-based task recognition)
- **Speech to Text** (Voice input for task creation)
- **Text to Speech** (AI-generated reminders)
- **Document Intelligence** (Extracting tasks from documents)
- **ChatGPT-4 for Prioritization** (Task ranking and suggestions)

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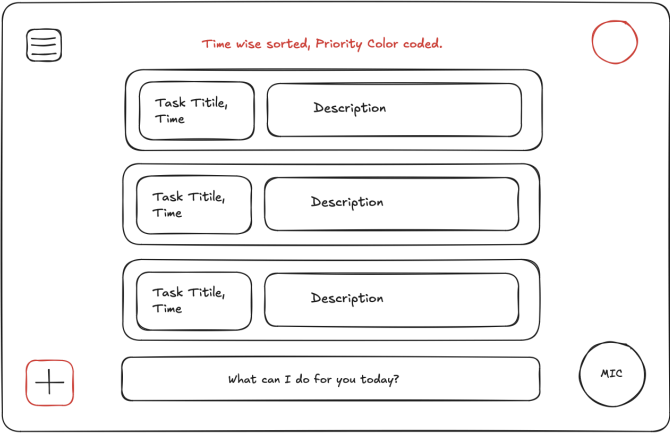
3. System Architecture & Data Flow

- High-Level Architecture Diagram

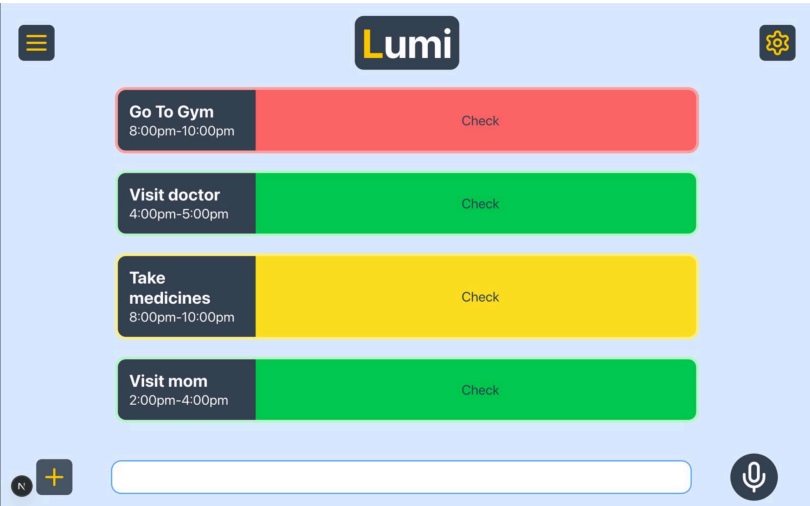


- Data Flow Diagrams

- User interactions with frontend



Wireframing of Front - End



Prototype Output for Front - End

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- Backend API handling and AI service integrations

INPUT

Take input from voice and update task list accordingly,
Generate respective output in voice as well

NOTE : Can integrate , google cloud , Microsoft cloud ,

1. Take voice/image input/PDF input --> LANGUAGE !
- 2 a) Extract task related info using NLP.
b) Extract info using Computer Vision from images
c) Extract info from PDFs using Document Intelligence

NOTE : User specific account/log in /

NOTE: Use a base model , and fine tune the model , with added inputs

OUTPUT:

1. Voice FEEDBACK after each update.
2. Tabular form of tasks (priority wise)

4. Core Features and Azure AI Integration

1. Task Input and Analysis

- Use Azure AI Language service to analyze task descriptions for key information, sentiment, and urgency.
- Implement natural language processing to extract deadlines, importance, and task categories.

2. Image-Based Task Creation

- Utilize Azure AI Computer Vision to allow users to upload images of handwritten to-do lists or whiteboards.
- Extract text from these images and convert them into digital tasks.

3. Task Prioritization Algorithm

- Employ GPT-4 model to develop an intelligent prioritization algorithm that considers various factors like deadlines, importance, estimated time, and user preferences.
- Use the model to generate personalized task recommendations and explanations for prioritization decisions.

4. Multi-Language Support

- Integrate Azure AI Translation service to enable users to input tasks in their preferred language.

5. Document-Based Task Extraction

- Use Azure AI Document Intelligence to parse through uploaded documents (e.g., meeting minutes, project briefs) and automatically extract potential tasks.

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5. Challenges & Future Improvements

- **Challenges :**
 - Implementing APIs for voice recording
 - Implementing APIs
- **Future Improvements :**
 - Content Safety
 - Multiple Uploads in parallel
 - Mobile App Version
 - Support for even more languages

10. Conclusion

- Final thoughts and recommendations