Lab 1 Schedule Puzzle Product Outline

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1. Introduction

- Societal Problem
    - People have difficulty organizing and prioritizing tasks
    - Plans are too rigid and people fail to follow through

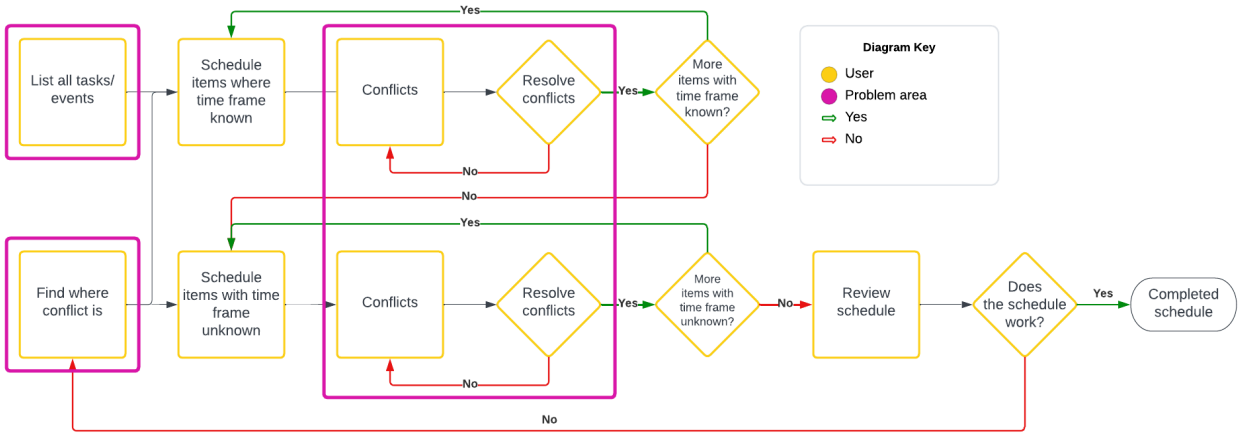

Figure 1: Current Process Flow

- Solution - Schedule Puzzle
    - Web application with automated schedule creation
    - Prioritize selected tasks
    - Semi-automatic conflict resolution

2. Schedule Puzzle Product Description

- Automated schedule creation based on user supplied tasks
    - User inputs name of task, duration, number of repetitions
    - Schedule automatically puts together schedule based on above
- Basic calendar functionalities
    - Import and export calendars
    - Multiple calendar interfaces

- Label tasks
- Notify users of tasks

- Prioritization and customization
  - Prioritization based on categories, deadlines, days, times of days
  - Semi-automatic conflict resolution
  - Custom categories for labeling and prioritization

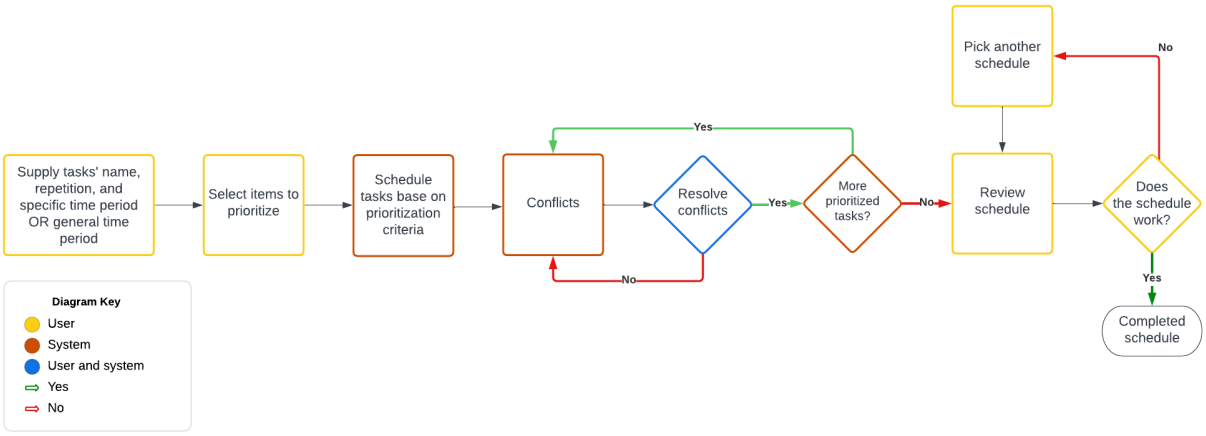

Figure 2: Solution Process Flow

2.1. Key Product Features and Capabilities

- Automate schedule creation based on user supplied tasks and events
- Unique because it allows for automated schedule creation based on user inputs to all individuals
- This product allows for users to input tasks at the start
- As a result, user is also able to help with conflict resolution
- Alleviate rigid schedule creation by allowing users to work together with the system

2.2. Major Components (Hardware/Software)

- Hardware

    - Personal Computer: Desktop or laptop
    - Cellular Device
    - Tablet
- Software
    - Frontend: HTML, JavaScript, CSS
    - Backend: Python
    - Database: Amazon Web Services, PostgreSQL
    - Framework: Django
    - IDE: VSCode
    - Repository: GitHub

3. Identification of Case Study

- Who is this product for?
    - Individuals who struggle with time management
    - Individuals who already use calendar applications
- Why is this product being developed?
    - Opportunities to be productive are often missed and important tasks are often neglected
    - Alleviate stress that comes with schedule creating
- Who else might use this in the future?
    - Students
    - Administration clerks
    - Organization leadership
    - Starting professionals

4. Schedule Puzzle Product Prototype Description

Feature	Real World Product	Prototype
Basic Calendar Functionalities		
Import existing schedules (.ics, .csv)	Fully functional	Fully functional
Export existing schedules (.ics, .csv)	Fully functional	Fully functional
Has daily/weekly/monthly calendar interface	Fully functional	Fully functional
Modify tasks	Fully functional	Fully functional
Create notes inside of tasks	Fully functional	Fully functional
Send reminders/notifications (push, text, email)	Fully functional	Fully functional
Automation, Customization, and Prioritization		
Automatic schedule creation	Fully functional	Fully functional
Semi-automatic conflict resolution	Fully functional	Fully functional
Custom prioritization	Fully functional	Partially functional
Natural language processing	Fully functional	Partially functional
Behavioral suggestions	Fully functional	Partially/Eliminated

Figure 3: Real World Product vs. Prototype

4.1. Prototype Architecture (Hardware/Software)

- Hardware Utilized
    - Personal Computer

- Smartphone

- Software Utilized
  - Frontend: HTML, JavaScript, CSS
  - Backend: Python
  - Database: Amazon Web Services, PostgreSQL
  - Framework: Django
  - IDE: VSCode
  - Repository: GitHub

- Prototype MFCD:

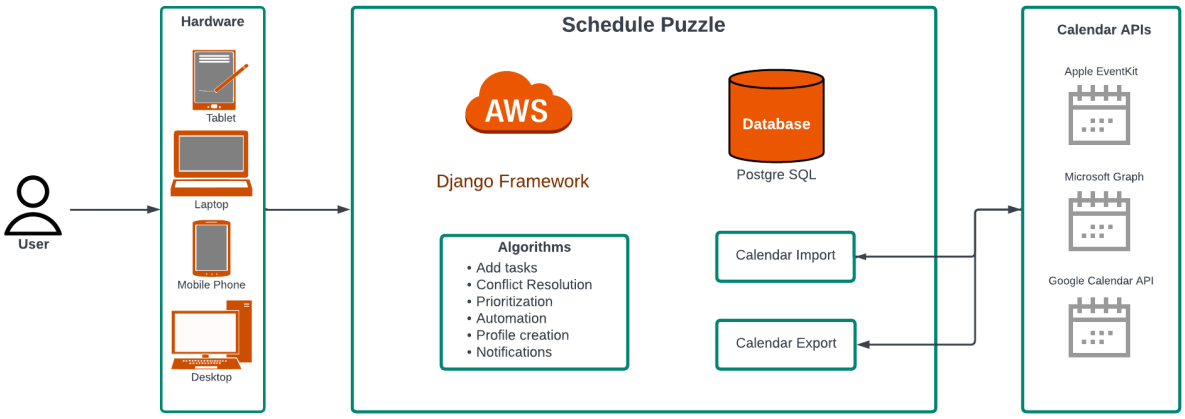

Figure 4: Major Functional Component Diagram

4.2. Prototype Features and Capabilities

- Program demonstrates schedules can be generated quickly and uniquely to meet individuals needs

- Users will be able to create and account to store, edit, and view their various schedules

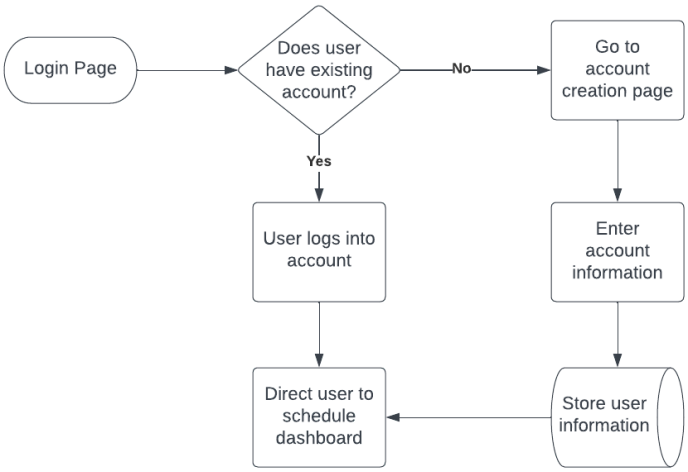

Figure 5: Profile Creation Algorithm

- Users will have the ability to add tasks by entering in the task fields or by utilizing Natural Language Processing

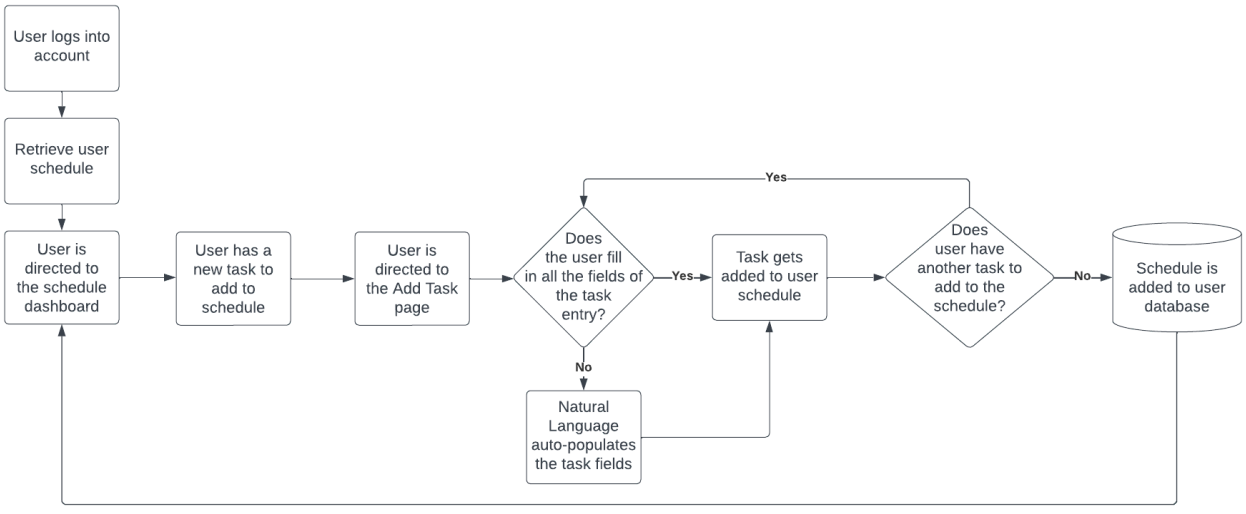

Figure 6: Add Task Algorithm

- Addresses the risks by carefully considering all potential hazards and tackling them with industry best practices
- Helps people create schedules and helps alleviate stress and errors that come with making schedules
- Brings automatic schedule creation to individuals

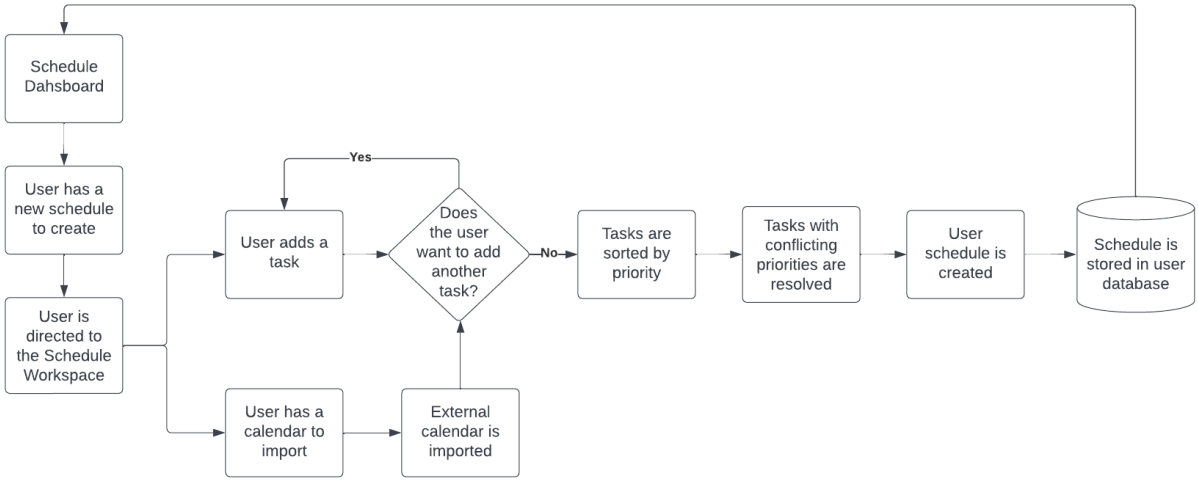

Figure 7: Automated Schedule Creation Algorithm

- Users will have the ability to opt for notifications via Email, text, or push notifications

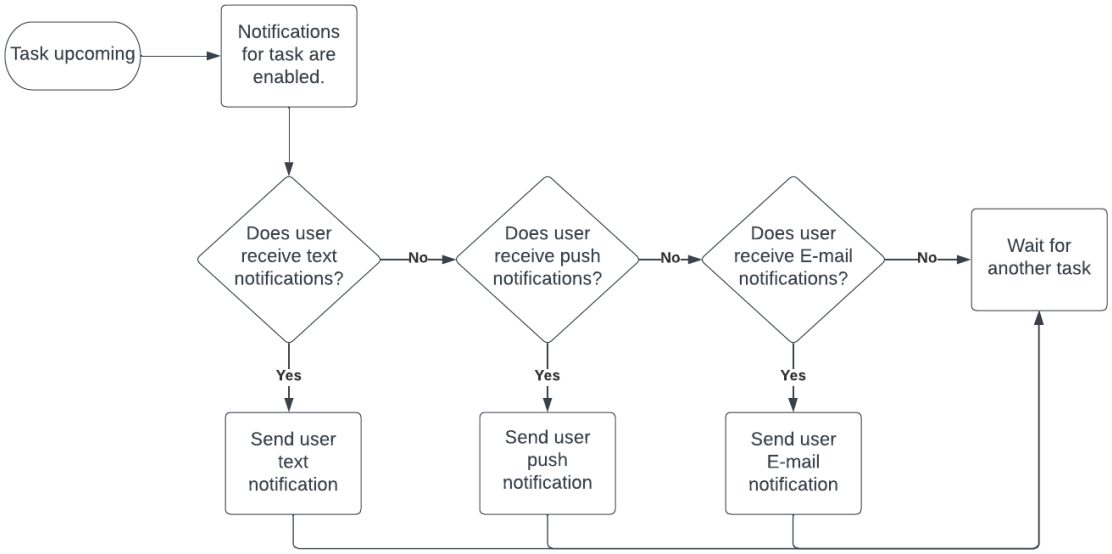

Figure 8: Notification Algorithm

- Allows users to import from external calendar applications, such as Apple Calendar, Microsoft Outlook, and Google Calendar

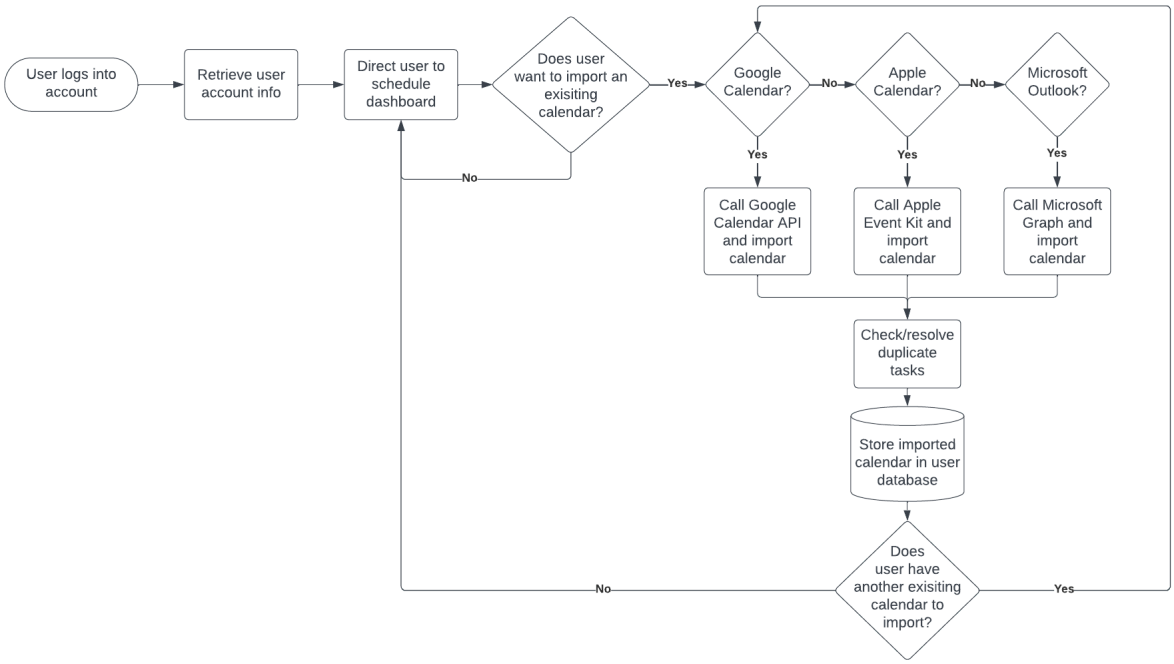

Figure 9: Import Calendar Algorithm

- Allows users to export to external calendar applications, such as Apple Calendar, Microsoft Outlook, and Google Calendar

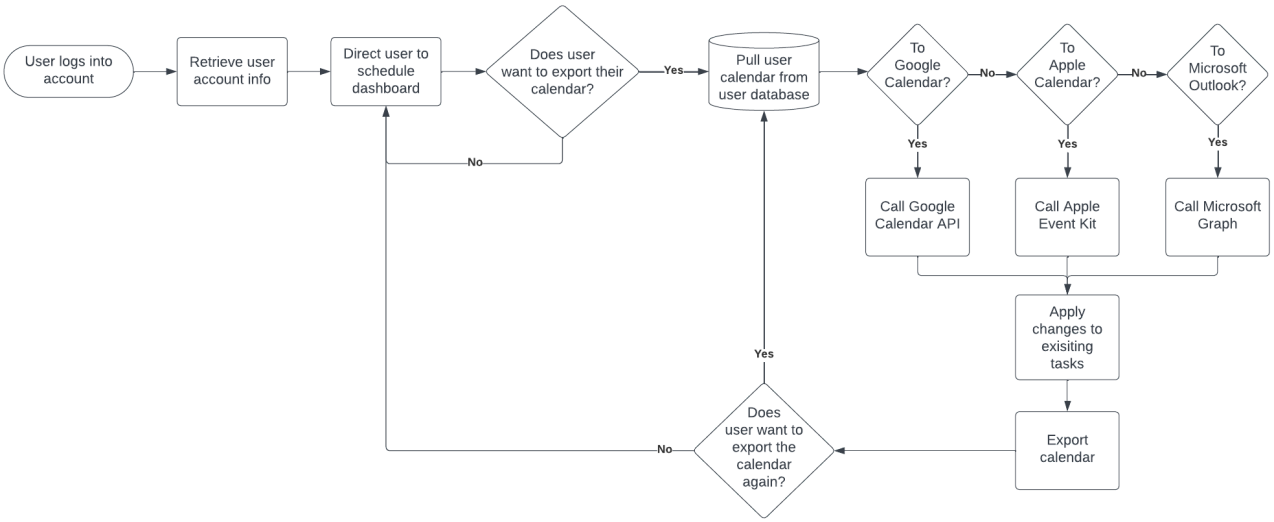

Figure 10: Export Calendar Algorithm

- Semi-Automatic Conflict Resolution will alleviate any tasks with conflicting priorities

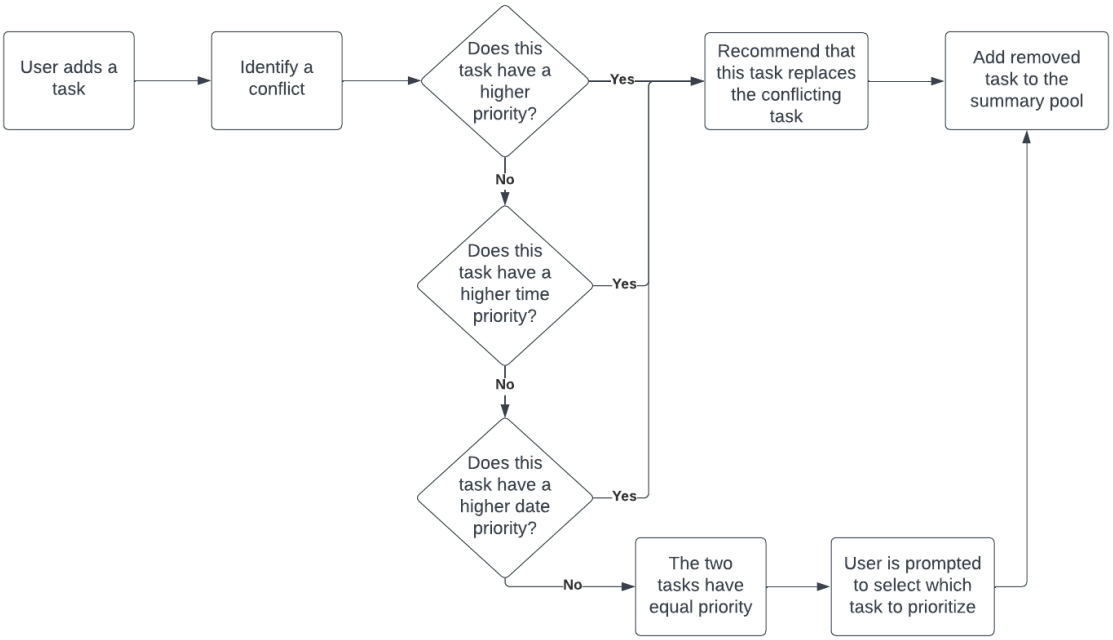

Figure 11: Conflict Resolution Algorithm

- Improve the rate at which people accomplish their high priority tasks

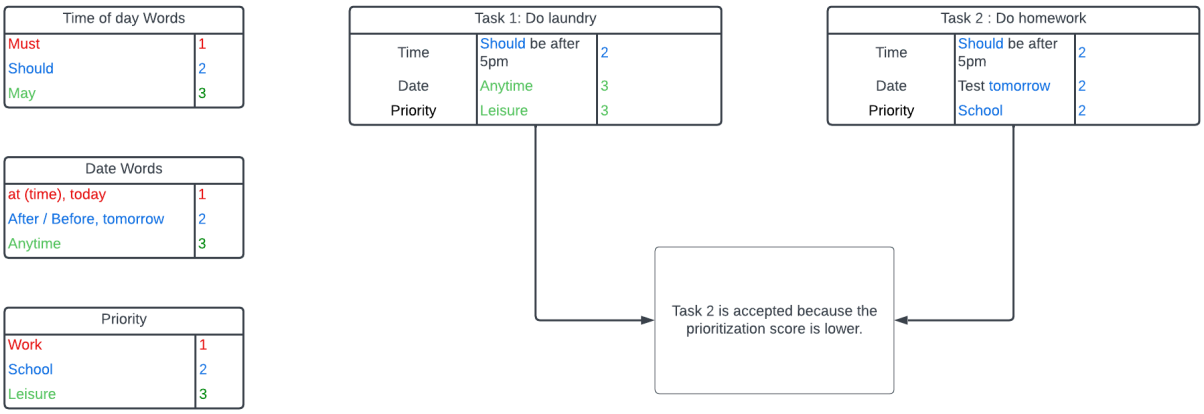

Figure 12: Prioritization Example

4.3. Prototype Development Challenges

- Learning the skills to implement the Django framework.
- Learning new languages and API's
- Implementing NLP into our product

5. Glossary

- Task: catch all term for things that need to be completed by the user
    - One time task: appointments, meetings
    - Recurring task: chores, school, work

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