Lab 2 Schedule Puzzle Product Specification Outline

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Table of Contents

List of Figures

List of Tables

1   Introduction

1.1   Purpose

The purpose of this document is to explain what Schedule Puzzle is by providing its motivation and utility.

1.2   Scope

People have many tasks and comparatively little time. In a 2022 study of 500 employees across several industries, less than 18% have a proper time management system, with the other 82% using a list or their email inbox as a time management tool (Richardson, 2022). From the same study, 12.5% of people felt as if they never had control over their work (Richardson, 2022).

Scheduling is a solution to this. Scheduling has benefits such as improved structure and increased productivity (Prabhu, 2022). By scheduling tasks, people have more control and understanding. The problem is scheduling does not come naturally to all. The current approach to scheduling is all done by the user. The typical approach is to first schedule tasks with a specific time frame known, then schedule tasks that do not have a specific time frame known. However, a person may create a schedule only to realize the schedule does not work for them, resulting in that person starting over.

The solution is automated scheduling. The system and the user work together to create a schedule. The user inputs their tasks, and the system prioritizes and schedules tasks based on user given tasks and events. This is the goal of Schedule Puzzle.

1.3   Definitions, Acronyms, and Abbreviations

Application Programming Interface (API): Software that allows two or more computer programs to communicate.

Amazon Web Services (AWS): Service that provides on-demand cloud computing and APIs to individuals and organizations.

Cascading Style Sheets (CSS): Style sheet language used to format markup languages such as HTML.

Django: Python based framework.

HyperText Markup Language (HTML): Markup language used to display web pages.

Integrated Development Environment (IDE): Software application used for software development

Natural Language Processing (NLP): Machine learning used to interpret human language.

One time task: Tasks that do not repeat on a normal basis such as appointments or meetings.

PostgreSQL: Relational database management system.

Task: Catch all term for things that need to be completed by the user.

Recurring task: Tasks that do repeat on a normal basis such as school or work.

1.4   References

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1.5   Overview

The remaining structure of the document is as follows. Section 2 provides a general

description of the prototype architecture and functions. Section 3 provides functional,

performance, and non-functional requirements for Schedule Puzzle.

2   Overall Description

2.1   Product Perspective

Schedule Puzzle is a semi-automatic schedule creator that uses user-supplied tasks. In

addition to having basic calendar functionalities, Schedule Puzzle aids the user in creating a

custom schedule. Figure 1 illustrates the flow of Schedule Puzzle. The user supplies the basic

information of their tasks. Schedule Puzzle ranks the tasks based on priority. A schedule is

created for the user based on the user's inputs.
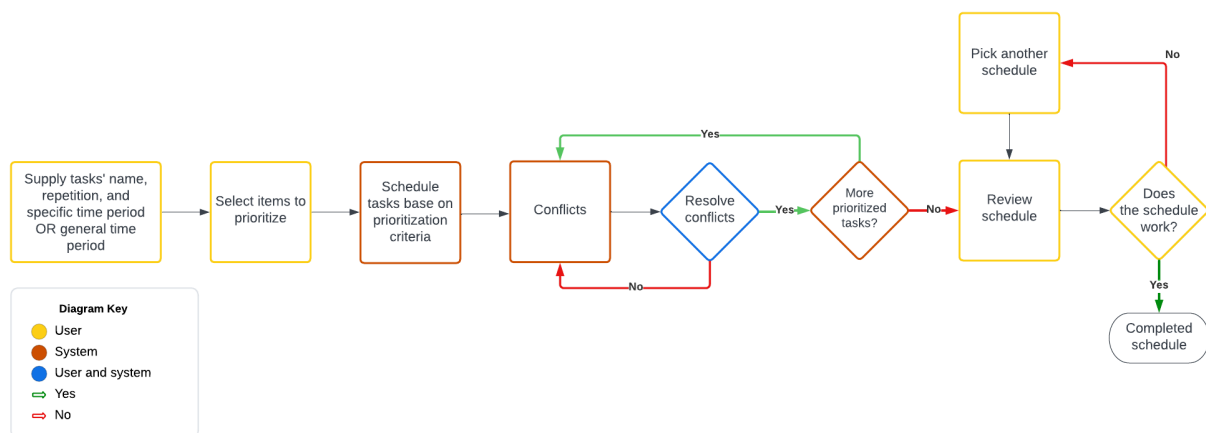
Figure 1: Solution Process Flow

2.2   Product Functions

The aim of the Schedule Puzzle prototype is to have all basic calendar functionalities and some automation and prioritization features implemented. Table 1 displays all of the main features in Schedule Puzzle, if they appear in the real world product, and if they appear in the prototype.

Feature	Real World Product	Prototype
Basic Calendar Functionalities		
Log in to profile	Fully functional	Fully function
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/Eliminated
Behavioral suggestions	Fully functional	Eliminated

Table 1: Real World Product vs. Prototype

2.3   User Characteristics

End users of Schedule Puzzle have one role: a scheduler. As a scheduler, users have full

access to Schedule Puzzle's features. Schedulers will not have access to other schedulers'

accounts.

Administrators of Schedule Puzzle can also be schedulers. However, administrators have

the responsibility to provide schedulers a smooth experience. Two of the main roles of an

administrator are encrypting users' information and providing fully functional features in

Schedule Puzzle.

2.4   Constraints

N/A

2.5   Assumptions and Dependencies

N/A

3   Specific Requirements

3.1   Functional Requirements

3.2   Performance Requirements

3.3   Assumptions and Constraints

3.4   Non-Functional Requirements

Appendix