SDP: 401 Senior Project - USChedule

4.1 Plan Introduction

This Software Development Plan provides the details of the planned development for the USChedule Web Application which provides an application to generate work schedules for employees in an organization.

The application will take the residents' preferences and then generate a call schedule by the constraints inputted by the administrator. The application will also be generalized to be usable by other industries such as restaurants, retail, etc. The purpose is to make scheduling efficient, simple and scalable.

4.1.1 Project Deliverables

- D #01: Project Proposal (Week 2)
    - Includes description, which provides a high-level overview of the project, compares it to any software programs already in existence, lists its most important features, and discusses the hardware and software it requires, and justification which explains the reason for the project and why it is appropriate for this class.
- D #01: Requirements specification (Week 2)
    - Captures the low-level requirements for the project and elaborates on the details of the contract between the instructor and the students.
- D #02: Initial Development Schedule (Week 5)
    - Includes all of the tasks which will occur during development
- D #03: Software Development Plan (Week 7)
    - Describes the process that will be used to produce all required documents and software
- D #04: Software Design Description (Week 12)
    - Details all of the different parts of the software, hardware, and organization for the project
- D #05: Software Design Description (Week 12)
    - Details all of the different parts of the software, hardware, and organization for the project
- D #06: Test and Integration Plan (Week 14)
    - Introduces software testing strategies, specifies the outline of the Unit Test and Integration Plan document, and provides a detailed description of each section of the Plan document
- D #07: User's Manual (Week 15)
    - Details how to download and use all the components and services in the software

- D #08: User's Manual (Week 16)
    - Details how to download and use all the components and services in the software
- D #09: Final Project Presentation
- D #10: Oral Status Reports
- D #11: Written Status Reports

4.2 Project Resources

4.2.1 Hardware Resources

- Machines
    - Computer with following capabilities:
        - Pentium processor at 90 MHz or higher
        - Minimum 10mb hard drive space
        - Minimum 16mb of RAM
        - 800x600 256 Colors Display

4.2.2 Software Resources

- Text Editors
    - VS Code v1.38 and up
- Compilers
    - Terminal
- Third party software
    - MySQL
    - Trello
    - Google Drive
    - Sketch
- Operating systems
    - MacOS Mojave 10.14 and up

4.3 Project Organization

Backend, databases

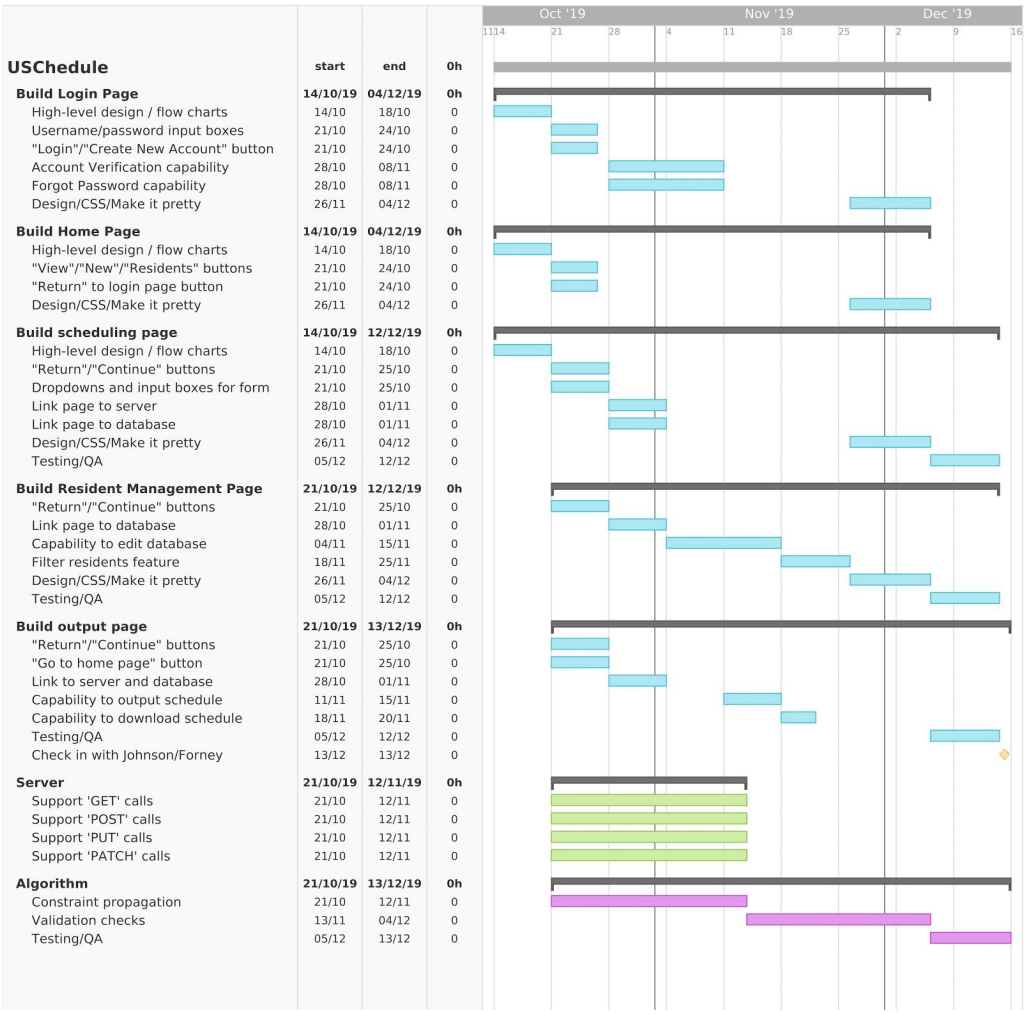
- Scheduling algorithm
    - Amelia Jay
    - Liam Namba
    - Sophia Prochnow

- Design, UX, Front-End Development
    - Annie Flora
    - Cristalina Nguyen
    - Christian Santander

4.4 Project Schedule

This section provides schedule information for the USchedule project. Full details will be broken down into the following sections, which are described below.

4.4.1 PERT / GANTT Chart



USChedule	start	end	0h
Build Login Page	14/10/19	04/12/19	0h
High-level design / flow charts	14/10	18/10	0
Username/password input boxes	21/10	24/10	0
"Login"/"Create New Account" button	21/10	24/10	0
Account Verification capability	28/10	08/11	0
Forgot Password capability	28/10	08/11	0
Design/CSS/Make it pretty	26/11	04/12	0
Build Home Page	14/10/19	04/12/19	0h
High-level design / flow charts	14/10	18/10	0
"View"/"New"/"Residents" buttons	21/10	24/10	0
"Return" to login page button	21/10	24/10	0
Design/CSS/Make it pretty	26/11	04/12	0
Build scheduling page	14/10/19	12/12/19	0h
High-level design / flow charts	14/10	18/10	0
"Return"/"Continue" buttons	21/10	25/10	0
Dropdowns and input boxes for form	21/10	25/10	0
Link page to server	28/10	01/11	0
Link page to database	28/10	01/11	0
Design/CSS/Make it pretty	26/11	04/12	0
Testing/QA	05/12	12/12	0
Build Resident Management Page	21/10/19	12/12/19	0h
"Return"/"Continue" buttons	21/10	25/10	0
Link page to database	28/10	01/11	0
Capability to edit database	04/11	15/11	0
Filter residents feature	18/11	25/11	0
Design/CSS/Make it pretty	26/11	04/12	0
Testing/QA	05/12	12/12	0
Build output page	21/10/19	13/12/19	0h
"Return"/"Continue" buttons	21/10	25/10	0
"Go to home page" button	21/10	25/10	0
Link to server and database	28/10	01/11	0
Capability to output schedule	11/11	15/11	0
Capability to download schedule	18/11	20/11	0
Testing/QA	05/12	12/12	0
Check in with Johnson/Forney	13/12	13/12	0
Server	21/10/19	12/11/19	0h
Support 'GET' calls	21/10	12/11	0
Support 'POST' calls	21/10	12/11	0
Support 'PUT' calls	21/10	12/11	0
Support 'PATCH' calls	21/10	12/11	0
Algorithm	21/10/19	13/12/19	0h
Constraint propagation	21/10	12/11	0
Validation checks	13/11	04/12	0
Testing/QA	05/12	13/12	0

4.4.2 Task / Resource Table

Task	Hardware	Software	Assigned To
GUI - Login Page	MacBook Running OSX	Sketch/VSCode React.js Node.js	Lina/Chris

GUI - Home Page	MacBook Running OSX	Sketch/VSCode React.js Node.js	Lina/Chris
GUI - Scheduling page	MacBook Running OSX	Sketch/VSCode React.js Node.js	Lina/Chris
GUI - Resident Management Page	MacBook Running OSX	Sketch/VSCode React.js Node.js	Liam/Annie
Get data from and to the database using API calls	MacBook Running OSX	VSCode API Gateway Python/Flask/Zappa	Liam/Annie
Constraint propagation algorithm	MacBook Running OSX	VSCode Python/Flask/Zappa	Sophia/Amelia
Schedule changes algorithm checking on the constraints	MacBook Running OSX	VSCode Python/Flask/Zappa	Sophia/Amelia
Comprehensive unit tests that checks on the algorithm's optimal function	MacBook Running OSX	VSCode Python/Flask/Zappa	Sophia/Amelia