

Florida International University
School of Computing and Information Sciences

Software Engineering Focus

Final Deliverable

Project Title: Patrol Shift Bid Scheduler 1.0

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Abstract

This document presents the information necessary to gain a good understanding of the Patrol Shift Bid Scheduler. It is a web-based solution for scheduling patrol officers using a bidding system, designed to replace the manual and tedious methods currently used by many police departments. It allows administrators to create schedules, so that users may then bid for their desired time slots, based on seniority.

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INTRODUCTION

The Patrol Shift Bid Scheduler is a web application designed to aid in scheduling patrol officers using a seniority-based bidding system. At a basic level, it allows administrators to create scheduling periods (known internally as “bids”, “bid periods”, or some variant thereof). Users will then receive an email notification letting them know when it is their turn to bid for their desired time slot on the schedule.

Current System

Currently, many police departments handle scheduling manually using paper and spreadsheets. Bidding is done on paper using forms given out to the officers when it is their turn. After the forms are collected it is input into an Excel spreadsheet to ensure that each shift is meeting minimum staffing requirements. The resulting schedules for each shift are then printed into three ring binders, and any amendments are made using white-out and pen.

Purpose of New System

The purpose of the new system is mainly to relieve the tedium involved with the current manual methods. An all-in-one online system would be more efficient, less wasteful, and significantly easier to manage for the officers in charge of scheduling.

USER STORIES

The following section provides the detailed user stories that were implemented in this iteration of the Patrol Shift Bid Scheduler project. These user stories served as the basis for the implementation of the project's features. This section also shows the user stories that are to be considered for future development.

Implemented User Stories

SFSC-1 - Initial database schema

As a developer, I should have an initial database schema to work with.

Acceptance criteria:

- Documentation detailing the initial design and rationale of the DB.
- Should include any necessary diagrams illustrating the DB's structure.
- A sequence of SQL queries generating the tables necessary for the DB.

SFSC-2 - Initial administration page

As an administrator, I should be able to manipulate users in the database.

Acceptance criteria:

- An administration page allowing privileged users to add, edit, or remove users from the database.

SFSC-3 - User authentication

As a user, I should be able to log in.

Acceptance criteria:

- A login page with username/password fields and a login button.
- If the username/password are correct, the user is allowed to log in.
- If the username/password are incorrect, the user is prompted again.

SFSC-4 - Shift lineup view

As a user, I should be able to see the shift line-up for a given week.

Acceptance criteria:

- A page where a logged-in user can see the current schedule and lineups.
- Shifts that fall below a given minimum staffing requirement should be easily distinguishable.
- Users should be able to view both the daily schedule and the lineup for any of the 3 8-hour shifts ("A", "B", or "C") on any arbitrary date. The shift currently being viewed should be reflected in the page title.
- The page should have filters for both daily and weekly views of both the schedule and lineup.
- Any changes to the lineup should not affect the underlying schedule. In other words, the lineup functions like an "overlay" of adjustments to the schedule.

SFSC-5 - Bid Process

As an admin, I should be able to create a bid schedule so that users can bid (in order of seniority) on a time range and date.

Acceptance criteria:

- In the administration page, a privileged user may input start/end dates for the schedule and be able to name the schedule for record keeping. Once the information is filled, the admin can initiate the schedule
- so that users can make bids.
- When the bid is initiated, users are informed through email when they are allowed to make a bid. The users should be able to place a bid when they log into their profile.
- When the bidding period has expired, the admin needs to be able to manually close the bid. When the bid is closed a patrol schedule is generated.
- Additionally, before the bid process begins, the admin should be able to place officers
- into subcategories or (Such as Sergeant, SRO, CSA, Motors, etc.). The officers that are placed in the subcategories choose their day and shift type that they want off. Except certain officers (such as SRO, Motors, and CSA) who's time off is already fixed. Instead these officers choose a time slot only that they'd like to work. The shift type and day for a subcategory needs to be modifiable by the admin.

SFSC-6 - Bid email notification

As a user, I should receive an email with a link when it's my turn to bid.

Acceptance criteria:

- When it's a user's turn to bid, an email notification is sent out with a link to the bidding page.

SFSC-8 - Password change

As a user, I should be able to change my password.

Acceptance criteria:

- A page for a user to change their current password.

SFSC-22 - Schedule view backend

As a user, I should be able to see an updated view of the current schedule instead of placeholder data.

Acceptance criteria:

- Schedule view accurately reflects the current state of the database, rather than the current placeholder data that resides there.

SFSC-24 - E-mail notification/bid process interfacing

As an administrator, the notification emails should be sent out automatically during the bid process rather than by manually hitting a button.

Acceptance criteria:

- Currently, the emails are sent by manually clicking a button inside an administration page. They should instead happen automatically once the bid process is initiated.
- When the person whose turn it is to bid chooses a time slot, the next person in line is allowed to make a bid.
- After the person whose turn is to make a bid chooses a time slot, the next person in line is automatically selected and an email notification is sent to this user with instructions on what to do to make a bid.

Pending User Stories

- SFSC-7 - Audit log
- SFSC-9 - Add vehicles to schedule
- SFSC-11 - Bid for user
- SFSC-12 - Vacation scheduling
- SFSC-23 - P-sheet backend
- SFSC-27 - Premade schedule

PROJECT PLAN

This section describes the planning that went into the realization of this project. This project incorporated the agile development techniques and as such required the sprints to be planned. These sprint plannings are detailed in the section. This section also describes the components, both software and hardware, chosen for this project.

Hardware and Software Resources

The following is a list of all hardware and software resources that were used in this project:

Hardware:

- A system running Windows (necessary for WampServer)

Software:

Server:

- Windows 10 Professional 1809
- WampServer 3.1.0
 - Apache 2.4.27
 - MySQL 5.7.19
 - PHP 5.6.31

Framework:

- CodeIgniter 3.1.10

Frontend:

- Bootstrap 4.3.1
- jQuery 3.3.1
- Tempus Dominus 5.0.1

Sprints Plan

Sprint 1

Attendees: Jorge and Otto

Start time: 11:03pm

End time: 1:07am

After discussion, the velocity of the team were estimated to be $10+15+10+10+10 = 55$.

The product owner chose the following user stories to be done during the next sprint. They are ordered based on their priority.

- SFSC-1 - Initial database schema
- SFSC-3 - User authentication
- SFSC-2 - Initial administration page
- SFSC-4 - Shift lineup view
- SFSC-5 - Bid process

The team members indicated their willingness to work on the following user stories.

Jorge Costafreda

- SFSC-1 - Initial database schema
- SFSC-5 - Bid process

Otto Gonzalez-Vega

- SFSC-3 - User authentication
- SFSC-4 - Shift lineup view
- SFSC-2 - Initial administration page

Sprint 2

Attendees: Jorge Costafreda Otto Gonzalez-Vega

Start time: 9:18 PM

End time: 10:52 PM

After discussion, the velocity of the team were estimated to be 63.

The product owner chose the following user stories to be done during the next sprint. They are ordered based on their priority.

- SFSC-4 - Shift lineup view
- SFSC-5 - Bid process
- SFSC-7 - Audit log
- SFSC-13 - Manage profile

The team members indicated their willingness to work on the following user stories.

Jorge Costafreda

- SFSC-5 - Bid process
- SFSC-7 - Audit log

Otto Gonzalez-Vega

- SFSC-4 - Shift lineup view
- SFSC-13 - Manage profile

Sprint 3

Attendees: Jorge Costafreda Otto Gonzalez-Vega

Start time: 11:45 PM

End time: 12:58 AM

After discussion, the velocity of the team were estimated to be 58.

The product owner chose the following user stories to be done during the next sprint. They are ordered based on their priority.

SFSC-5 - Bid process
SFSC-6 - Bid email notification
SFSC-14 - P-sheets
SFSC-7 - Audit log

The team members indicated their willingness to work on the following user stories.

Jorge Costafreda

- SFSC-5 - Bid process
- SFSC-7 - Audit log

Otto Gonzalez-Vega

- SFSC-6 - Bid email notification
- SFSC-14 - P-sheets

Sprint 4

Attendees: Jorge Costafreda Otto Gonzalez-Vega

Start time: 1:40 AM

End time: 1:45 AM

After discussion, the velocity of the team were estimated to be 45.

The product owner chose the following user stories to be done during the next sprint. They are ordered based on their priority.

- SFSC-5 - Bid process
- SFSC-22 - Schedule view backend
- SFSC-23 - P-sheet backend

The team members indicated their willingness to work on the following user stories.

Jorge Costafreda

- SFSC-5 - Bid process

Otto Gonzalez-Vega

- SFSC-22 - Schedule view backend
- SFSC-23 - P-sheet backend

Sprint 5

Attendees: Jorge Costafreda, Otto Gonzalez-Vega

Start time: 11:45 PM

End time: 11:58 PM

After discussion, the velocity of the team were estimated to be 60.

The product owner chose the following user stories to be done during the next sprint. They are ordered based on their priority.

- SFSC-22 - Schedule view backend
- SFSC-23 - P-sheet backend
- SFSC-24 - E-mail notification/bid process interfacing

Tasks:

- SFSC-25 - Database migration - v0.5
- SFSC-26 - Foreign keys and constraints for the database.

The team members indicated their willingness to work on the following user stories.

Jorge Costafreda

- SFSC-25 - Database migration - v0.5
- SFSC-26 - Foreign keys and constraints for the database
- SFSC-24 - E-mail notification/bid process interfacing

Otto Gonzalez-Vega

- SFSC-22 - Schedule view backend
- SFSC-23 - P-sheet backend

Sprint 6

Attendees: Jorge Costafreda Otto Gonzalez-Vega

Start time: 11:10 PM

End time: 12:00 PM

After discussion, the velocity of the team were estimated to be 60.

The product owner chose the following user stories to be done during the next sprint. They are ordered based on their priority.

- SFSC-10 - Tempus Dominus
- SFSC-11 - Bid for user
- SFSC-26 - Foreign keys and constraints for the database.
- SFSC-28 - Navigation rework
- SFSC-29 - Add more information to lineup view
- SFSC-30 - Fix up master branch on Bitbucket

The team members indicated their willingness to work on the following user stories.

Jorge Costafreda

- SFSC-10 - Tempus Dominus
- SFSC-11 - Bid for user
- SFSC-26 - Foreign keys and constraints for the database.

Otto Gonzalez-Vega

- SFSC-28 - Navigation rework
- SFSC-29 - Add more information to lineup view
- SFSC-30 - Fix up master branch on Bitbucket

SYSTEM DESIGN

This section contains information on the design decisions that went into this project. The architecture patterns are outlined and explained. The entire system is shown in a package diagram and the subsystems are explained. Finally, the design patterns used in the project are discussed.

Architectural and Design Patterns

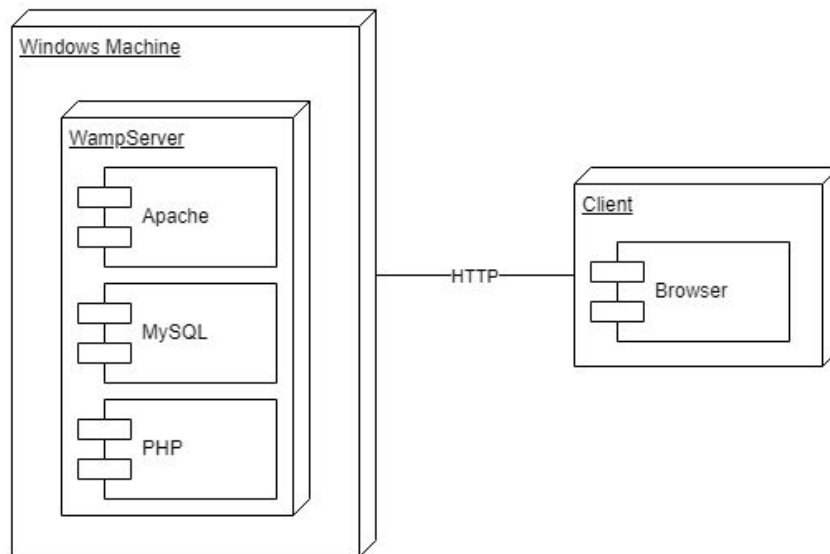
The application makes heavy use of the model-view-controller (MVC) architectural pattern. In general, models handle direct queries to the database, views are used to present the data in a structured manner, and controllers are used to manipulate the model and presenting the resulting data to the view.

It is worth noting that CodeIgniter makes models optional, so for smaller features, it may be easier to directly query the database through the controller. This is done in a few places throughout the project.

System and Subsystem Decomposition

The use of a PHP framework (CodeIgniter) means that there are not many subsystems to speak of. WampServer includes an Apache web server, a MySQL database, and a PHP runtime. For the backend, CodeIgniter uses these components to store, manipulate, and present the data. The frontend exists purely as HTML/CSS/JS files on the server, using Bootstrap to make UI more palatable (in comparison to the default browser components).

Deployment Diagram



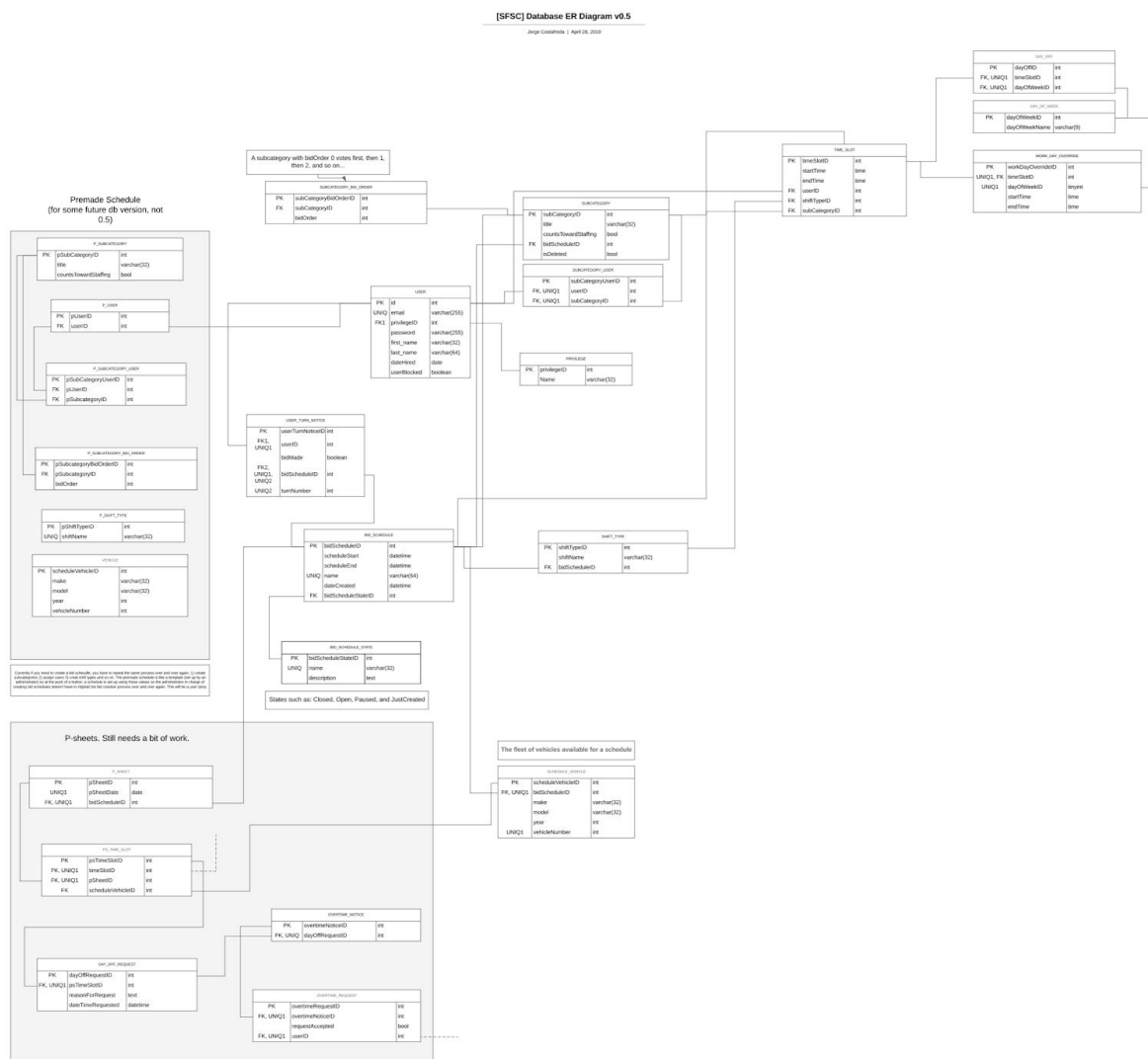
SYSTEM VALIDATION

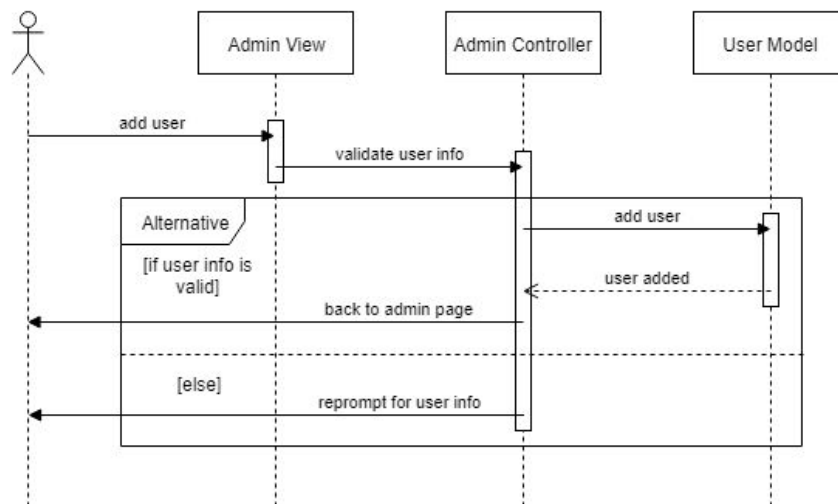
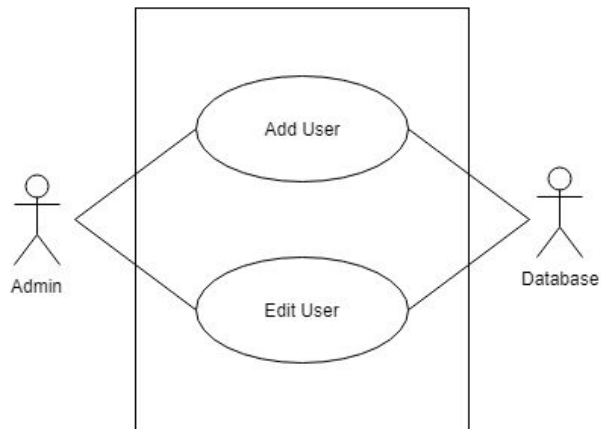
Manual tests were performed for each of the implemented stories to ensure they work correctly. Additionally, much of the validation is done at the database level using a combination of null constraints, unique constraints, and foreign keys. User input on forms is also validated before queries are sent to the database.

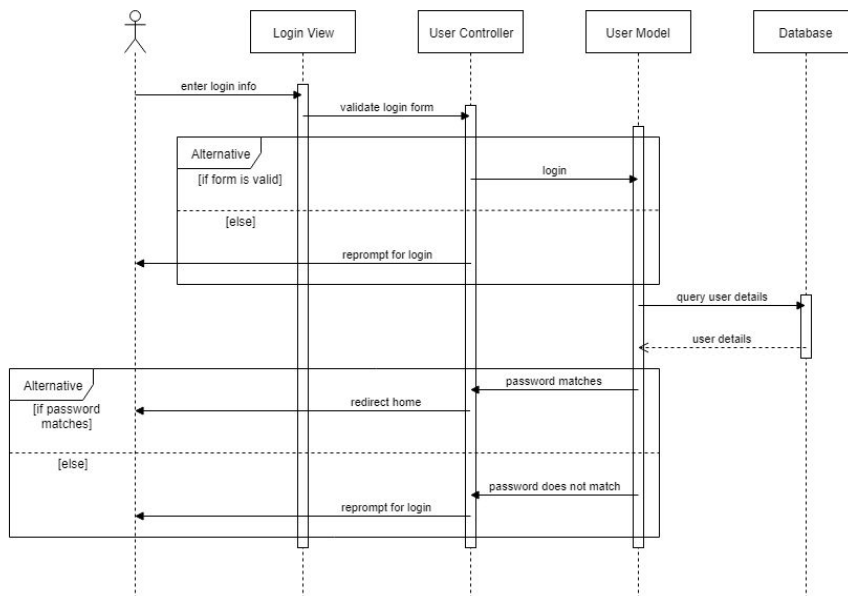
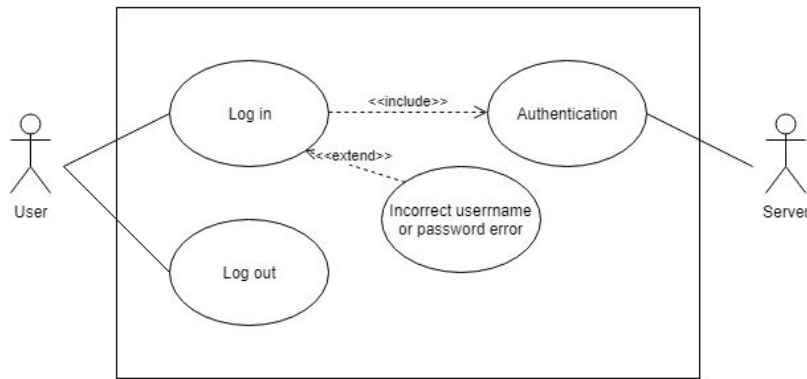
APPENDIX

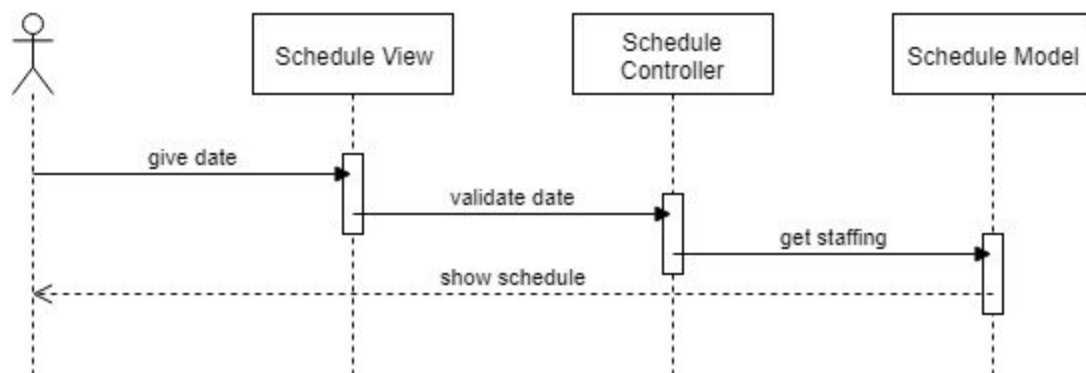
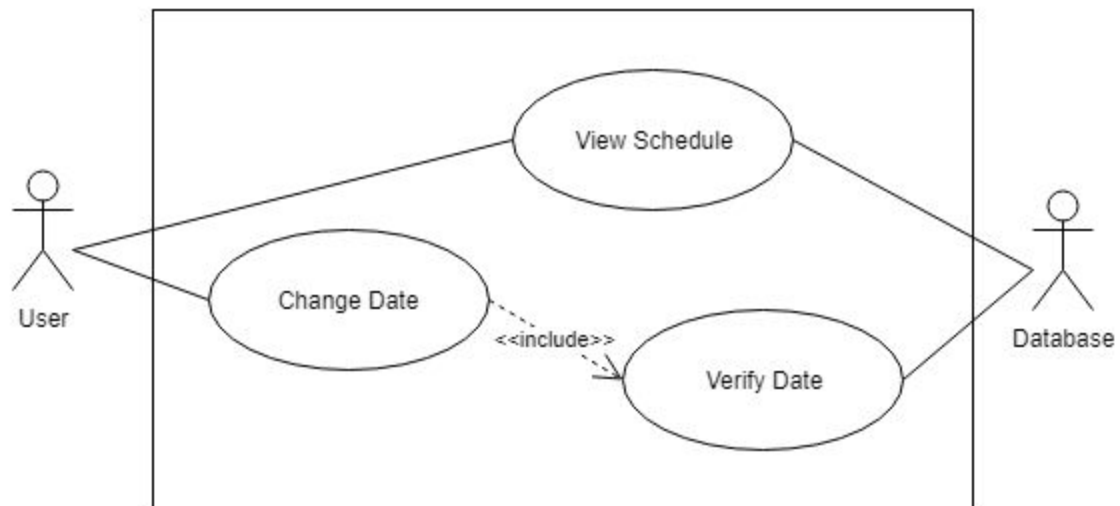
Appendix A - UML Diagrams

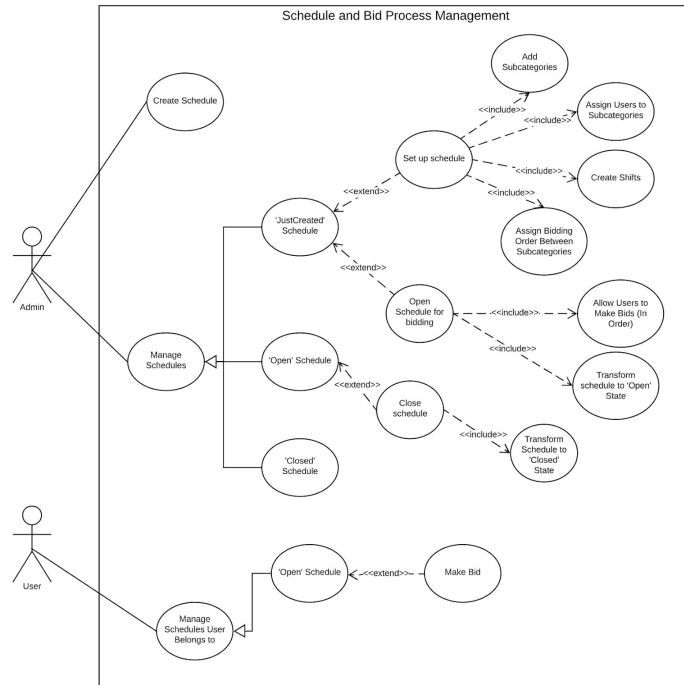
SFSC-1 - Database Schema v0.5



SFSC-2 - Initial administration page

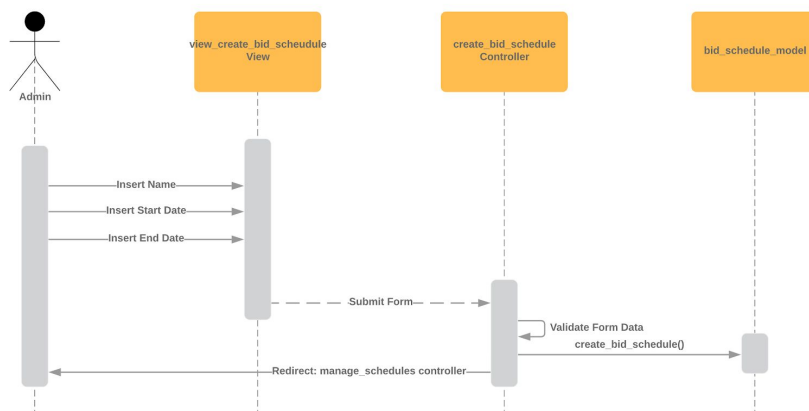
SFSC-3 - User authentication

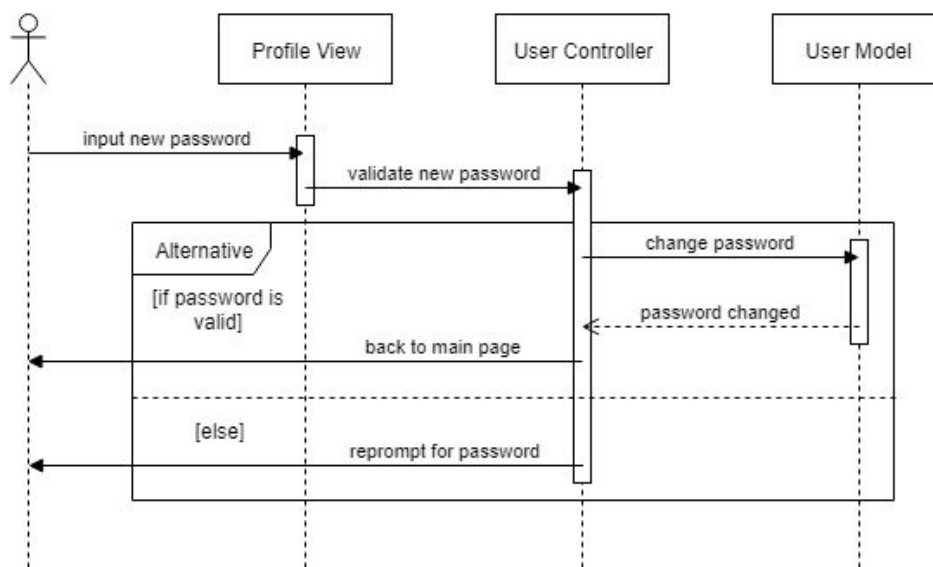
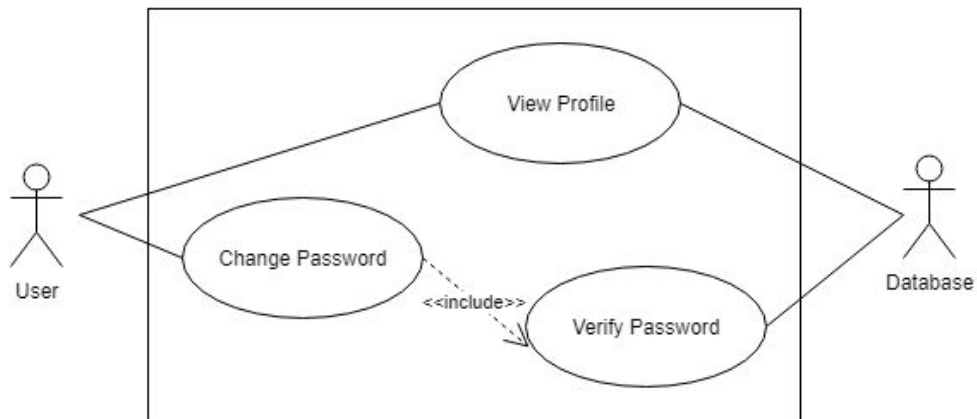
SFSC-4 - Shift lineup view

SFSC-5 - Bid process

SFSC-5 Sequence Diagram 1: Create Schedule

Jorge Costafreda | April 28, 2019

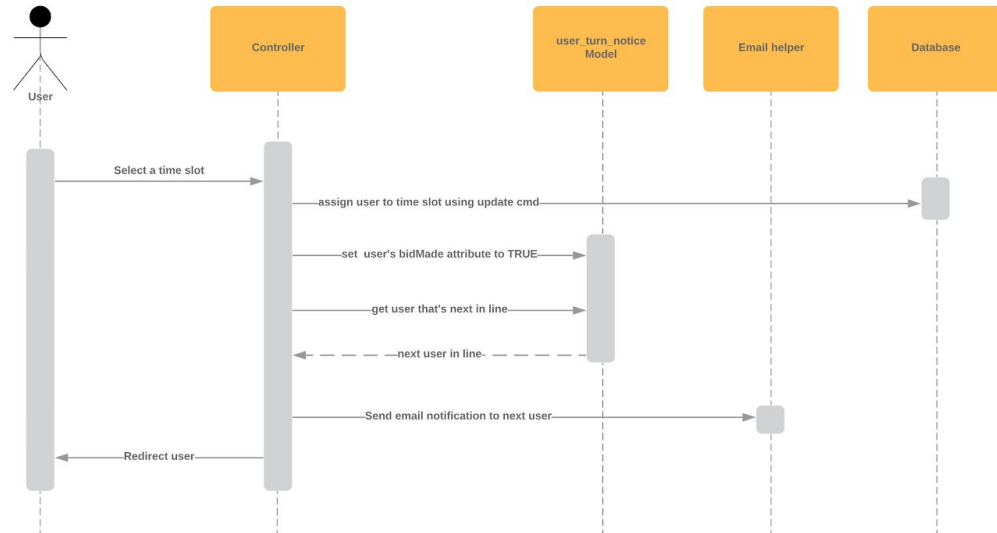


SFSC-8 - Password change

SFSC-24 - E-mail notification/bid process interfacing

SFSC-24 Sequence Diagram

Jorge Costafreda | April 15, 2019



Appendix B - User Interface Design

SFSC

Log in



Log in

SFSC Home Admin My Schedules admin@example.com Log out							
04/18/2019 							
Q1							
A							
	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday
Sergeant	Schry, Heather	Schry, Heather	Schry, Heather	Schry, Heather	Schry, Heather	Schry, Heather	Schry, Heather
	Villanueva, Carlos	Villanueva, Carlos	Villanueva, Carlos	Villanueva, Carlos	Villanueva, Carlos	Villanueva, Carlos	Villanueva, Carlos
CSI	Perez, Julian	Perez, Julian	Perez, Julian	Perez, Julian	Perez, Julian	Perez, Julian	Perez, Julian
	Abramson, Shelby	Abramson, Shelby	Abramson, Shelby	Abramson, Shelby	Abramson, Shelby	Abramson, Shelby	Abramson, Shelby
Motorman	Viera, Yosdany	Viera, Yosdany	Viera, Yosdany	Viera, Yosdany	Viera, Yosdany	Viera, Yosdany	Viera, Yosdany
	Rodriguez, Maikel	Rodriguez, Maikel	Rodriguez, Maikel	Rodriguez, Maikel	Rodriguez, Maikel	Rodriguez, Maikel	Rodriguez, Maikel
Patrol Officer	Portela, Juan	Portela, Juan	Portela, Juan	Portela, Juan	Portela, Juan	Portela, Juan	Portela, Juan
	Ogando, Ana	Ogando, Ana	Ogando, Ana	Ogando, Ana	Ogando, Ana	Ogando, Ana	Ogando, Ana

SFSC Home Admin My Schedules admin@example.com Log out							
	Robert	Robert	Robert	Robert	Robert	Robert	Robert
CSI	Jose, Garcia	Jose, Garcia	Jose, Garcia	Jose, Garcia	Jose, Garcia	Jose, Garcia	Jose, Garcia
	Alvarez, Michael	Alvarez, Michael	Alvarez, Michael	Alvarez, Michael	Alvarez, Michael	Alvarez, Michael	Alvarez, Michael
Patrol Officer	Portela, Juan	Portela, Juan	Portela, Juan	Portela, Juan	Portela, Juan	Portela, Juan	Portela, Juan
	Paez, Jorge	Paez, Jorge	Paez, Jorge	Paez, Jorge	Paez, Jorge	Paez, Jorge	Paez, Jorge
	Spence, Gary	Spence, Gary	Spence, Gary	Spence, Gary	Spence, Gary	Spence, Gary	Spence, Gary
	Acosta, Julian	Acosta, Julian	Acosta, Julian	Acosta, Julian	Acosta, Julian	Acosta, Julian	Acosta, Julian
SRO	Romero, Andrea	Romero, Andrea	Romero, Andrea	Romero, Andrea	Romero, Andrea	Romero, Andrea	Romero, Andrea
	Ortiz, Janielle	Ortiz, Janielle	Ortiz, Janielle	Ortiz, Janielle	Ortiz, Janielle	Ortiz, Janielle	Ortiz, Janielle
CSA	Swain, Kyle	Swain, Kyle	Swain, Kyle	Swain, Kyle	Swain, Kyle	Swain, Kyle	Swain, Kyle
	Morejon, Bryan	Morejon, Bryan	Morejon, Bryan	Morejon, Bryan	Morejon, Bryan	Morejon, Bryan	Morejon, Bryan
Staffing	4	5	5	4	4	4	4

SFSC

[Home](#)

[Admin](#)

[My Schedules](#)

[admin@example.com](#)

[Log out](#)

[Admin page](#)

[Manage Bid Schedules](#)

[Modify User Accounts](#)

[Subcategory settings](#)

Manage bid schedules

[Create a bidding schedule](#)

Recently created schedules for bidding:

[Q3](#)

Open schedules for bidding:

[Q2](#)

[Q4](#)

[Test2](#)

[Test3](#)

[Summer](#)

Closed schedules:

[Q1](#)

SFSC

[Home](#) [Admin](#) [My Schedules](#)

[admin@example.com](#) [Log out](#)

[Admin page](#)
[Manage Bid Schedules](#)
[Modify User Accounts](#)
[Subcategory settings](#)

Create a schedule for bidding

Give it a name:



Example: Spring 2018, Q1 2019, etc.

Start date and time:



The start date and time of the patrol schedule (not the bidding process).

End date and time:



The end date and time of the patrol schedule (not the bidding process).

Create

SFSC

HomeAdminMy Schedules

admin@example.comLog out

Admin page

Manage Bid Schedules

Modify User Accounts

Subcategory settings

Bid Schedule Setup

Schedule Info:
ID: 18
Name: Demo
Start Date & Time: 2019-04-18 00:00:00
End Date & Time: 2019-05-18 00:00:00
[Click here to edit this info](#)

Shift Bid Schedule Status: **Just Created**
Meaning it has just been created and additional information is needed before users can start bidding.

Instructions

You've successfully created a bid schedule! But we have to set up the bid schedule because it can be open for bidding. Follow the steps below, click on the checkbox, and then press the button to open the schedule for bidding.

Step 1
Create the subcategories that will be bidding. [Click here](#)

Step 2
Add users to the created subcategories from step 1. [Click here](#)

Step 3
Select the bidding order between subsections. Ex Seargents first, then CSI, then regular users, etc. [Click here](#)

Step 4
Create shifts for the schedule. [Click here](#)

Step 5
Create the subsection-restricted bid slots that users will bid on. [Click here](#)

☐ I've completed all the steps above [Open Schedule For Bidding](#)

SFSC

[Home](#) [Admin](#) [My Schedules](#)

[admin@example.com](#) [Log out](#)

[Admin page](#)
[Manage Bid Schedules](#)
[Modify User Accounts](#)
[Subcategory settings](#)

Subcategory "Patrol Officer" inserted successfully.

Subcategories +

Subcategory ID	Title	Counts Toward Staffing	
24	Sergeant	No	
25	Patrol Officer	Yes	

SFSC

[Home](#) [Admin](#) [My Schedules](#)

[admin@example.com](#) [Log out](#)

[Admin page](#)
[Manage Bid Schedules](#)
[Modify User Accounts](#)
[Subcategory settings](#)

Selected user(s) have been assigned to the subsection successfully

Sergeant

Counts toward staffing: **No**
[add users to this subcategory](#)

User ID	First name	Last name	
24	Heather	Schry	remove

Patrol Officer

Counts toward staffing: **Yes**
[add users to this subcategory](#)

User ID	First name	Last name	
7	Craig	Harvey	remove

SFSC

[Home](#) [Admin](#) [My Schedules](#)

[admin@example.com](#) [Log out](#)

[Admin page](#)
[Manage Bid Schedules](#)
[Modify User Accounts](#)
[Subcategory settings](#)

Updated successfully

[go back](#)

Manage bid order between subsections

Pick the order that users will bid on based on subsection by assigning each section a number. Subsections with a smaller number will vote **before** subsections with a higher number. You can pick any number.

Example: 1 for Sergeant, 2 for CSI, and 3 for Patrol Officers.

Number assignments don't have to be increments of 1, they can be increments of any size.

Example: 1 for Sergeant, 4 for CSI, and 32 for Patrol Officers.

When you're done, press the "Update" button to save your changes.

1	Sergeant
2	Patrol Officer

Update

SFSC

[Home](#) [Admin](#) [My Schedules](#)

[admin@example.com](#) [Log out](#)

[Admin page](#)
[Manage Bid Schedules](#)
[Modify User Accounts](#)
[Subcategory settings](#)

Shift inserted successfully.

Manage shifts

Shift name: A [rename](#) [delete](#)
Shift name: B [rename](#) [delete](#)

SFSC

[Home](#) [Admin](#) [My Schedules](#)

[admin@example.com](#) [Log out](#)

[Admin page](#)
[Manage Bid Schedules](#)
[Modify User Accounts](#)
[Subcategory settings](#)

Add bid slot

[Go Back](#)

Start time:

The time the assigned user will start patrolling

End time:

The time the assigned user will stop patrolling

Days off:

☒ Sunday

☐ Monday

☐ Tuesday

☐ Wednesday

☐ Thursday

☐ Friday

☒ Saturday

Shift:

☒ A

☐ B

Subcategory:

☒ Sergeant

☐ Patrol Officer

Add

SFSC

[Home](#) [Admin](#) [My Schedules](#)

[admin@example.com](#) [Log out](#)

[Admin page](#)
[Manage Bid Schedules](#)
[Modify User Accounts](#)
[Subcategory settings](#)

Manage Bid Slots +

Sergeant

Shift: A

Slot ID: #84 [delete](#) | [update](#)

Start Time: 09:00:00

End Time: 17:00:00

Days off:

Sunday

Saturday

Shift: B

Patrol Officer

Shift: A

Shift: B

Slot ID: #85 [delete](#) | [update](#)

Start Time: 17:00:00

End Time: 01:00:00

Days off:

Monday

Tuesday

4/28/2019

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Appendix C - Sprint Review Reports

Sprint 1

Attendees: Jorge Costafreda Otto Gonzalez-Vega

Start time: 8:47 PM

End time: 9:00 PM

After a show and tell presentation, the implementation of the following user stories were accepted by the product owners:

- SFSC-1 - Initial database schema
- SFSC-2 - Initial administration page
- SFSC-3 - User authentication

The following ones were rejected and moved back to the product backlog to be assigned to a future sprint at a future Spring Planning meeting.

- SFSC-4 - Shift lineup view
- SFSC-5 - Bid process

Sprint 2

Attendees: Jorge Costafreda Otto Gonzalez-Vega

Start time: 11:30 PM

End time: 11:45 PM

After a show and tell presentation, the implementation of the following user stories were accepted by the product owners:

- SFSC-4 - Shift lineup view
- SFSC-13 - Manage profile
- SFSC-8 - Password change

The following ones were rejected and moved back to the product backlog to be assigned to a future sprint at a future Spring Planning meeting.

- SFSC-5 - Bid process
- SFSC-7 - Audit log

Sprint 3

Attendees: Jorge Costafreda Otto Gonzalez-Vega

Start time: 12:30 AM

End time: 12:36 AM

After a show and tell presentation, the implementation of the following user stories were accepted by the product owners:

- SFSC-6 - Bid email notification
- SFSC-14 - P-sheets

The following ones were rejected and moved back to the product backlog to be assigned to a future sprint at a future Spring Planning meeting.

- SFSC-5 - Bid process
- SFSC-7 - Audit log

Sprint 4

Attendees: Jorge Costafreda, Otto Gonzalez-Vega, & Samuel Ceballos, Jr.

Start time: 11:25 PM

End time: 11:35 PM

After a show and tell presentation, the implementation of the following user stories were accepted by the product owners:

- SFSC-5 - Bid process

The following ones were rejected and moved back to the product backlog to be assigned to a future sprint at a future Spring Planning meeting.

- SFSC-22 - Schedule view backend
- SFSC-23 - P-sheet backend

Sprint 5

Attendees: Jorge Costafreda Otto Gonzalez-Vega Samuel Ceballos, Jr.

Start time: 10:38 PM

End time: 11:05 PM

After a show and tell presentation, the implementation of the following user stories were accepted by the product owners:

- User story SFSC-24 - E-mail notification/bid process interfacing
- User story SFSC-22 - Schedule view backend
- Task SFSC-25 - Database migration - v0.5

The following ones were rejected and moved back to the product backlog to be assigned to a future sprint at a future Spring Planning meeting.

- User story SFSC-27 - Premade schedule
- User story SFSC-23 - P-sheet backend
- Task SFSC-26 - Foreign keys and constraints for the database.

Sprint 6

Attendees: Jorge Costafreda Otto Gonzalez-Vega

Start time: 11:00 PM

End time: 11:10 PM

After a show and tell presentation, the implementation of the following user stories were accepted by the product owners:

- SFSC-26 - Foreign keys and constraints for the database.
- SFSC-10 - Tempus Dominus
- SFSC-28 - Navigation rework
- SFSC-29 - Add more information to lineup view
- SFSC-30 - Fix up master branch on Bitbucket

The following ones were rejected and moved back to the product backlog to be assigned to a future sprint at a future Spring Planning meeting.

- SFSC-31 - Privilege use instead of 'is_admin'
- SFSC-32 - Implement missing setup requirements for JC schedule and polish
- SFSC-33 - Closed schedule
- SFSC-11 - Bid for user

Appendix D - User Manuals, Installation/Maintenance Document, Shortcomings/Wishlist Document and other documents

Installation/Maintenance

<https://www.youtube.com/watch?v=gCRDQEUIf20>

Shortcomings/Wishlist

<https://www.youtube.com/watch?v=lvnJX2y7qJ8>

- **Bid templates** - the ability to save some sort of template in the bid management page would allow an administrator to reuse old categories and time slots for new schedules, significantly cutting down on the amount of time necessary to set up a new bid.
- **P-sheets** - a view for each shift showing information like: officer unit numbers, vehicles assigned, patrol zones, etc.
- **Sick days/vacation/overtime** - the ability to mark officers as sick, to assign vacation periods, and to allow them to sign up for overtime if any opportunities exist.
- **Misc**
 - Currently administrators and users are differentiated by an “is_admin” field. This should be changed so that the privilege fields are correctly used.
 - It is possible to accidentally double-submit some forms through double-clicking.
 - A hire date field should be added to the “add users” and “edit users” view.