**Capstone Project**

**Document Template**

Note: The following are the candidate sections of the document. They are presented here for guidance. Questions in each section could be used as possible aspects to cover. Some questions may not be applied to each project. On the other hand, additional information may be needed.

# Introduction

What is a roster?

A roster is a list or plan showing turns of duty or leave for individuals or groups in an organization (Oxford Dictionary).

A roster is a list of people’s names, often with the jobs they have been given to do (Cambridge Dictionary).

A roster is a list which gives [details](https://www.collinsdictionary.com/dictionary/english/detail) of the order in which different people have to do a particular [job](https://www.collinsdictionary.com/dictionary/english/job) (Collins Dictionary).

## Purpose

* What is the problem or the opportunity that the project is investigating?
* To make rostering efficient and more involved for the staff.
* To easily access the roster from home or remotely.
* To lessen time spent in making the roster for the managers.
* Why is this problem valuable to address?
* To keep the staff happy by providing them the freedom to roster themselves accordingly.
* To have more time for the manager and staff in doing stuff that matters more than making time at work to request a roster.
* To have less time to wait for a staff’s roster to come out.
* To issue the roster immediately as the request process no longer requires an approval.
* What is the current state (e.g. unsatisfied users, lost revenue)?
* The staff has a request book for their desired days and shifts.
* The roster manager fills in the roster shifts in MS Excel using the staff’s request book.
* If there are any conflicts, the staff manager tries to contact the staff as much as possible face to face to check their other available hours and days to complete that specific staff’s request.
* This process will finish once the roster manager has communicated with all the staff regarding the roster. This process will go on until all staff with rostering issues has been advised.
* Once the roster manager has published the roster, the ward manager approves it or changes it accordingly if a staff has requested changes due to extenuating circumstances.
* If there are staff agreeing to swap, the swap form needs to be filled up by both staff members before being approved by the ward manager.
* What is the desired state?
* To have lesser time to finish the roster.
* To get the staff more involved in the rostering process.
* To make the staff more vigilant in handling such task.
* To lessen the time to process and finish the roster.
* To make the shift swap process easier and more convenient.
* Has this problem been addressed by other projects? What were the outcomes?
* It has been addressed by other projects and it has different implementations. First off, the rostering for permanent staff is still being done by the roster manager. Casual staff however, roster themselves unguaranteed shifts. Things needed to be considered especially with the nursing profession as acuity and skill mix should also be considered.

## Industry/ domain

* What is the industry/ domain?
* The industry we are dealing with our app is nursing, however, the app is not limited to the nursing profession and can be utilised by another industry or profession.
* What is the current state of this industry? (e.g. challenges from startups)
* Currently, rostering in nursing in the hospital setting is done through Microsoft Excel. It is a very difficult process as people keeps changing their requests to suit their plans for the week. There is a roster manager (a permanent staff) who rosters staff according to their preferences (written in a book). These preferences however changes as staff has plans during the week. Changes make it difficult to keep staff happy as shifts get filled without notice. On top of that, the nurse unit manager also changes the roster according to skill mix and patient acuity.
* Is the project relevant to other industries?
* The project can be relevant to other industries or profession as long as there are people that needs to be rostered. Industries that don’t require rostering would not benefit from this project.

## Stakeholders

* Who are the stakeholders? (be as specific as possible as to who would have access to the software)
* The ward and its staff where this application will be used.
* Why do they care about this software?
* They care about this software as it will help the staff with rostering without the hassles of their shifts getting changed by anyone besides the NUM in special circumstances. In addition, this application can save time as it cuts the staff – NUM interaction when applying for the shift. The staff will also have the power to roster themselves according to what they want or need provided that the shift they want is still available.

# Product Description

## Architecture Diagram

Include a diagram of the building blocks of the design including users and how they interact with the product.

## User Stories

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| # | User Story Title | User Story Description | Priority | Additional Notes |
| 1 |  |  |  |  |
| 2 |  |  |  |  |
| … |  |  |  |  |

## User Flow

Present as a flow diagram the steps a user may make in interacting with the software.

## Wireframe Design

Show elements of the user interface, either manually or via a tool such as Figma.

## Open Questions/Out of Scope

* What features are considered out of scope?

## Non-functional Requirements

* What are the key security requirements? (e.g. login, storage of personal details, inactivity timeout, data encryption)
* How many transactions should be enabled at peak time?
* How easy to use does the software need to be?
* How quickly should the application respond to user requests?
* How reliable must the application be? (e.g. mean time between failures)
* Does the software conform to any technical standards to ease maintainability?

# Project Planning

Include a Gantt chart or screenshot of a Trello board showing key milestones (with dates) to complete the project.

# Testing Strategy

* What were steps undertaken to achieve product quality?
* How was each feature of the application tested?
* How did you handle edge cases?

# Implementation

* What were the considerations for deploying the software?

# End-to-end solution

* How well did the software meet its objectives?

# References

* Where is the code used in the project? (link to GitHub)
* <https://github.com/LilyIOD/Capstone2022/tree/dev/Project-Capstone/Richard>
* What are the resources used in the project? (libraries, APIs, databases, tools, etc)
* Visual Studio Code
* My SQL Database
* Postman