ICBC Flex Work

Project Plan

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Version 0.2

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Document Information

Revision History

Date	Version	Status	Prepared by	Comments
2020.01.22	0.1	Done	Team Flex	First draft of Project Plan
2020.04.11	0.2	Done	Team Flex	Final draft of Project Plan. Fixed estimated time for project deliverables to accurately reflect progress

Document Control

Role	Name	E-mail	Telephone

Approval

Role	Name	Signature	Sign-off Date

Post Approval Distribution

Role	Name

Introduction

This document is the **Project Plan** for **Flex Work**, the desk-sharing solution by *Team Flex*, for *ICBC*. We are a team of six UBC Computer Science students. This Project Plan will recognize discrete and logical components of work, identify accountable resources, define the beginning and end of key phases including overlaps, and highlight critical path(s) of the project.

We will follow the **Waterfall Process / Software Development Life Cycle (SDLC)**.

From the period of Jan 6 - April 26, 2020, we will create **Flex Work**, the desk-sharing solution, for ICBC. At its core, externally, it will be a web application for employees to make their desks available and book desks made available by others, across all ICBC locations. There will also be an admin interface for updating information of office locations among other functions. Internally, this will be implemented with a modern web technology stack comprising an SQL database, a REST API server in a Java or C++ framework (or similar), and a single page application in React or Angular (or similar).

Further information about Flex Work is available in the Terms of Reference document.

The remainder of this document will detail the plans at each stage of the SDLC, followed by a Gantt Chart of the timeline, with explanations.

Initiation/Formation

We worked together closely throughout this stage, using several face-to-face meetings, to ensure everyone is on the same page and expectations are made known about the rest of the project.

Terms of Reference (TOR)

- Accountable personnel: All team members
- Completion date of first draft: January 14, 2020

Ravina was in charge of ensuring all components of the first draft TOR were completed. As it is a living document, Ravina is in charge of updating it throughout the life cycle of the project.

Project Plan

- Accountable personnel: All team members
- Expected done date of the first draft: January 22, 2020

Ravina is in charge of ensuring all components of the Project Plan are completed. As this is a living document, Ravina is in charge of updating it throughout the life cycle of the project. We will present an update at the Mid-Session Meeting (February 25 or 27, 2020).

Requirements Gathering and Design

External Design

- A meeting with the sponsor is scheduled for Jan. 23, 2020, where all functional requirements will be examined and translated into key external design requirements.
- Considerations of different external design solutions according to set requirements:
  - Accountable personnel: All team members
  - Expected done date: Jan. 24, 2020
- Finalize external design solutions that provide the smoothest user experience:
  - Accountable personnel: John
  - Expected done date: Jan 26, 2020
- Requirement Document
  - Accountable personnel: Srijon
  - First draft documenting project requirements and associated external design solutions:
    - Expected done date: Jan 27, 2020
  - Final draft:
    - Expected done date: Jan 30, 2020
- Use Cases, User Stories, Layouts, and Storyboards, which are prerequisites for front end implementation:
  - Accountable personnel: John
  - Expected done date: Jan 30, 2020

Internal Design

- Finalize on coding environment:
  - Accountable personnel: All team members
  - Expected done date: Jan 27, 2020
- Considerations of possible internal architecture components as well as algorithms according to external design + non-functional requirements:
  - Accountable personnel: All team members
  - Expected done date: Jan 27, 2020
- Finalize internal design architecture/algorithm - set up back-end API:
  - Accountable personnel: Srijon
  - Expected done date: Jan 28, 2020
- System Design Document
  - Accountable personnel: Srijon
  - First draft documenting details of internal design architecture
    - Expected done date: Feb 3, 2020
  - Final draft

- o Expected done date: Feb 6, 2020
- Continuously monitor implementation and possibly alter data structures and/or algorithms used to ensure accordance with requirements (efficiency etc):
  - o Accountable personnel: Linh
  - o Expected done date: March 23, 2020

Coding/Building

Frontend

The frontend will consist of building the following tasks:
- Design visual components (maps/calendar images/icons)
  - ○ Accountable personnel: Srijon
  - ○ Expected done date: March 13, 2020
- Admin pages for login and updating location information
  - ○ Accountable personnel: John
  - ○ Expected done date: March 31, 2020
- Pages for employee space booking and registering
  - ○ Accountable personnel: Srijon
  - ○ Expected done date: March 31, 2020
- Integrating the external design into the frontend
  - ○ Accountable personnel: Kevin
  - ○ Expected done date: March 20, 2020

Srijon will be in charge of ensuring all components of the frontend are complete by March 20, 2020.

Backend

The backend will consist of building the following tasks:

- Implementing a REST API server to communicate with the frontend
  - ○ Accountable personnel: Ravina, Charlie
  - ○ Expected done date: March 6, 2020
- Designing a database and queries to store/retrieve the booking and location information
  - ○ Accountable personnel: Kevin, Ravina
  - ○ Expected done date: February 8, 2020
- Implementing email service to send confirmation emails
  - ○ Accountable personnel: John
  - ○ Expected done date: February 14, 2020

Ravina will be in charge of ensuring all components of the backend are complete by March 13, 2020.

Testing

The testing plan includes Unit Testing, Integration Testing, and Acceptance Testing.

Unit Testing

For unit tests, each of our group members is responsible for writing unit tests for their own functions during the Coding/Building phase and continuously unit testing.
- ○ Accountable personnel: Entire team
- ○ Expected done date: March 26, 2020

Integration Testing

Integration test comes with two parts, Front-end Integration tests and Back-end Integration tests. Front-end Integration tests will check if the front-end sends data in the correct format to the backend. Back-end tests check if the backend system can handle requests correctly. Both Front-end and Back-end testing can be done manually or automatically depending on needs
- ● Front-end Integration testing
  - ○ Accountable personnel: Srijon
  - ○ Expected done date: April 01, 2020
- ● Back-end Integration testing
  - ○ Accountable personnel: Charlie
  - ○ Expected done date: April 01, 2020

Acceptance Testing

Acceptance Testing will begin as soon as the coding phase ends. We will do this for both the employee and admin interfaces/functionality. Further, to fulfill non-functional requirements, we will test the capacity of the system to handle the required simultaneous user-load and data persistence requirements.
- ○ Accountable personnel: Ravina
- ○ Expected done date: April 01, 2020

Release Management

Deployment

- ● Deploying the backend server
  - ○ Accountable personnel: Charlie
  - ○ Expected done date: March 30, 2020
- ● Deploying the React frontend app
  - ○ Accountable personnel: Charlie

- ○ Expected done date, initial, for sponsor feedback: Feb 24, 2020
- ○ Expected done date: March 30, 2020
- ● Deploying the database
  - ○ Accountable personnel: Charlie
  - ○ Expected done date, final: March 30, 2020

Charlie will be in charge of ensuring all components of the deployment are complete by March 30.

Acceptance Document

The Acceptance Document will describe the aspects of the final implemented project that have met the client's requirements. This document will be an ongoing draft throughout the project as each requirement is met.
- ● Accountable personnel: All team members (team member responsible for completing a certain requirement will also be responsible for updating the Acceptance Document
- ● Expected done date: April 6, 2020

Warranty/Maintenance Period

After release, until April 26, 2020, we will maintain the system and fix any issues that may arise, ensuring a successful usable product by ICBC.

Critical Path

We estimate that the front end design, implementation, and especially testing, will take the longest. The front end will take more effort and time compared to the back end. Therefore, it forms the majority of our critical path. As can be seen in the Gantt Chart, the Critical Path consists of: Requirements Gathering, External Design, Front End Implementation, Integration and Acceptance Testing. Each item in this path relies on previous items.

Gantt Chart and Stretch Goal

- ● The list on the left shows estimated effort (in hours - "EH"), duration ("WD" - Work Days), and start and end dates ("START" and "DUE").
- ● Tasks are grouped into categories.
- ● Production of documentation (artifacts) are in a category at the bottom.
- ● Arrows indicate dependencies / prerequisites.
- ● The Critical Path is highlighted in red.

As can be seen on the Gantt Chart, if we meet our deadlines, we will have the opportunity to attempt the stretch goal of implementing a mobile solution, after the coding/building phase for the product that satisfies the core requirements.