Requirements Document

Bakery Staff Scheduling Software
For BreadDev (Group 8)

InTouch Consulting (Group 1)

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Table of Contents

Revision History

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Whole team	2019-01-30	Document Outline Plan	1.0.1
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1.0 Introduction

1.1 Purpose

The purpose of this project is to develop the Bakery Staff Scheduling Software [1] system to be used by all employees at BreadDev's bakery. In this document, InTouch outlines a product that increases the efficiency of BreadDev's management staff by reducing the time they spend on scheduling. Product information, and requirements for developing this system can be found in the subsequent Requirements Document (RD) 1.0.3.

1.2 Project Scope

The scope of this project covers the process of developing a software system which benefits BreadDev and meets the objectives from their RFP [1]. The system must have a calendar scheduling system which is accessible to all employees. An employee can use the system to manage shift scheduling, view shifts, create and respond to shift cover requests, and create and view announcements. Additionally, an employee is notified when their shift changes. BreadDev believes that a Bakery Staff Scheduling Software system can help achieve their goals of having clearer and quicker company wide communications [1].

1.3 Glossary of Terms

All Users	A term used to specify both management and staff users.
Employee	A person who is employed at BreadDev.
Full-Calendar View	The interface seen when a user opens the calendar. One week is displayed at a time with the ability to switch to the previous and next weeks.
Management Account	The account used by a management user.
Management User	A user who is a manager or supervisor at BreadDev.
RD	Requirements document.
Respond to Shift Cover Request	A user responds to another user's shift cover request, indicating that they are willing to work the shift. A management user is notified when a user has responded to a shift cover request.
RFP	Request for proposal.
Staff Account	The account used by a staff user.
Staff User	A regular employee at BreadDev including sales staff and bakery staff.
Shift	The period of time during which an employee is scheduled to work.
Shift Cover Request	A user's request for someone else to work a shift that the user is currently scheduled to work. All users can view and create shift cover requests.
Summary of Schedule	A list of current employees and hours worked by each employee that week.

1.4 References

[1]   BreadDev. (2019). *Request For Proposal.* Victoria.

[2]   *Personal Information Protection Act.* (2003, 23 October). From BC Laws:
         http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_03063_01

1.5 Overview

This document contains the project description, system features, and the project's requirements. The project description discusses the primary features, user groups, operating environment, assumptions, and constraints of the system. The project requirements are divided into functional requirements, and external interface requirements. The overall description section outlines the project and its features. The system features section examines management tasks, calendar, profile, and announcement features; this section goes into detail about each one of these features and their respective functional requirements. The external interface requirements section analyzes the various interfaces that control the system. The non-functional requirements section focuses on security and software quality.

2.0 Overall Description

2.1 Product Perspective

The system that will be developed is replacing hand written schedules and manual changes to shifts at the bakery. This system will decrease time spent editing and arranging the schedule, both on paper and with employees. This system will also reduce the time taken to resolve both conflicting schedules and last minute changes. All users will be able to monitor their own schedules from both within and outside the office on multiple platforms. A management user will also be able to manage the schedule.

2.2 Product Features

Each user has either a management user account or a staff user account. A management user account has the ability to edit the schedule and have final acceptance on changes proposed by an employee, including shift cover requests. All changes to the schedule are automatically updated in real time. A staff user account is primarily used to view the schedule, however is also able to create and respond to shift cover requests and view announcements. No proprietary or specialized hardware is needed for this system, and the system will be developed such that improvements will be simple to add after initial implementation. The system's user interface will be developed such that it is intuitive for a non-technical person to easily understand and use within two hours of initial introduction.

2.3 User Classes and Characteristics

2.3.1 Staff User Group

The majority of system users belong to the staff user group. A staff user is able to choose between viewing the entire week's schedule of all users' shifts or switch to a personal schedule of only their own shifts. A staff user is only able to see another employee who is listed on the schedule. Should an employee need to request a shift change, they are able to select one of their shifts and create a shift cover request. Another employee is then able to accept the shift, and all management accounts receive a notification that a shift change has been requested and can either approve or deny the request. A staff user is not be able to view the weekly summary, edit the schedule, or view responses to shift cover requests. A user may optionally add contact information to their own user profile that can be viewed by all other users.

2.3.2 Management User Group

The management user group has all the features of a staff user account, in addition to those listed in this section. Each management user has the ability to add and remove shifts, approve shift cover requests, and create announcements. Conflicts that may occur due to shift cover requests must be resolved manually by a management user. Each management user is responsible for ensuring that employees are not overscheduled as defined by local labour laws. These labour laws are outside the scope of this system. Should an employee miss a shift or call in sick, a management user must manually remove the shift. A management user is also able to export a weekly summary of the schedule. The summaries from the previous weeks are also accessible. These summaries do not have any payment details or employee wage information.

2.4 Operating Environment

2.4.1. Hardware

The system runs on devices up to 3 years in age, or 2 software generations, whichever provides a longer coverage. It must also run on the lowest spec devices allowed by these softwares. This includes, but is not limited to, smartphones up to 3 years in age, computers running versions of Windows as early as Windows 7, or MacOS as early as Sierra, and all devices capable of running these operating systems.

2.4.2 Software

The system is an application that is accessible on the following browsers at launch; Google Chrome version 72.0.3626 or later , Mozilla Firefox version 65.0 or later, Internet Explorer 11, Microsoft edge version 40.15063 or later and Safari version 12.0.2 or later. Mobile devices, PC's and tablets are all able to use the system with one of these browsers. The weekly summary feature accessible on the manager account is able to export the list of hours that each employee worked.

2.5 Design and Implementation Constraints

2.5.1 Hardware Limitations

The scheduling system is accessible to all employees on older and less powerful devices as outlined in 2.4.1. and 2.4.2. However, for systems not meeting the requirements set out in 2.4.1, the absolute minimum device supported needs a minimum of 2GB for x64 (1GB for x32) of RAM (4GB recommended), a minimum 1.0 GHz CPU base clock speed (1.5 GHz recommended) and Internet Connection Broadband with a minimum speed of 4Mbps (500KBps).

2.5.2 Technologies and Tools

The system is an application hosted on a cloud application service. The application is easy to update, change and maintain.

2.5.3 Security Considerations

A management account requires the greatest degree of security as each staff user and the hours worked by that staff user are accessible. Should a manager account be compromised, there is potential for damage to the schedule. There is not any financial information stored within the system however, account security is a priority.

2.6 Assumptions and Dependencies

Computer skill: This project assumes that each employee has basic proficiency with computers and that the system is intuitive enough for a non-technical person to operate within two hours of initial introduction.

Employee adaptation: This project assumes that each employee is able to learn how to use the new system with minimal training required.

Internet connection: This project requires that the system has access to the internet to be able to accomodate real-time updates to the schedule on each employee's device including mobile.

3.0 System Features

3.1 Management Tasks

3.1.1 Description and Priority

Management tasks allow a management user to manage certain aspects of the system that all staff users do not have access to (adding or removing users to the system for example.) This feature is of high priority because without it there is no means of adding or removing users. Not being able to add a staff user would render the system non-accessible to any users that do not have a management account.

3.1.2 Functional Requirement

REQ-F-MT-1: The system allows a management user to create and edit the schedule for all other users.

REQ-F-MT-2: The system allows a management user to approve/decline shift cover requests.

REQ-F-MT-3: The system allows a management user to add users to the system.

REQ-F-MT-4: The system allows a management user to delete users from the system.

REQ-F-MT-5: The system allows a management user to view and export a summary of all the hours worked by each employee.

3.2 Calendar

3.2.1 Description and Priority

The calendar feature allows a user to view scheduled shifts in a full-calendar view, create shift cover requests, and respond to shift cover requests. A management user is responsible for manually adding a new week's schedule with enough time for an employee to see the following week. The calendar is a high priority feature because it is the basis of the entire system.

3.2.2 Functional Requirements

REQ-F-C-1: The calendar displays the full-calendar view as manually entered by a management user. Each staff user has the option to view all their shifts, or to view only their own shifts, and can switch between the two views.

REQ-F-C-2: The calendar allows a user to create shift cover requests.

REQ-F-C-3: The calendar displays all shift cover requests to a user.

REQ-F-C-4: The calendar allows a user to respond to shift cover requests.

REQ-F-C-5: The system notifies a management user when a user responds to a shift cover request.

REQ-F-C-6: The system stores the past year's schedule history.

3.3 Profile

3.3.1 Description and Priority

The profile feature allows a user to modify the profile associated with their account. This is of low priority because the system could function normally without this feature.

3.3.2 Functional Requirements

REQ-F-P-1: The system allows a user to optionally add additional information such as a phone number or email to their profile.

REQ-F-P-2: The system allows a user to opt-out of notifications.

3.4 Announcements

3.4.1 Description and Priority

The announcements feature allows a user to view shift cover request announcements and announcements which are posted by a management user. The feature also sends a notification to a user to notify them about a new announcement. Opting out of announcement notifications is done from the profile feature. The announcements feature uses the opt-out information to conditionally send notifications to users who have not opted-out of announcements. A management user can send a mandatory announcement that can not be opted out of.

3.4.2 Functional Requirements

REQ-F-A-1: The system allows a management user to create announcements.

REQ-F-A-2: When a user creates a shift cover request, the system creates an announcement.

REQ-F-A-3: The system displays all announcements to a user.

REQ-F-A-4: When an announcement is created, the system sends a notification to a user who has not opted-out of notifications.

REQ-F-A-5: The system notifies a user when their shift has changed.

4.0 External Interface Requirements

4.1 User Interfaces

The system has two different user interfaces. One interface is to be used with a manager account and has an interface for scheduling; this unique interface is not to be shared with any staff users. The other interface is used by each staff account and is a simple interface that allows the ability to look at the schedule and create a shift cover request. The management interface has the same functionality of the staff user interface, with the addition of the management scheduling interface.

5.0 Non-Functional Requirements

5.1 Security Requirements

Each employee of BreadDev needs to enter personal information, such as email and name, into the new scheduling system. Each employee must be aware of the Personal Information Privacy Act [2] and their consent is required. See act for more details.

REQ-NF-SR-1: While BreadDev is operating within British Columbia, it must comply under the Personal Information Privacy Act.

REQ-NF-SR-2: Each user must log in using a unique username and password to gain access to the scheduling system.

REQ-NF-SR-3: Only a management account is granted access to manager level information.

5.2 Software Quality Attributes

REQ-NF-SQA-1: The scheduling system is reliable by displaying schedule updates as soon as changes are made.

REQ-NF-SQA-2: System maintenance is only done during the hours that BreadDev is closed.

REQ-NF-SQA-3: The scheduling systems is accurate by correctly maintaining input such as the shift time, date, and employee.

REQ-NF-SQA-4: The system is accessible on all user devices with supported browsers (defined earlier) and an internet connection.

6.0 Other Requirements

There are no additional requirements at this time.

Appendix: Issues List

There are currently no issues that have not been addressed.