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Design Specification Document

Capstone / Employee & Account Management System

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# Executive Overview

This document covers the overall design of the application through a proof of concept in the layouts of the UI, ER diagram, UML diagram, and sequence diagram. Additionally, this document will cover any pertinent research required to build the application as well as the development plan.

# 1 User Interface (UI) Layouts

## 1.1 General Layouts

### 1.1.1 Main Activity Layout

This screen shows what a user will see when the application is first loaded. From this screen a user may navigate to either the Employee / Management Login or the Referral screens.

Graphical user interface, text, application, chat or text message

Description automatically generated

### 1.1.2 Account Login Layout

This screen is reached from pressing the Employee / Management Login button on the layout from the main screen. Users will enter their username and password credentials to access the application. Regular employees upon a successful login will land on the Employee Main screen. Employees that are flagged as management will land on the Manager Main screen. Invalid credentials will prevent logins and appropriate messaging will be displayed on the screen.

Graphical user interface, application

Description automatically generated

### 1.1.3 Referral Layout

This screen is used for entering a potential customer into the system to receive a quote of services. Submissions are sent directly to NW Lawn Maintenance email account.

Graphical user interface

Description automatically generated

## 1.2 Employee Layouts

### 1.2.1 Employee Main Layout

This screen is the landing page for all employees that have no management access to application. From this screen, an employee can navigate to the Update Information or Employee Schedule screens. Employees can also logout of the application from this screen.

Graphical user interface, text, application

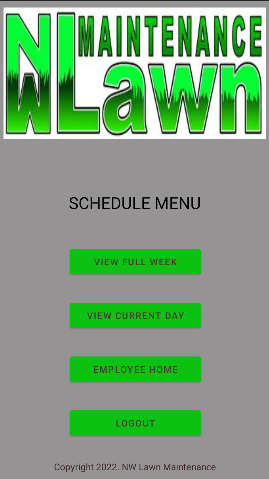
Description automatically generated

### 1.2.2 Update Information Layout

This layout has not been implemented yet into the application.

### 1.2.3 Employee Schedule Layout

This screen is the main schedule layout. From this screen, employee may navigate to View Weekly Schedule or Current Workday screens.



### 1.2.4 View Weekly Schedule Layout

This layout has not been implemented yet into the application.

### 1.2.5 View Current Workday Layout

This screen is the layout for the Current Workday view. On this screen, employees will see the date, times, and customers for the current workday as well as the status of the job. Clicking on a customer name will navigate the employee to the customer job screen.

Graphical user interface, text

Description automatically generated

### 1.2.6 View Customer Job Layout

This screen is what an employee sees when a customer is clicked on from the current workday screen. From this screen, an employee can see the customer’s information, click the map link for directions to job site, start/stop job, and update and special notes for the job.

Graphical user interface, text, application

Description automatically generated

## 1.3 Management Layouts

### 1.3.1 Manager Main Layout

This screen is the landing page for all employees that are flagged as management. From this screen, managers can switch to the Employee Main, Add Employee, Add Customer, Manage Employee, Manage Customer, or Manage Schedule screens. Managers may also logout of the application from this screen.

Graphical user interface, text, application, chat or text message

Description automatically generated

### 1.3.2 Add Employee Layout

This screen is where management can add a new employee into the system. After submission of employee information, a username and temporary password will be sent via email to the employee.

Graphical user interface, text, application, email

Description automatically generated

### 1.3.3 Manage Employee Layout

This layout has not been implemented yet into the application.

### 1.3.4 Add Customer Layout

This screen is where management can add a new customer into the system. After submission of the customer information, the customer will be added to the schedule builder for future scheduling.

Graphical user interface, table

Description automatically generated

### 1.3.5 Manage Customer Layout

This layout has not been implemented yet into the application.

### 1.3.6 Schedule Builder Layout

This screen is where management can add jobs to the schedule. Managers will select a date from the drop-down menu that is within the next 7 workdays. After a date is selected, managers will select a timeslot from the drop-down menu listing available times. After a timeslot is selected, managers will select an available worker to assigned to the job. Finally, managers will select a customer based on the frequency of services and the last service date to be added. Once submitted, information from the drop-down menus will be added to the employee’s schedule.

Graphical user interface, application

Description automatically generated

# 2 Research

The following are the links to all documentation needed for development of the application. The documentation is officially recognized and provided as a tool for using the IDE, programming language, and database.

* Android Studio User Guide

<https://developer.android.com/studio/intro>

* Kotlin Docs

<https://kotlinlang.org/docs/home.html>

* Firebase Authentication

<https://firebase.google.com/docs/auth/>

* Firebase Realtime Database

<https://firebase.google.com/docs/database/>

# 3 Development Plan

Chart

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# 4 Design

## 4.1 Entity-Relationship (ER) Model

Graphical user interface

Description automatically generated

## 4.2 Unified Modeling Language (UML) Diagram

## A diagram of a flowchart Description automatically generated with low confidence

## 4.3 Sequence Diagram

### 4.3.1 Employee Sequence Diagram

Waterfall chart

Description automatically generated

### 4.3.2 Manager Sequence Diagram

Diagram

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## 4.4 Deployment Diagram

Diagram

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