C868 – Software Capstone Project Summary

Task 2 – Section C

Capstone Proposal Project Name: **Time Cutter – Workforce Management**

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3 AM Productions

Software Solution

Time Cutter: A Workforce Management System

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A. Installation Guide

A.1 Windows

To download 'The Workbook' application for the Windows system:

Navigate to this link on your Windows device:

https://drive.google.com/drive/folders/1MKfHpO7p2ZRR-f-tn8YyXYYXusyohIhr?usp=sharing
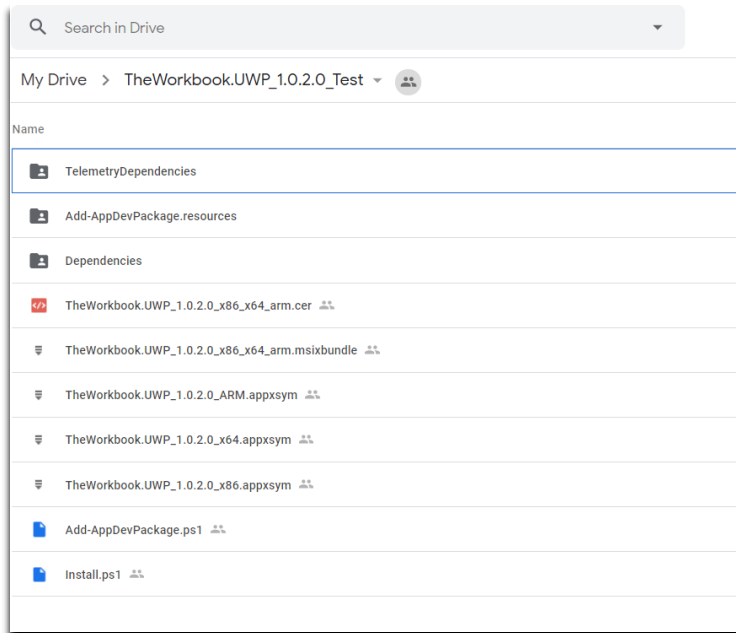
The link will open to google drive to a series of folders showing different Windows versions.

Download the entire folder by clicking on the down arrow beside the folder name at the top.

Figure 1 Google Drive Folder for Windows Files
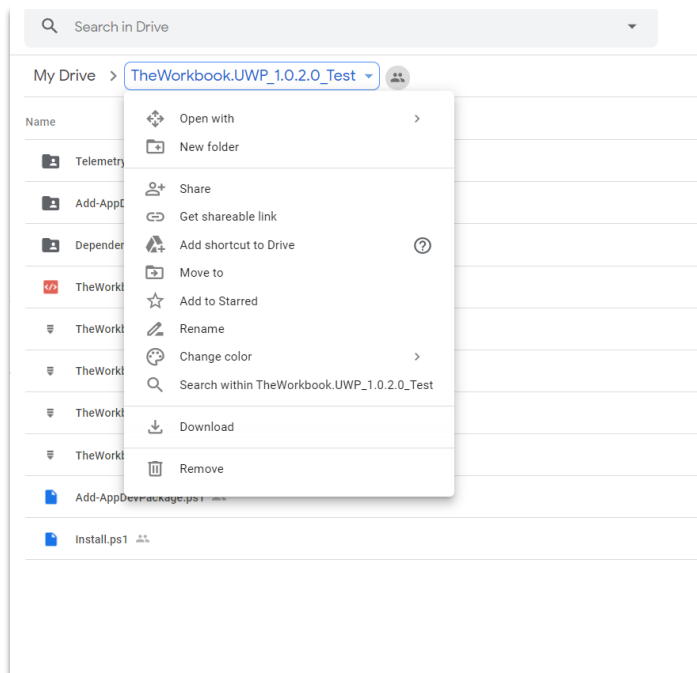
Here we can see the drop-down menu from clicking on the folder down arrow. Now click on the download button to start downloading the entire folder. This could take some time, so making tea at this point is recommended.

Figure 2 Google Drive Folder with File Menu Displayed
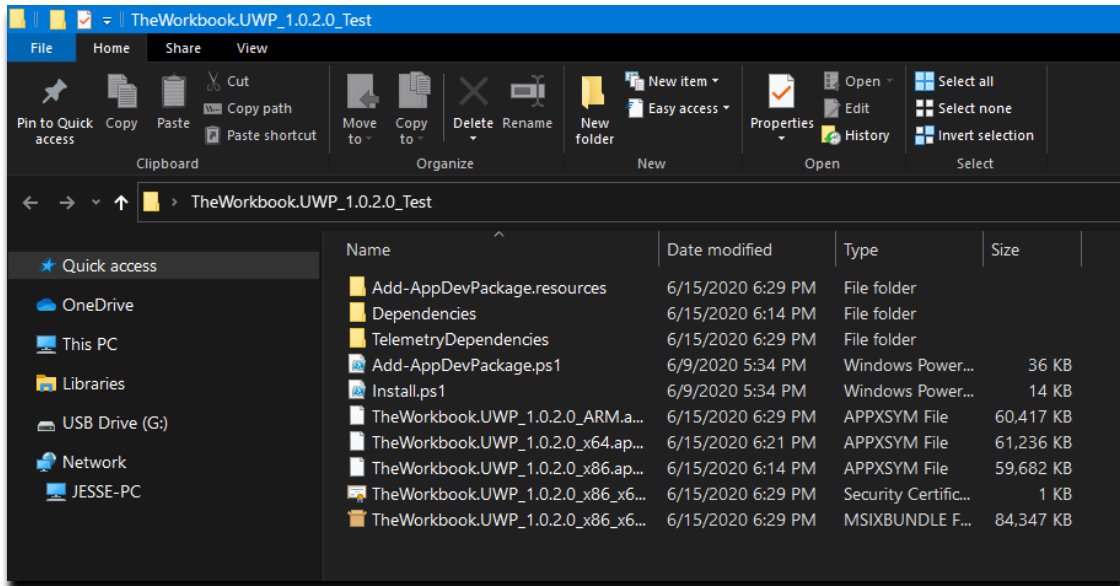
Figure 3 Downloaded Folder for Windows Installation

Once the folder is downloaded, open the folder from where you downloaded it. This will probably be your download folder. Before we install we need to tell the computer that the application is from a trusted application store. To accomplish this, click on the Windows Security Certificate. It will be a file that ends in .cer.

This will open the file information for the certificate. Click on the 'Install Certificate'.
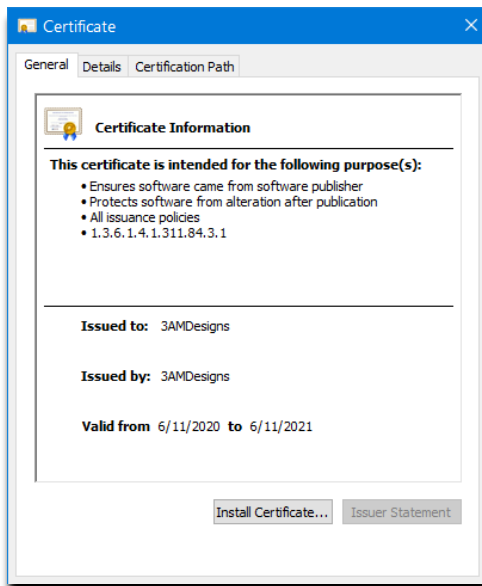
Figure 5 Certificate Information
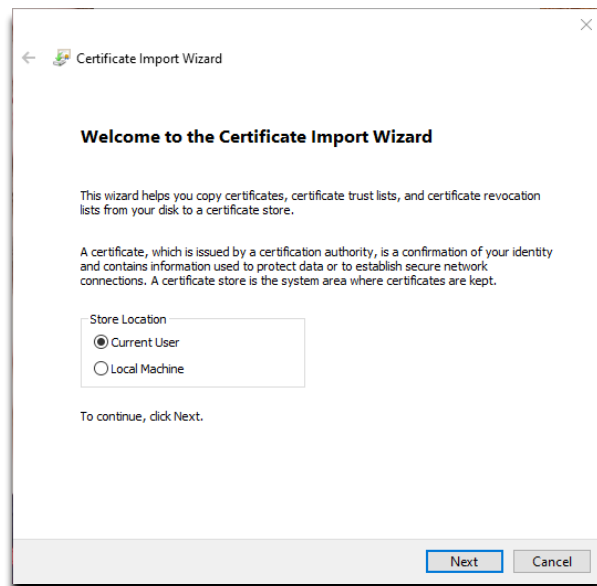
Figure 4 Certificate Wizard Opening Screen

The 'Certificate Wizard' will open. Select to add the certificate only for the 'Current User' and click 'Next'.
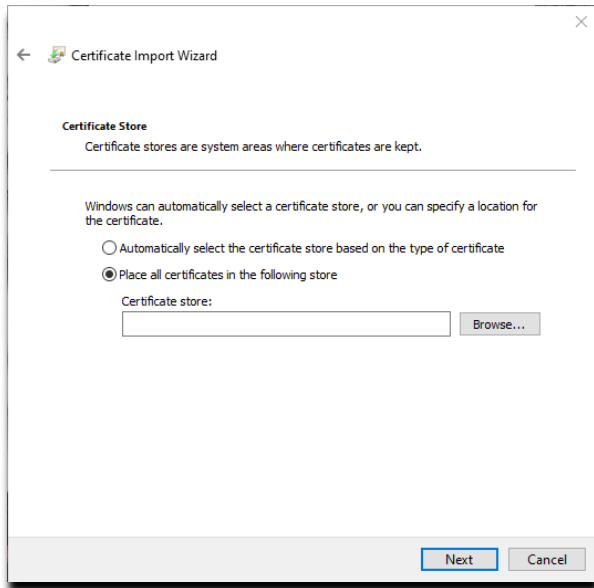
Figure 6 Certificate Store Options

The 'Certificate Wizard' will then open to ask which certificate store to keep the new certificate in.

Select 'Place all certificates in the following store' and click 'Browse'.
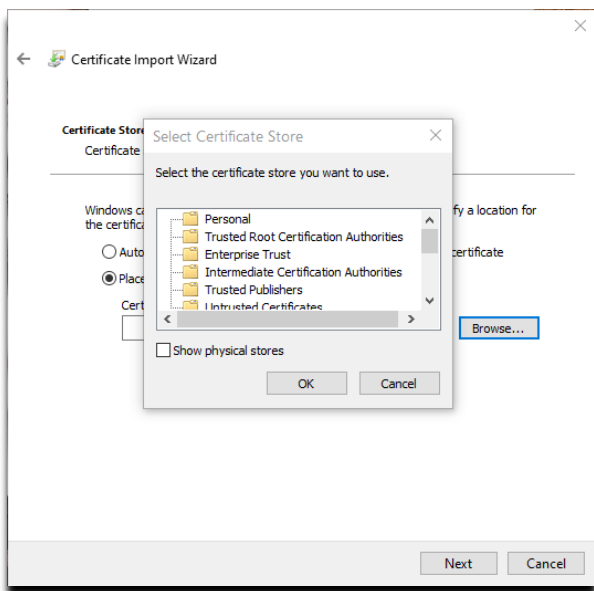
Figure 7 Certificate Store Selections

Click on 'Trusted Root Certification Authorities' and click 'Ok'.

The selection will now appear in the 'Certificate Store' entry. Click on 'Next' to continue.

Double-check the information and click 'Finish' to complete accepting the applications' certificate information. You can now install the application.
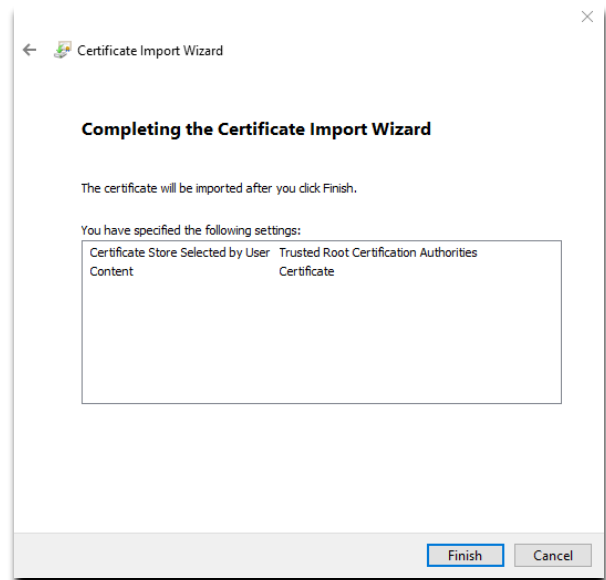
Figure 8 Certificate Confirmation Selection Page
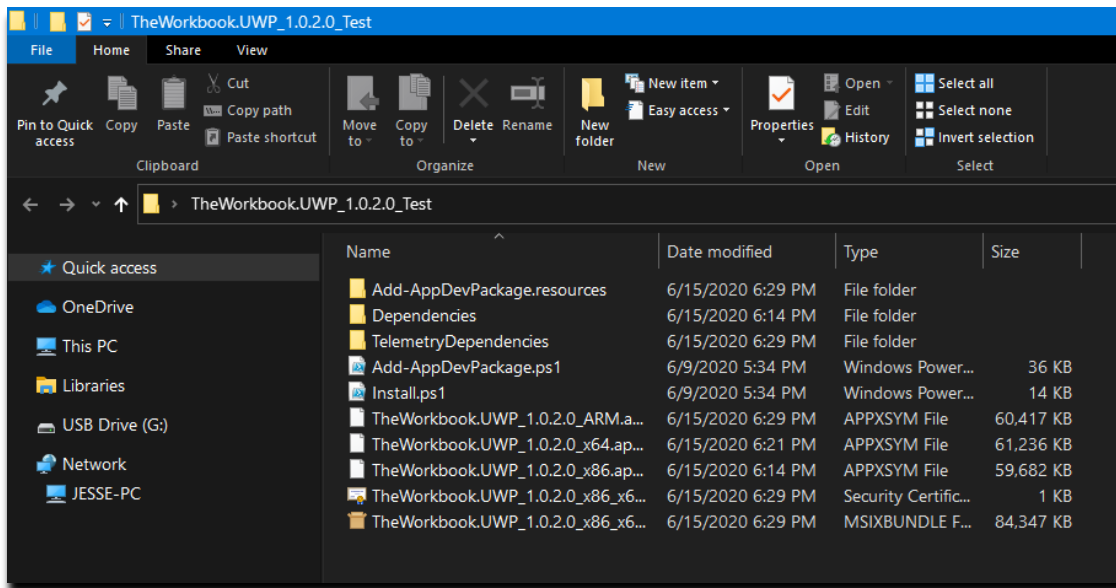
Figure 9 Downloaded Folder for Windows Installation

Now returning to the folder you downloaded, right-click on 'Add-AppDevPackage.ps1' and select 'Run in Powershell'

This will lead to a blue installation screen where the application is being installed.

Once the application is installed press 'Enter' and select the application from the 'Start Menu' to enjoy!
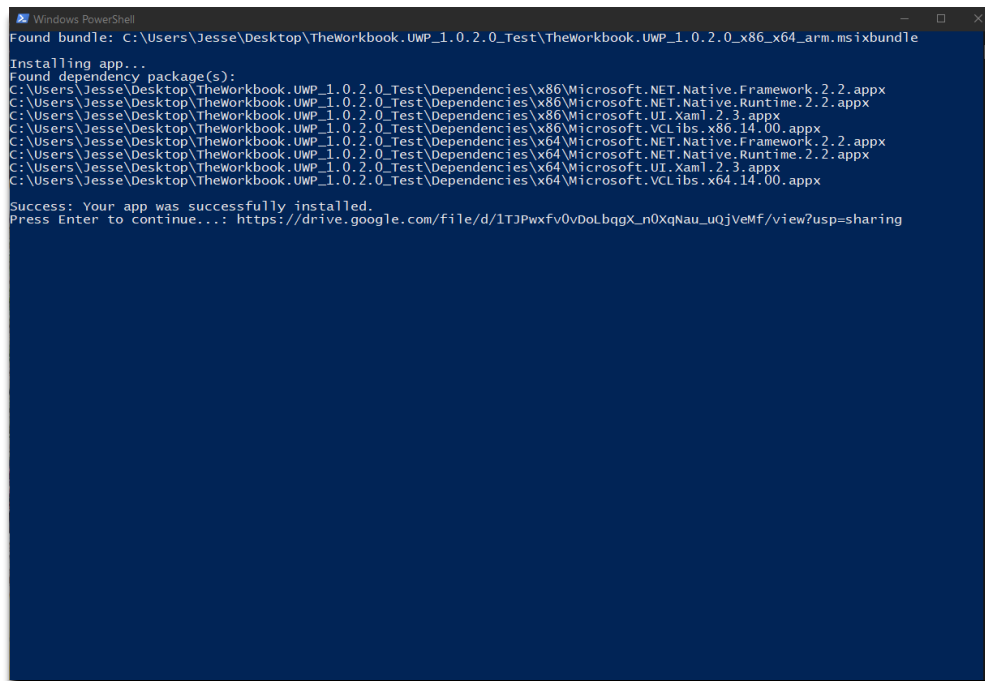

Figure 10 Powershell Installation

A.2 Android

To download 'The Workbook' application for the Android system:

Navigate to this link on your Android device:
https://drive.google.com/file/d/1TJPwxfv0vDoLbqgX_n0XqNau_uQjVeMf/view?usp=sharing

Click on the file ending in .apk and click on download.

Upon the Android device which you downloaded the app, navigate to the "Files" application.
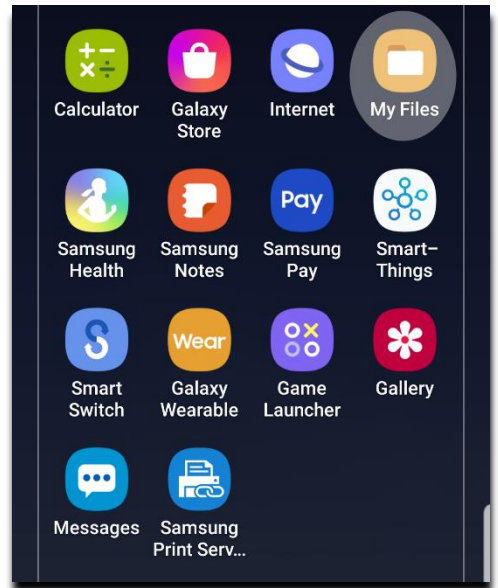
Figure 11 Application on Phone, My Files Highlighted

Figure 12 Google Drive Download Screen

Select the newly downloaded .apk file.

When the 'Open with' menu appears, click on 'Package Manager' to begin the installation.
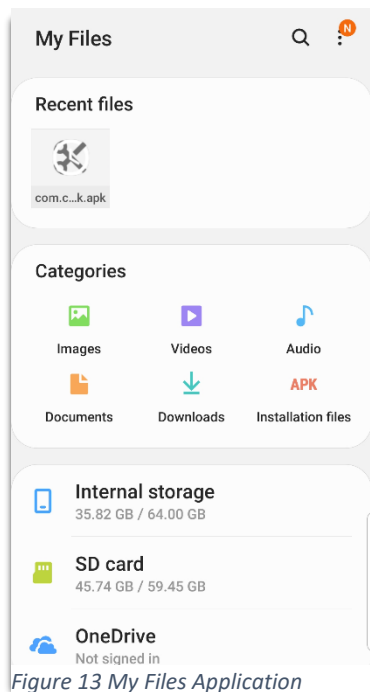
Figure 13 My Files Application Showing Download
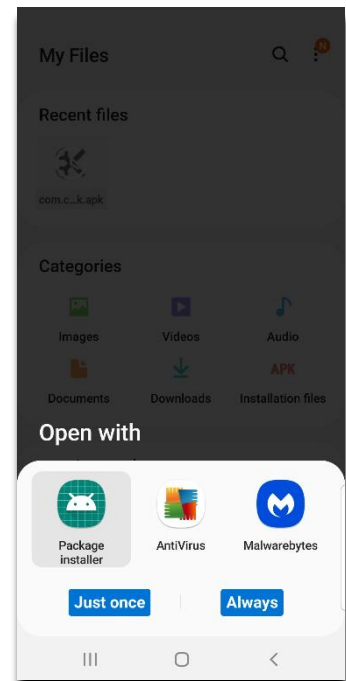
Figure 14 'Open With' Overlay in 'My Files'
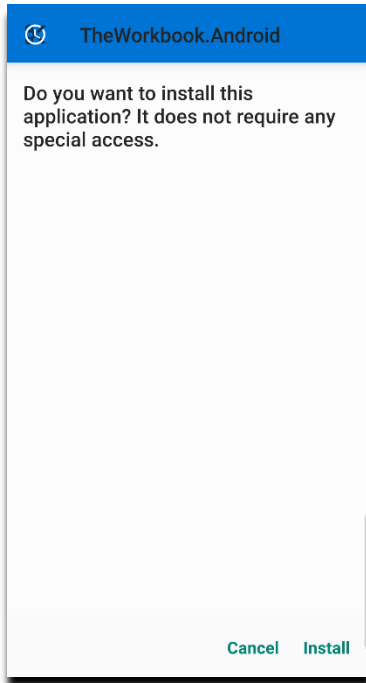
Figure 16 *Installation Confirmation*

The 'Package Manager' will check and see if this is the application you'd like to install. Click 'Install'.

Once the installation is complete, click 'Open' to start the application. You should also now find the application under your menu with your other applications.
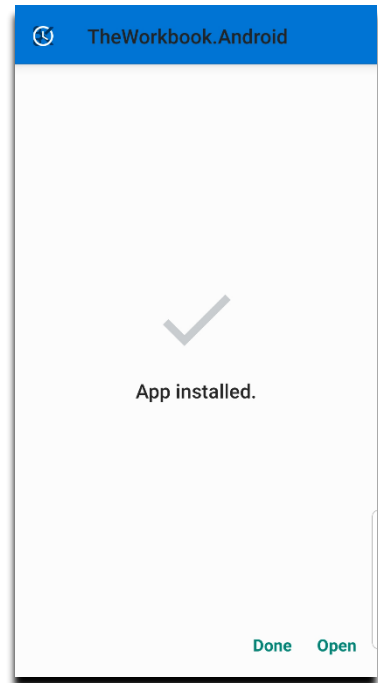
Figure 15 Competed Installation Message

B. User Guide

B.1 Navigation Bar

The navigation bar is present on all pages except for the login page and has the functionality to back up to the previous page on any page it appears. The title of the page or relevant page information is found in the center. On the right side of the navigation bar is an ellipsis that contains additional options. On most pages, this menu only includes navigation to the 'Notice' page and on the

Figure 17 The Navigation Bar

'Splashpage' it also includes the 'Profile' button to get to the 'Profile' page.

Figure 18 The Business Registration Page

B.2 Registering A New Business

The 'Register' button on the 'Login' page will lead to the page for registering a new business. The registration information is all that is needed for now. Later on, a profile page will allow the business to be named. The Username and Password must be more than 8 characters and the email must be valid.
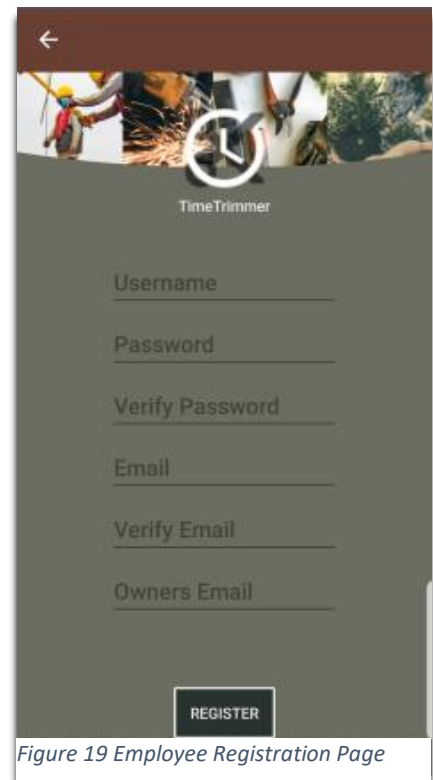
Figure 19 Employee Registration Page

B.3 Registering As A New Employee

The 'Register Employee' button will move the user from the 'Login' page to an alternate registration page for employees. The employee only needs to enter the email of the owner of the company they are working for, and they will be registered with that company. The Username and Password must be more than 8 characters and the email must be valid.

B.4 Logging Into The Application

The 'Login' page is created as the entrance platform to the application. The user can use the 'Register Business' button or the 'Register Employee' button to create a user of the appropriate permissions for the application. The Username and the Password must be more than 8 characters upon registration.

Figure 20 Login Page

B.5 Dashboard/Splashpage

The 'Splashpage' is the central hub of the application showing the work for that day, The type of user logged in has different responsibility levels. Both user types have access to the Calendar, Notice, and Jobs pages. The Owner views all jobs for this day on the splash page but the employee only sees the jobs assigned to them for today. If no jobs are scheduled an alert will appear to inform them. The ellipsis at the top will allow access from only this page to the profile page. The employee also has access to the 'Time Clock' page from here.

Figure 21 Employer Splashpage

Figure 22 Employee Splashpage

B.6 Profile/User Details

The 'Profile' page opens upon the first login to allow the user to enter their information. The company name is entered here for the owner and is automatically entered for the employee. The application will check for a valid phone number. After this first registration, the 'Profile' page can be returned to from the 'Splashpage' through a button found in the ellipsis at the top.
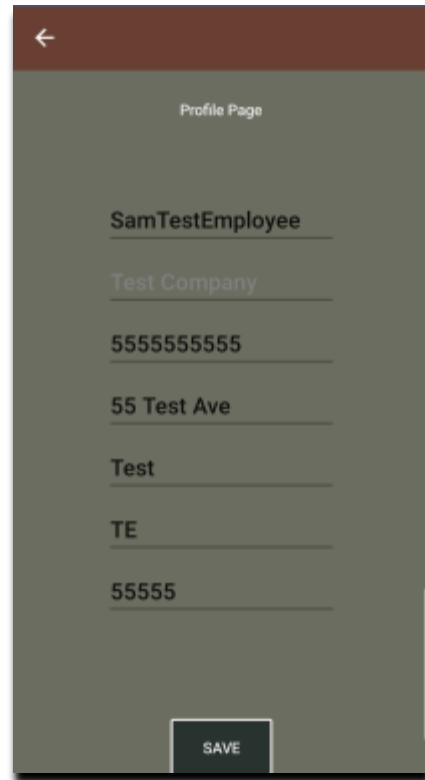
Figure 23 Profile Page

B.7 Notice/Messaging

The 'Notice' page is found within the ellipsis of the navigation bar on the top of most pages. It can also be found on the 'Splashpage'. The purpose of the page is to provide a way to group message updates and changes to the schedule or work. It can also send hours to the owner or supervisors. The employees are only able to access messaging or the crew, where the supervisors and employer can use the crew and supervisor chat.
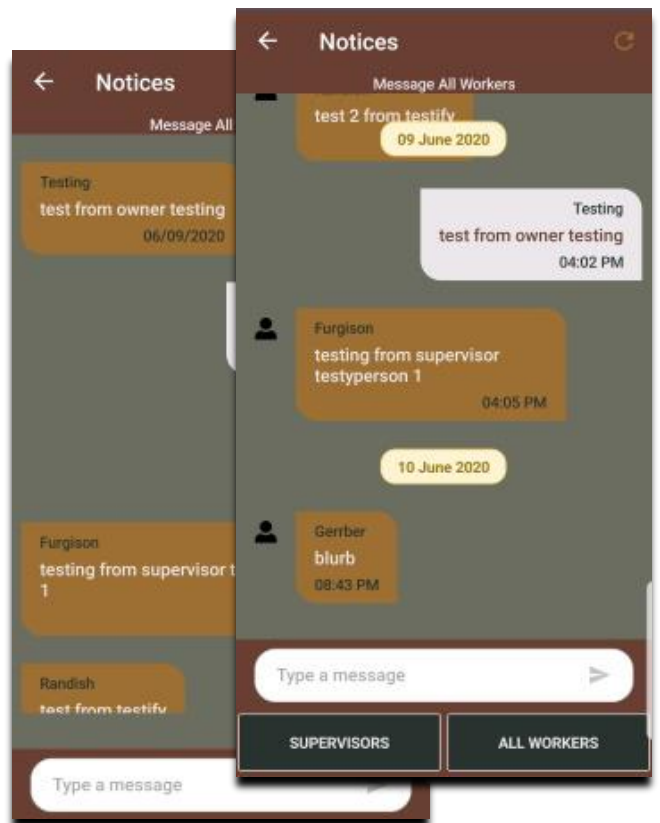
Figure 24 The Notice Page

B.8 The Work Calendar

The 'Calendar' page is accessible by all users from the 'Splashpage'. The Calendar is designed to provide a cloud-based platform for viewing the workdays, time off requests, and request blocked days. From this page, users can click on dates and scan the calendar to make requests. Employers can check requests and approve them.

Figure 25 Employee Calendar

Figure 26 Employer Calendar

Days that are blocked by the owner show up in black and will not allow requests to occur but will still allow work to be scheduled. Days that are approved for time off or record when employees are sick, will be recorded and marked as approved to show they owner has allowed their request.

Figure 28 Calendar Blocked Dates

Figure 27 Example of Calendar Requests

If an employer clicks on the button 'View Request' they can create new requests, even on days where there are no requests. If no requests are on that date, a confirmation pop-up will appear to confirm the scheduling, then an overlay display will allow the owner to select different aspects of the request.

Figure 29 Request Confirmation

Figure 31 Employee Request List

The overlay allows the owner to select which employee is requesting the day off out of a list of the employees.

Then a list of generic reasons will appear to protect the employees' right to privacy. The agreed-upon reason is selected and the appointment is automatically approved. If a request is made by an employee, the request appears highlighted and unapproved.

Figure 30 Calendar Request Reason

B.9 As An Employer:

B.9.1 Working With Employees

B.9.1.1 Employees

The employer has a specific page accessible from their 'Splashpage' that allows them to create, modify, and delete employees. Modifications can include personal information, hourly wage, or upgrading them to a supervisor user. Clicking on 'Add Employee' or 'Edit Employee' will bring the user to the same page, with 'Edit Employee' automatically filling in the selected employees' information for modification. The 'Crews' button brings the user to the 'Crews' page.
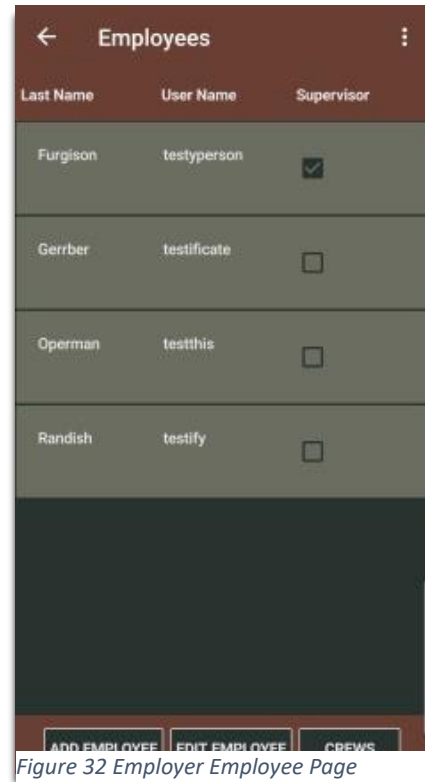
Figure 32 Employer Employee Page

Figure 33 Employer New Employee Page

B.9.1.2 Employee Add or Edit

The 'Add Employee' page is an alternate way of adding an employee to the workforce without going through the registration page. If an employee is added on this page, they can use this information to log in from the 'Login' page. This page also allows employers to change the permission level employees receive upon logging in by clicking the 'Supervisor' checkbox and saving.

B.9.1.3 Crew Add or Edit

The 'Crews' page allows the creation of easily addable groups to scheduled jobs. The creation of crews is local to the device and doesn't carry over to alternate devices. A crew can have multiple members and members can belong to multiple crews. This allows owners to create special roles for their workers to easily divide the work.

When clicking the button 'Add Crew' an overlay will appear where a user can name the crew. Once the crew is named an 'Alert 'will appear to inform the user to add employees to the crew before the crew will be saved for use with scheduled jobs. After creating the crew's name, nothing should appear on the main page until the user clicks on modify crew to add members, as was instructed.

The 'Modify Crew' button will show the new crew's name and allow the user several options with crew management. They can edit the members, delete, copy a crew, and rename the crew.

The button 'Edit Members' will bring the user to the 'Add to ---- crew' page where they can select created workers or unselect workers to change the crew to their preference.

A recommended convention is to name the crew of workers after the jobs or tasks you plan to have them complete. For instance, the 'Mowing the Farm' crew, informs the user that that crew can quickly be selected when

Figure 35 Main Crews Page

Figure 34 Add or Rename Crew Overlay

Figure 37 Modify Crew Page

Figure 36 Edit Members Crew Page

B.9.2 Working With Jobs
B.9.2.1 Jobs Page

The 'Jobs' page is the location that a user can see all the jobs that have been scheduled. Different permission levels have different acc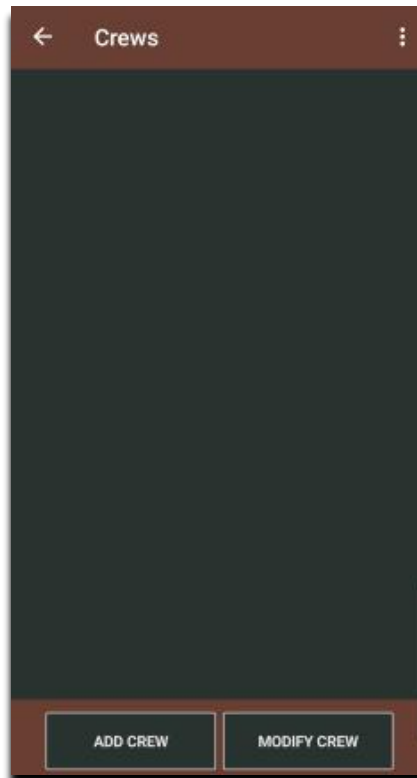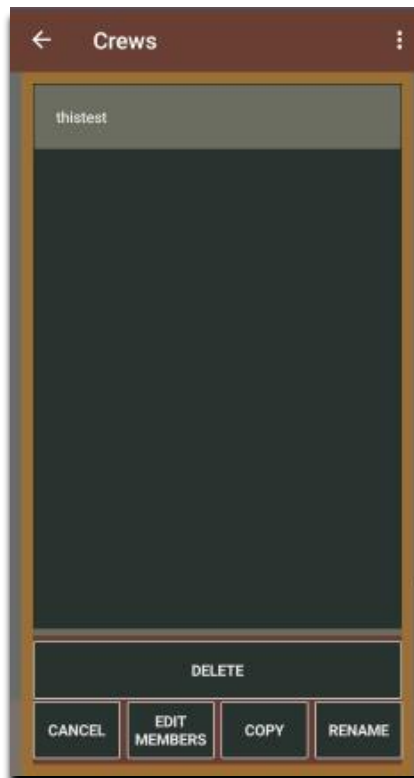essibility at this point. For the owner, it is a place where they go to see the scope of all jobs that have been scheduled. This includes a header area, broken down into year, month and day, with the count of jobs for that interval calculated. The employer will also be able to see if employees are assigned to the scheduled job. This is important because any job that doesn't have scheduled employees, will not allow the employees to see the job, or supervisors to edit the job's times.

The owner from this page has a bar in the footer of the page that allows him to navigate to all properties that have been referred to him by customers. This button is the 'All Jobs' button and will show all jobs, including those unscheduled

The 'Notes' button is also present on this page for all types of users. To make the button appear the user must select the

Figure 38 Employer Scheduled Jobs Page

job they would like to add a note. The note is specifically for that job, and not just for the scheduled instance of it. Future selections of the same job will show notes recorded from earlier notes for that job. This same convention is necessary for the owner to assigned workers or to delete a job.

Employees can also select a job to begin recording times for that job. By selecting the button 'Job Times' the employee is redirected to the 'Task' page where they can record the times for the individual tasks for that job.
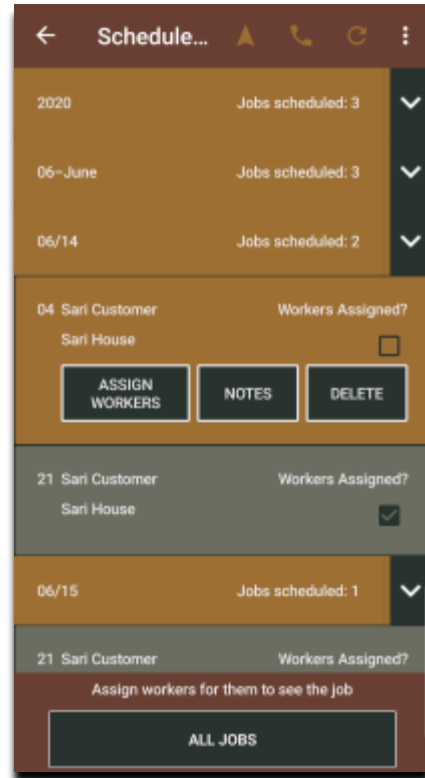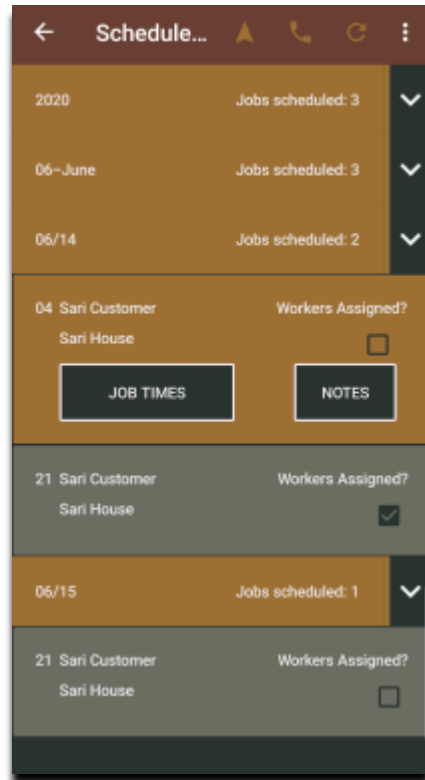

Figure 39 Notes Page

Figure 40 Supervisor Scheduled Jobs Page

B.9.2.2 All Jobs Page

The 'All Jobs' page, or 'Unscheduled Jobs' page, is where the owner can see the jobs that were created to service the customer. Another way of viewing these jobs is to view them as locations that have or might be serviced for a customer. They don't have to be scheduled yet or they may be scheduled again.

By clicking the 'New Job' or 'Edit Job' buttons the user can open an overlay where they can add or edit a job.

The 'Delete Job' button will delete a job from the database and remove any times that the job has been worked, so be careful. Only delete jobs once you have imported them into any outside recordkeeping you use for higher-end business analytics.

The 'Schedule Job' button opens up for the user the ability to schedule the date and tasks that the job will require. The user must select a job to schedule from the list first.

If no customers are created the user will only see 3 buttons and will be unable to proceed to schedule or create jobs until they have created a customer for that job.
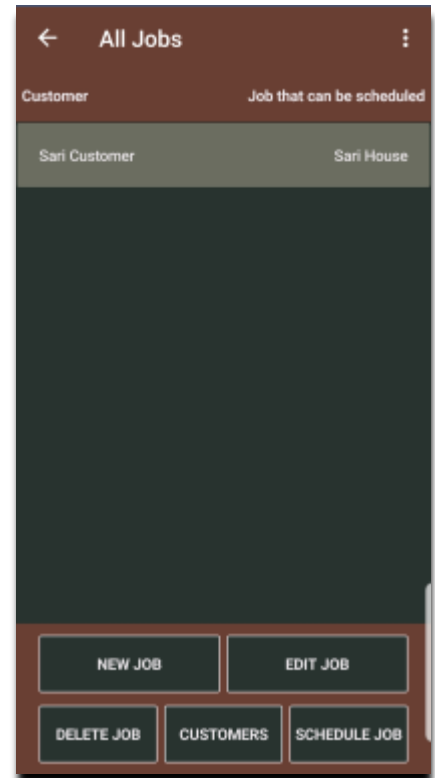
Figure 41 Unscheduled Jobs/All Jobs Page

The new or edit job overlay can create a job for a customer at an address other than the customers mailing address provided on the customer form. If the address is the same, the user can click the 'Use Home Address' checkbox to have those areas automatically filled.

If the job has any discount, the user can enter it here and it will remove a percentage of the total cost for the job.

The user can also navigate from here to the 'Customers' page with the 'New Customer' button where the can add additional customers if they require.

Figure 42 New/Edit Job Page

B.9.2.3 Customer Page

The 'Customer' page is where the owner can add new customers to the business. As new customers are added they are displayed at the top and can be scrolled through. If one is clicked, it's information is displayed in the text fields below. To create a new customer, fill in new information, and click the 'Save' button.

Once a new customer is created, the owner can click the 'Cancel' button to move back to the 'Unscheduled Jobs' or 'All Jobs' page.
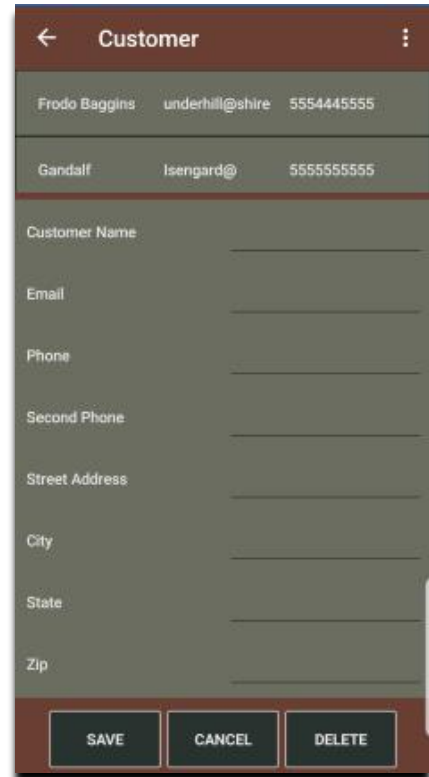

Figure 43 Customer Page

B.9.2.4 Schedule A Job

The 'Date' page and 'Hour' page will appear when the 'Schedule Job' button is clicked on the 'Unscheduled Job's page or if the 'Edit Times' button is clicked on the 'Timeclock' or when employees click the 'Edit Times' button to change task records.

For some days scheduled jobs may not have an exact time scheduled and may instead follow an order of priority. The 'Hour' page can be used to track the order of jobs for the day, up to 24 jobs in a day, instead of being used to define a specific hour of work.
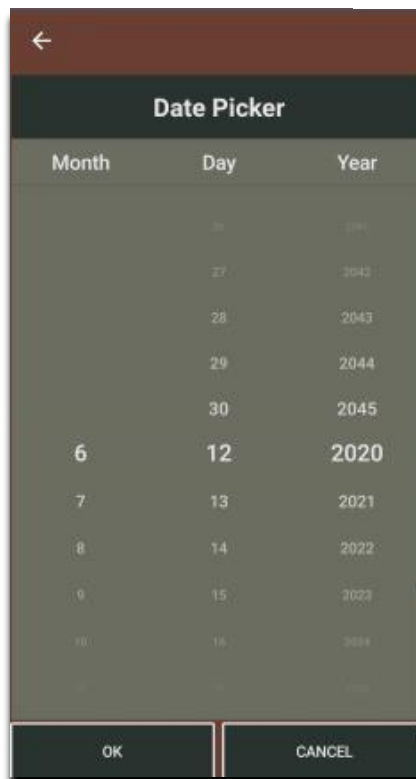

Figure 44 Date Page

Figure 45 Order or Hour of Job

B.9.2.5 Jobs Tasks and Tools

After selecting a date and time for a scheduled job the user is required to select the tasks that will be performed on the 'Task/Tool' page. This page has an overlay that allows the user to create tasks and tools and define their use per hour. This gives a basis of price for the individual job and allows consistent pricing per job for the owner.

Created Task/Tool combinations are added from the overlay to the bottom list and are added or removed from the job on the top with the 'Add' or 'Remove' buttons in the center of the page
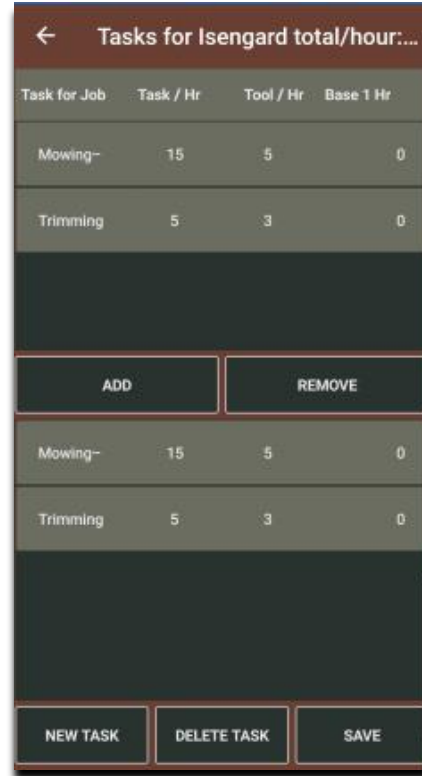
Figure 46 Job Task/Tool List Page

The Tasks and Tools are saved separately on the database and are selectable from dropdowns on the overlay, however, their combination is saved on the phone, so when switching between devices, tasks and tool combinations will need to be saved together again.

To create a new task or tool, simply enter the new information into the fields and click the 'Save' button.
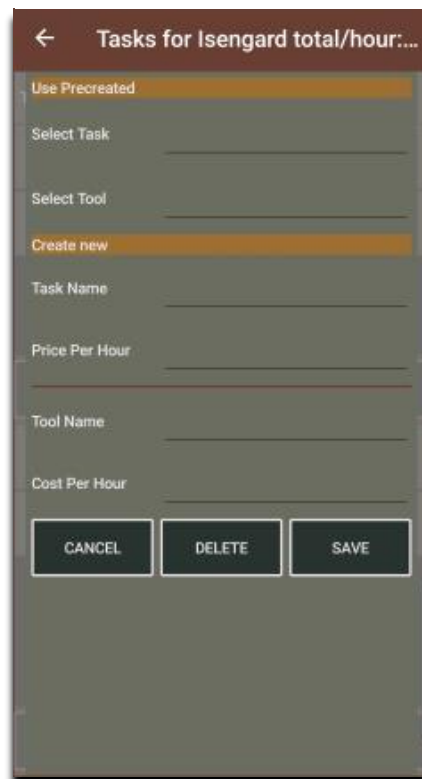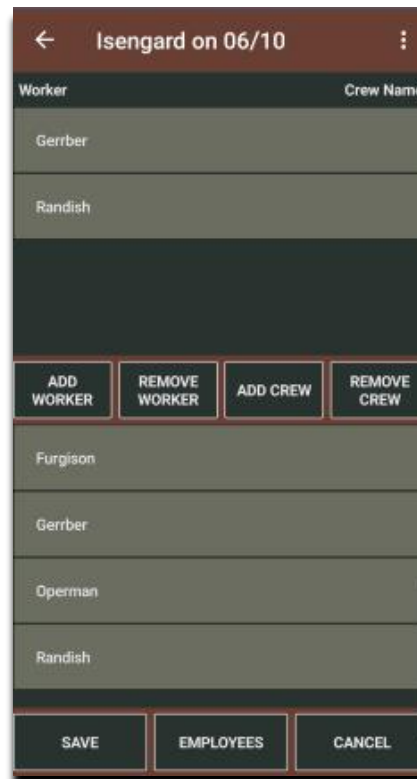
Figure 47 Task/Tool Creation Page

B.9.2.6 Adding Employees To A Job

Figure 48 Adding Employees to a Job

From the 'Scheduled Jobs' or just 'Jobs' page the user can click on a job and select the 'Assign Workers' button to assign the job to specific workers. This will allow the employees who have the job assigned to them to see the job and modify the times.

The employer must first have created employees to add to the job. If there are no employees listed in the bottom list, the employer can click on the 'Employees' button to move to the 'Employee' page and add employees.

The top list is the employees added to the job. The can be added with the center bar of buttons, individually or by the crew. Before an employee or crew can be added they must first be selected.

Crews created on the 'Crews' page will be listed here with their employees. This can lead to multiple listings of the same employee, from different crews. Despite having multiple listings on the bottom, employees can be added to the top list only once.

Once employees are added, and the 'Save' button is clicked, the employees will be able to log in and see the job on their 'Splashpage' or 'Scheduled Jobs' page.

B.9.3 Reports

The 'Reports' page is accessible from the 'Splashpage' using the 'Reports' button. The reports are available only to the owner as simple reports and are not designed for high business reporting functions. They only provide a snapshot of the jobs.

The page opens to the 'Jobs' display, accessible also from the 'Jobs' button. The 'Jobs' display shows the base per hour for any job that has been created by the owner.

The 'Workers' button switches the display to a list of the employees and the number of days they have worked and the number of days they have specifically taken off.

Figure 49 Reports for Jobs

Figure 51 Reports for Employees

On the Windows platform, the owner can export the reports to a pdf file for storage or use on a business reporting tool.
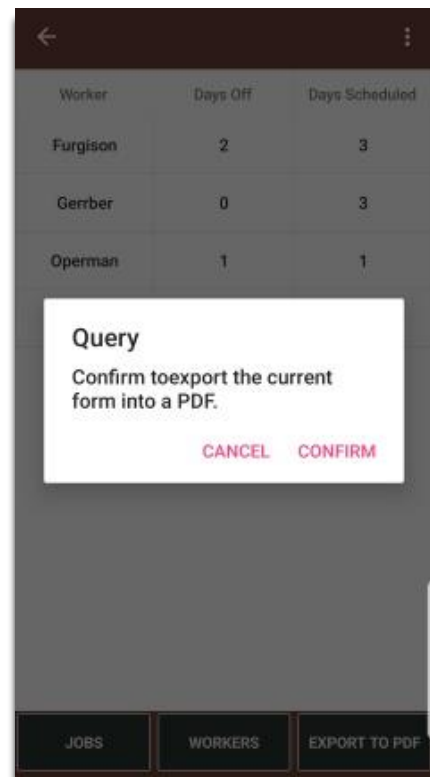

Figure 50 Export to PDF Confirmation

B.10 As A Supervisor/Worker

B.10.1 Times And Job Tasks

The 'Jobs Times' page can be reached from the 'Scheduled Jobs' page by selecting the record to be tracked and clicking on the 'Jobs Times' button.

The 'Jobs Times' page will list the tool for the task and allow the employee to start recording times for using the tool/task by using the 'New Clock In' button and the 'Clock Out' button.
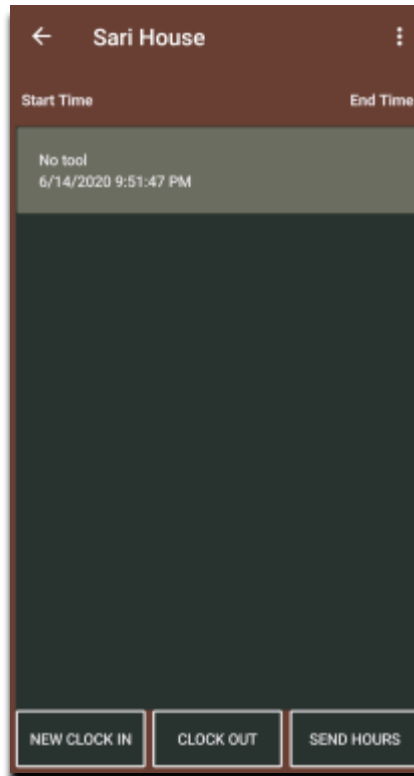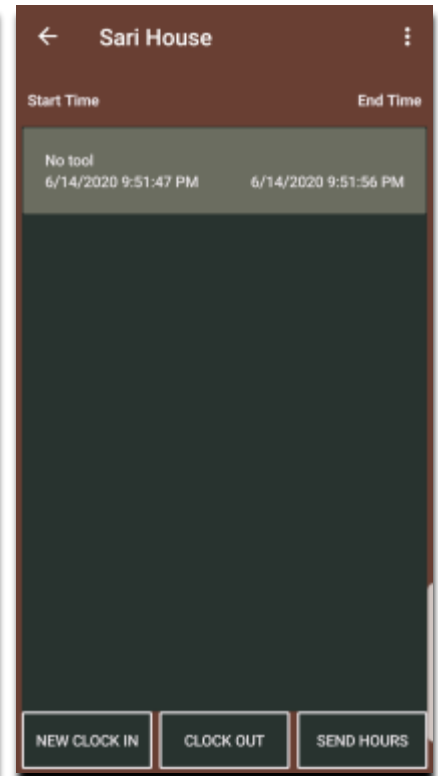

Figure 53 Time and Task Time Clock

Figure 52 Time and Task Time Clock Entry Complete

Once all times for the job are recorded, the user can send the hours to the supervisors or owner view the 'Send Hours' button. This will open a confirmation screen before sending the hours. If the user is a supervisor, they will be able to see the report of the job's start and end times in the supervisor list of the 'Notice' page. If the employee is not a supervisor they will not be able to confirm that the reported hours were sent.
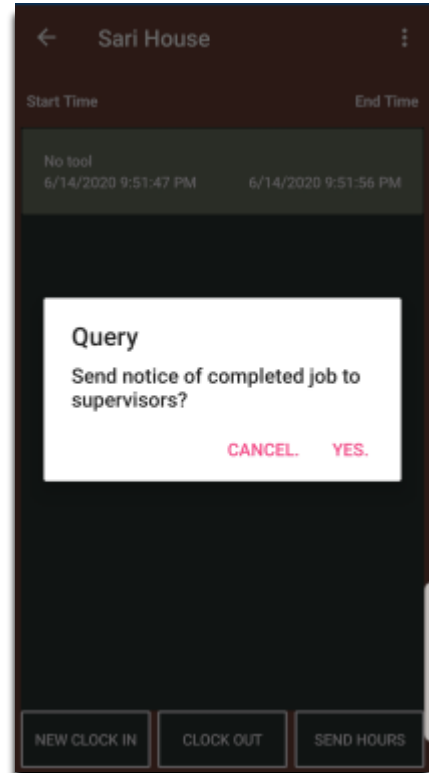

Figure 54 Time and Task Entry Send Confirmation

B.10.2 Timeclock

Figure 56 Time Clock Page

Figure 57 Time Clock Page with Record

The 'Time Clock' page can be accessed from the 'Splashpage' of the supervisors or employees by clicking the 'TimeClock' button. Once there the employee can start a new instance of a work span by clicking the 'Clock In' button and go on break or end a work span by clicking the 'Clock Out' button.
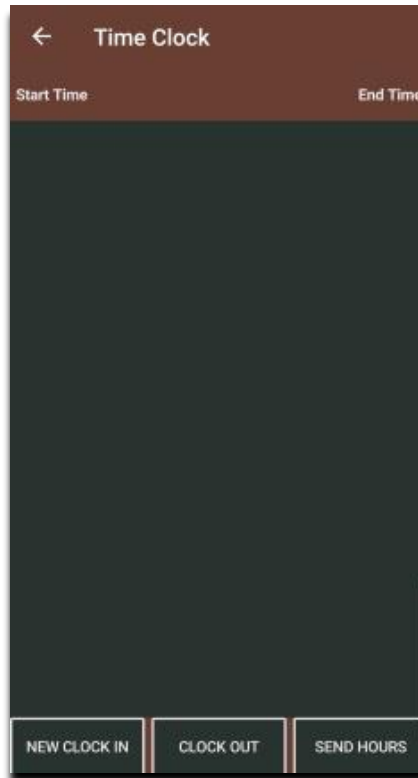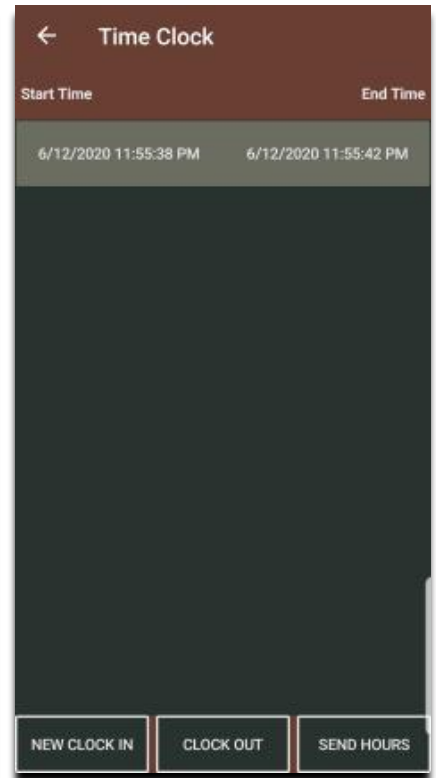

Figure 55 Time Clock Send Confirmation

When a record is ended, the user can select the record and choose to click the 'Send Hours' button to produce a record on the supervisor/owner 'Notice' page. A confirmation query will appear before the records will be sent. If the user is a non-supervisory employee, they will be unable to confirm the record was sent in the 'Notice' page since they don't have access to that part of the 'Notice' page.
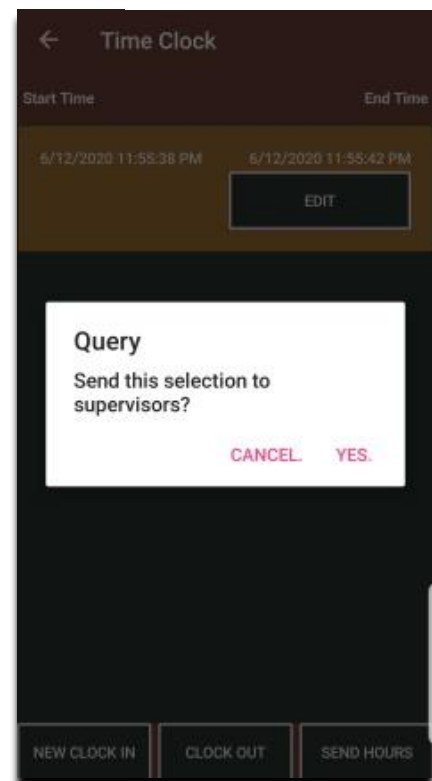
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Borba, Jonathan (Photographer) (2020, April 28) Retrieved from
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Maria, Orlova (Photographer) (2019, February 5) Retrieved from
https://unsplash.com/photos/LuRFzqHGiA4

Birkett, Adam (Photographer) (2017, August 15) Retrieved from
https://unsplash.com/photos/TLomZTHsIqg