University of Regina

CHECK THE LIST
PROJECT REPORT

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CS455

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Motivation

We all have a lot of tasks we need to accomplish within our day. Between our responsibilities at work, at school, and at home we have a lot that we need to keep track of. Generally, in order to make sure nothing is forgotten, we will keep written lists and planners. Checklists in particular are widely used in a number of professions, such as medical and aviary applications, where there are particularly high risk. An example of this is the story of Chesley "Sully" Sullenberger, a pilot who was able to mitigate disaster during a flight when a bird strike resulted in both engines of his plane were disabled. The first officer on board immediately brought out a checklist that had been prepared for such an occasion, and through coordination with Sully they were able to land the plane, saving all the passengers on board [1]. This is an extreme example, but it illustrates well the value of checklists, especially in situations of high stress where we might be prone to forgetfulness and human error.

Checklists are not just valuable within high risk professions, but are also helpful for household tasks such as grocery shopping, as well as a wide range of other tasks we need to accomplish in our day. However, what happens when those lists are forgotten, or when our tasks are quite complex, or when we need to coordinate with others? The application we have created, "Check the List!", is intended to solve these problems caused by human error by providing a place where one can keep track of all that they need to get done, as well as coordinate with others, all by using their smartphone.
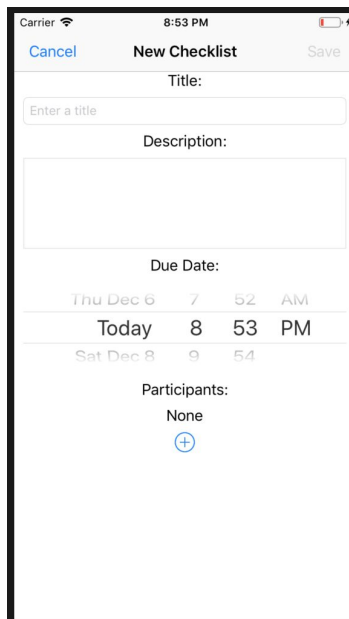
Purpose

The goal of this mobile application is to provide an easy-to-use tool to allow users to create any number of checklists, containing any number of tasks, to help organize themselves and make their lives easier. This application also facilitates coordination between multiple users who are collaborating together, such as for group projects or when planning family trips. When users have lists shared with them, or when updates are made to those lists or the tasks within them, those users will see those changes to help them organize themselves and keep track of the status of what they are trying to accomplish. This application ultimately aims to reduce problems caused by human error, forgetfulness, or miscommunication within a group or team. Users can benefit from this app no matter the size or scale of what they need to accomplish in their idea, and from professional to personal uses.

[1]. Auxier, Eric. "Keep Calm and Fly the Plane: Lessons from US Airways 1549". *Airways*, 19 September 2016, https://airwaysmag.com/capnaux/lessons-from-us-airways-1549/
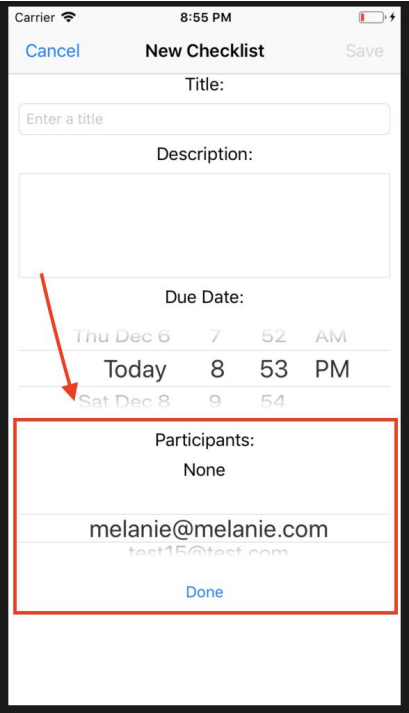
Key Features

Create Checklist/Task

First and foremost, the application allows users to create a checklist. The user must enter a title and due date, and optionally a description or add participants to the checklist, which will be described more in "Share Checklist". Upon hitting submit, the checklist is added to that user's checklist table view, showing an empty box by default beside the entry to show that the checklist has not been completed. A similar process is used for creating a task, with the addition of a status field, which is "Available" by default and cannot be changed on task creation.

Share Checklist

      Whether a checklist has been shared with other users or not is determined by the "Participants" field on checklist creation, or on editing the checklist. When choosing to add a participant, the user is shown a list of all users who have signed up for the app, and may choose up to three users to share the checklist with, and including the checklist creator, up to four users can have access to a checklist. Upon saving those changes, those users that the checklist has been shared with will automatically see that checklist in their table view, and can then edit that checklist. To indicate that there are other users with access to the list, the table view entry will show a humanoid icon.


Assign Task

      Tasks can also have participants, but as all tasks are viewable to all participants in a checklist by default, instead the meaning of participants in a task is to show which users are working on which items. Again, up to three participants can be assigned to a task, and the participants can only be chosen from the list of users who the parent checklist has been shared with. The list table view will also show a humanoid icon to indicate that the task has been picked up by a user.

Edit Checklist/Task

Each checklist or task can be edited following completion, so that aspects such as the title, description, due date, or status (for a task) can be updated. These updates are also displayed in real time, so all participants will see those changes. Editing a checklist is accomplished by hitting the "i" info button on the checklist table view, whereas clicking the tab outside of the "i" will navigate to a view displaying all the tasks within that checklist. The task has no "i" button, and can be edited simply by clicking the tab. These changes are updated in real time for all participants.

Delete Checklist/Task

Any user can delete a checklist or task, regardless of whether it has been completed or not. However, that item has only been deleted for that specific user, and still exists for any other participants that the item has been shared with until they themselves delete it. This is to prevent confusion among users who may wonder why a checklist or task has suddenly disappeared, when it was their teammate that deleted it. The checklists or tasks can be deleted from their respective table views by hitting the "Edit" button and choosing which item to delete using built-in API. These are 3 different ways to delete a task

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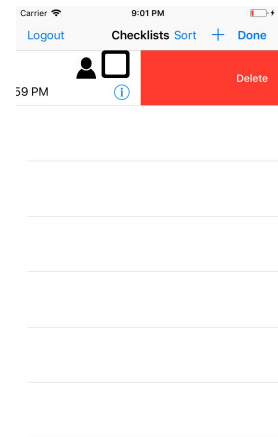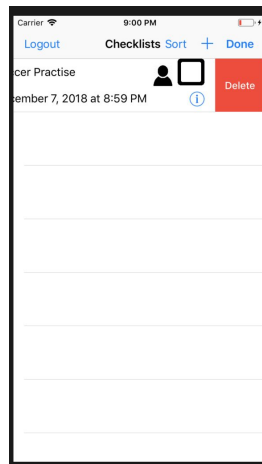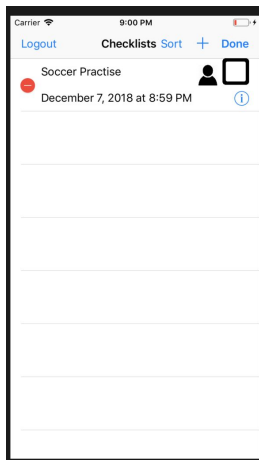
Mark Checklist/Task Completed

        A checklist or task can be marked as completed by clicking on the empty square that symbolizes an unfinished item. The user is then prompted if they are sure of their actions, as marking a checklist or task as completed will prevent any further editing or navigation to a checklist or the tasks within a checklist, and this change will be propagated to all participants. If they confirm, the cell is greyed out, and the image changes to a checkbox that has been checked. From there, an item may be deleted. This is done manually and not programmatically on completion of all tasks within a checklist in case a user wants to add more tasks, which would require reopening a checklist if this is done automatically. The user can then choose to keep the tab around as assurance that they have finished the task, or they may delete it. The screenshots below show what happens when user mark a checklist completed.
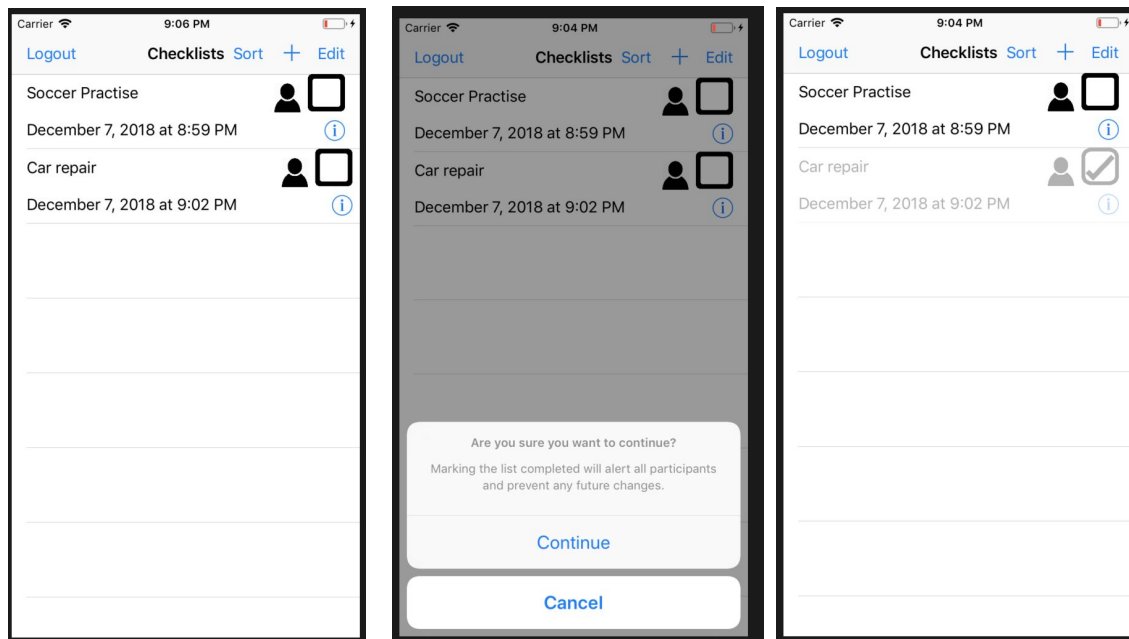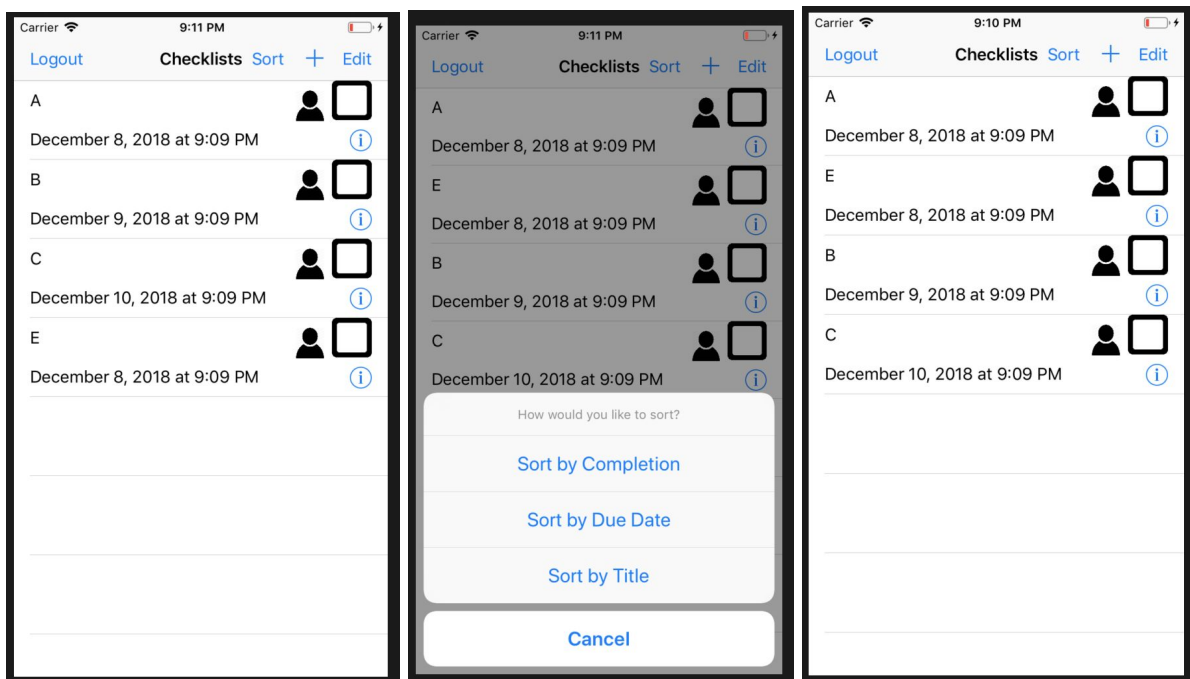
Sort Entries

        The list of checklists or tasks can be sorted based on certain criteria by selecting the "Sort" button on the top of each table view. These criteria are displayed, as "Sort by Completion", "Sort by Due Date", or "Sort by Title". Hitting "Sort by Completion" will group all uncompleted items at the top, and the completed ones at the bottom. Selecting "Sort by Due Date" will sort the items by the emergence of their due date, such that the most recent due dates are grouped at the top, and the oldest at the bottom. Selecting "Sort by Title" will display the items alphabetically by their title ascending from the top.

Before and After -

- Sorting By Title
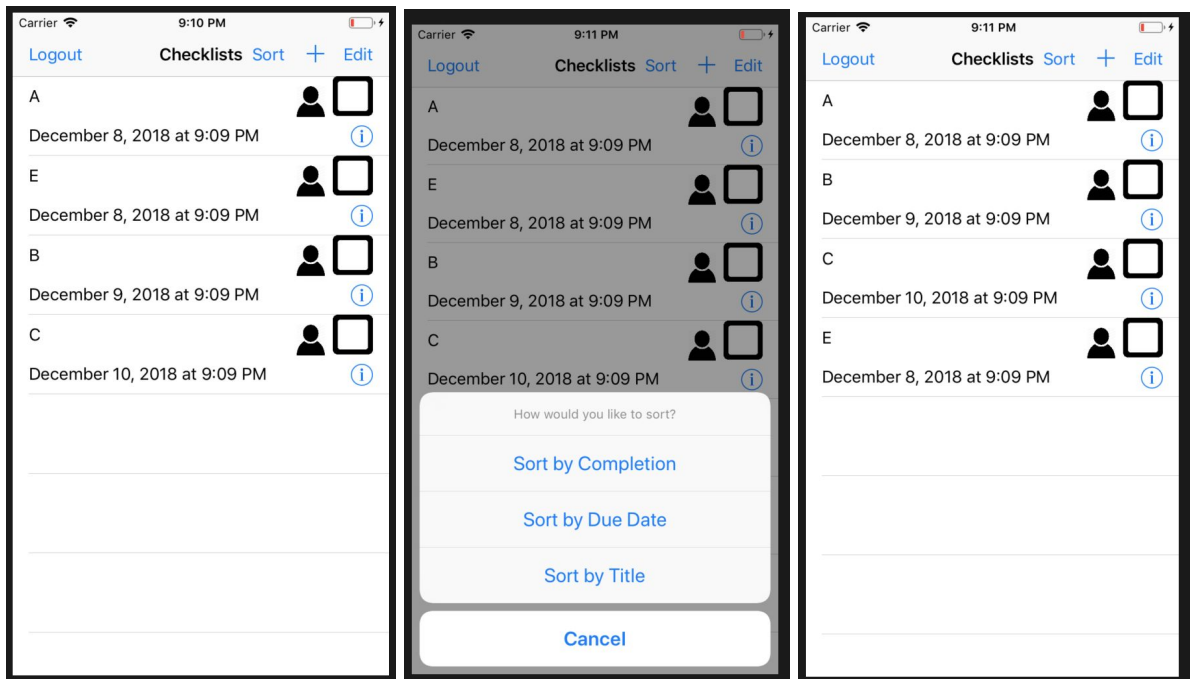
- Sorting by Due date

- Sorting by Completion