

University of Regina

CHECK THE LIST

IOS APP

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CS455

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Group Members

This group project will have two members, Vaibhav Sharma(kv) and Melanie MacDonald. Vaibhav Sharma is in 3rd year and primarily interested in back end engineering and cyber security. Melanie McDonald is in 4th year for a degree in Computer Science with an interest in web and game development.

Motivation

We have been using email for a long time now, but still every once in a while we have a typo in the text or accidentally send an email without the attachment. These mistakes are not due to lack of experience but normal human error. Everyone hates making these mistakes as sometimes it makes you appear as an amateur, but sometimes these errors can have a huge impact and put lives at risk as well. An example of this is when surgeons make errors, i.e forgetting to wash their hands or checking if they have enough blood in reserve before surgery. Beside the advancement in surgeries and number of surgeries performed every year, still 150 000 american patients die every year. Research consistently shows that half of the deaths during surgery are due to avoidable human error and can be avoided if more precaution is used.

The solution to this problem can be found in other high stake professions, and have severely minimised the human error and maintained a reputation working in risky and complex environments like engineering, construction and airplane industry. The aviation industry has a failure rate of 0.0002% despite complexity and high risk in the profession. This failure rate implies that 1 flight out of 50000 an error occurs, and despite how complex the airplane industry is the odds of being killed in a flight are 1 to 29.4 million. Both industries have low risk because they have adapted to consult a checklist at every stage when completing important tasks and making critical decisions to reduce human error that have the potential of critical impact to human lives. The construction industry uses a checklist throughout the building process to ensure work meets building standards. A structural engineer who has built hundreds of structures in his career and is considered a master of his class still refers to a checklist to ensure there were no errors. Despite extensive experience, a veteran pilot still refers to a checklist when something goes wrong as seen in the famous story of Sully, the pilot who was able to avoid tragedy and save the lives of passengers by consulting a checklist.

Checklists provides a cognitive net for everyone from a beginner to an extremely skilled person. It helps catch the mental flaws present in humans to make errors from time to time. When checklists were introduced in hospitals for surgeons and doctors in the operating room, after just three months of following checklist for every operation the complications caused by human error dropped by 36% and deaths dropped by 49%.

The impact of checklist in the industry to reduce human error motivates us to create an app called “Check the List” which will enable users to create day-to-day checklists that can be used by a group of people to ensure high success rate and coordination in their endeavor.

Purpose

Checklists have proven themselves to be very successful in the health, construction, and aviation industries but we may need something to assist us to avoid human error everyday. When working in large team projects or even when planning a vacation, a checklist is periodically consulted in order to make sure nothing is missed or done improperly. Here is a scenario where this app would really benefit the users. Let's consider a family of 6 going on a vacation and one user makes a checklist of all the necessary things they would need on their camping trip. An sample checklist will look something like this

- Campsite gear.
- Tent, poles, stakes.
- Tent footprint (ground cover for under your tent)
- Extra tarp or canopy.
- Sleeping bag for each camper.
- Sleeping pad for each camper.
- Repair kit for pads, mattress, tent, tarp.
- Pillows.

Then the user who created the checklist can add more users which in this case will be other members in the family. Once everyone have the access to the checklist, they can mark the task to “In progress” to let everyone else know that they are working on this. This will help avoid conflicts and the situations where users will do the same task twice. The admin will also have the option to assign tasks to specific users. They can set up a notification for when the list is complete or when the deadline is approaching. Users can see the task in different views consisting of board view and list view.

This app will allow users to solve accuracy and human error issues when working in group or team whether it's corporate professional teams or a family preparing for a camping trip.

Key Features and Functionality

The key features of this apps are to allow users to work with checklists and collaborate with multiple users. This app will allow users to:

- Make a checklist
- Add multiple users to the checklist
- Check off a task
- Synchronize the data between all the different users
- Communicate to other users that they are already working on an item via the display
- Notify all users when checklist is complete
- Notify all users when deadline is approaching
- View the checklist in multiple formats, including a board view and list view
- Assign another user to a task

- Mark a task as being blocked by another task due to a dependency
- Update their status on a task (available, in progress, blocked, completed)
- Add, modify, or delete the items on the checklist after creation

The key features of this app are to allow users to work with checklists and collaborate with multiple users. This app will allow users to create a checklist, and add multiple users to that list who can then start assigning themselves to tasks, or have tasks assigned to them by another user. After the creation of the checklist, tasks can further be added, modified, or deleted at the discretion of the user. Users can signify the completion of their task by checking it off. Additionally, the user can change the status of an item to communicate to all other users what is happening with that task. For example, a task starts out as “Available”, and from there can be marked as “In progress” or “Blocked”, and eventually “Completed” when it is checked off. An item that is “In progress” will display the name of the person who is assigned to it. A “Blocked” item will indicate which task it is being blocked by and the status of the blocking task. To help coordinate this information, all the data of the checklist in terms of tasks, their status, and assignees are synchronized across all users with access to the checklist. Overall, the app will communicate to all users when the checklist is complete, or if the deadline is approaching. For the convenience of the user, the checklist can be viewed in multiple formats, including a board-view and a list-view clearly displaying all items and their status.