

# TeamMotivate Problem Analysis

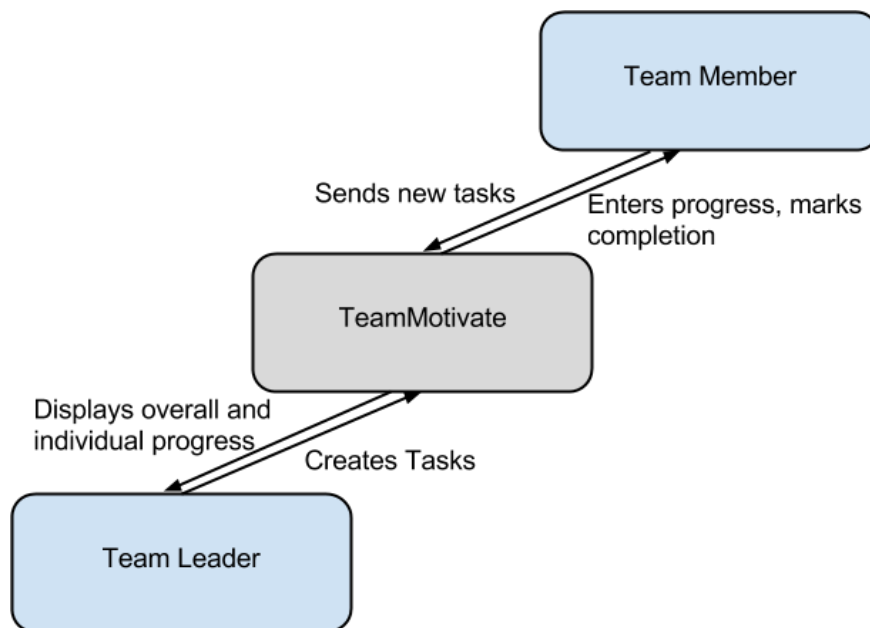
## Motivation

TeamMotivate allows people working in groups to increase their productivity by organizing their tasks online. It serves as a central hub where people can easily assign and retrieve tasks.

The purpose of TeamMotivate is threefold, listed here in order of decreasing priority:

1. Divide up work when working in a team. The app should allow a large amount of work to be split into more manageable pieces, and distributed to individual team members.
2. Schedule deadlines. The app should allow each team member to organize his and his subordinates' time effectively.
3. Track project progress. The app should provide for a way to view a project's progress over time and quickly identify which people have been productive.

## Context Diagram



## Concepts

## Action Item

The action item is something that must be done. It has a deadline, an estimated time to completion, a description, and possibly dependencies. An action item can be created by a team leader, and may be assigned to team members. This concept is supposed to fulfill the purposes of dividing up work and scheduling deadlines.

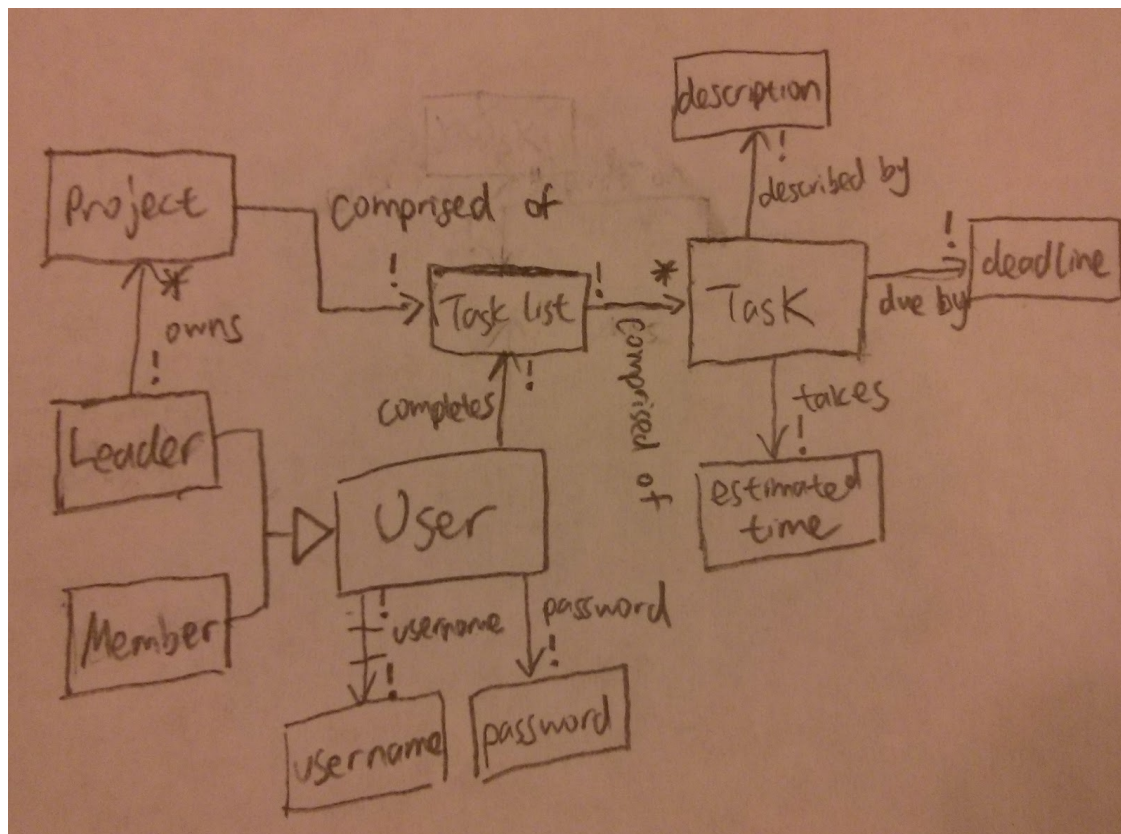
## Task List

The task list shows all the tasks that a team member is assigned. It is the primary way that users stay organized. The task list streamlines the process of dividing up work.

## Progress Gauge

The progress gauge is a bar that ranges from 0 to 100%, showing the progress on an action item. This can be set by team members, and when taken together with an action item's estimated time to completion, can be used to calculate the total progress on the entire project. This fulfills the purpose of tracking project progress.

## Data Model



## Design Challenges

### Owner of Tasks in Data Model

One design challenge was to determine what should own tasks in the database. For example, one possibility is to have tasks owned directly by projects, and have the tasks store which users are assigned to them. It was decided, instead, to let tasks be its own top-level collection, and to have everything that uses tasks store a list of task id's. This was done because many different things depend on tasks, so giving tasks its own collection provides the best protection against performance bottlenecks and explicitly defines its importance.

### Progress Tracking

Many different ways were considered for project progress to be tracked. It's possible to do it qualitatively, by allowing team members to write short progress reports. It's also possible to do it by allowing team members to directly edit the estimated time to completion, but this approach causes the original size of the task to be lost. The final decision, for this implementation of TeamMotivate, was to allow team members to exercise their own judgment and assign a percentage completion rate to tasks. This quantitative approach allows the overall completion to be calculated by aggregating the progress for individual tasks. At the same time, this choice allows for a vivid depiction of task progress.