

# I3302E Project Report

## Disclaimer

The project is by no means even half-complete due many personal circumstances, however the report will talk about the aimed project, achieved progress will be discussed shortly in the last section.

## Introduction

The project “Project Management Application” targets the users who need to manage complex projects with various deadlines, multiple collaborators and tasks with distinguishable contexts.

One of the best approaches to such problems is the one adopted by Trello, a famous project management application, which for education purposes aimed to clone to some extent.

Our application bundles a whole project inside a board, where users can create different categories to host tasks of similar procedure, department, resources, ... users can comment on each task for their collaboration needs.

## Architecture

The application is composed of a backend and frontend application, developed using Laravel/PHP and react/JavaScript respectively, both components communicate through a REST API. Thus, while the project as a whole can be considered to employ the MVC architecture, the Laravel backend is only employing the MC part of the architecture, while the frontend is only employing the VC of the architectures.

## Model

The model is of a simple relational nature that is best expressed using relational schema as below:

```
CREATE TABLE `users` (  
  `id` bigint(20) UNSIGNED NOT NULL,  
  `name` varchar(255) NOT NULL,  
  `email` varchar(255) NOT NULL,  
  `password` varchar(255) NOT NULL,  
  `remember_token` varchar(100) DEFAULT NULL,  
  `created_at` timestamp NULL DEFAULT NULL,  
  `updated_at` timestamp NULL DEFAULT NULL  
)
```

Boards are the objects that represent a whole project.

```
CREATE TABLE `boards` (  
  `id` bigint(20) UNSIGNED NOT NULL,  
  `name` varchar(255) NOT NULL,  
  `background_image_url` varchar(255) NOT NULL DEFAULT '',  
  `user_id` bigint(20) UNSIGNED NOT NULL,  
  `created_at` timestamp NULL DEFAULT NULL,  
  `updated_at` timestamp NULL DEFAULT NULL  
)
```

boards\_users is the table that keeps track of collaborators, where the user that the board is linked to is considered the only administrator.

```
CREATE TABLE `board_users` (  
  `user_id` bigint(20) UNSIGNED NOT NULL,  
  `board_id` bigint(20) UNSIGNED NOT NULL  
)  
  
CREATE TABLE `categories` (  
  `id` bigint(20) UNSIGNED NOT NULL,  
  `board_id` bigint(20) UNSIGNED NOT NULL,  
  `name` varchar(255) NOT NULL,  
  `position` varchar(255) NOT NULL,  
  `created_at` timestamp NULL DEFAULT NULL,  
  `updated_at` timestamp NULL DEFAULT NULL  
)  
  
CREATE TABLE `tasks` (  
  `id` bigint(20) UNSIGNED NOT NULL,  
  `name` varchar(255) NOT NULL,  
  `description` varchar(255) NOT NULL,  
  `due_date` datetime NOT NULL,  
  `category_id` bigint(20) UNSIGNED NOT NULL,  
  `created_at` timestamp NULL DEFAULT NULL,  
  `updated_at` timestamp NULL DEFAULT NULL  
)  
  
CREATE TABLE `comments` (  
  `id` bigint(20) UNSIGNED NOT NULL,  
  `user_id` bigint(20) UNSIGNED NOT NULL,  
  `task_id` bigint(20) UNSIGNED NOT NULL,  
  `content` varchar(255) NOT NULL,  
  `created_at` timestamp NULL DEFAULT NULL,  
  `updated_at` timestamp NULL DEFAULT NULL  
)
```

## Progress

The frontend hasn't been touched or thought about implementation wise, the backend is barely being implemented due to personal circumstances, the implemented aspects are the database schema through Laravel migrations, but they're still missing integrity constraints, useful triggers and procedures, ... thus the model is implemented in its bare minimum, the control is partially implemented for boards specifically the following operations:

1. Create new board
2. Delete board
3. Get categories in board
4. Get collaborators in board
5. Add new collaborator to board]

Other features are still required (at least, remove collaborator, change board name, edit board wallpaper, add new category, remove category).

The implemented features are considered in a partial implementation state since they're aren't protected against garbage user input.