

OneTeam

Software Design Document

μProject



A micro project management tool

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Section A. μ Project Background

Project Overview

Purpose of Application:

To provide capabilities to support a software project using Agile methodology through a basic project management tool.

Major Functionalities:

- Management Component - manages the project's requirements
- Communication Component - allows project team to communicate via real time chat
- Issue Management Component - manages the project's issues or defects

Target Users

The target demographic for this application will be small to medium sized (1 to 8 people) software teams using Agile methodology who need a basic tool to support the process.

Section B. Design Overview

B.1 Description of Problem

To provide project management web application with capabilities to support a software project using Agile methodology through a basic project management tool.

B.2 Technology Used

The application (μ Project) is comprised of three relatively separate components wrapped in a single web application. The elements are described below as three separate projects. The descriptions outline the project team, goal of the project, and address the background, description of activities, and our proposed activities by iteration. We propose to build all three components using Node.js as the foundation for the backend, with MySQL as the database server, and Bootstrap as the front-end framework.

B.3 System Architecture

This project is implemented using Model View Controller architecture. The following describes technologies used for Model View Controller.

- Model View Controller
 - **Model**
 - MySQL DB
 - **View** - templates
 - HandlebarsJS
 - Bootstrap
 - jQuery, Various small libraries
 - **Controller**
 - NodeJS, ExpressJS, SocketIO

B.4 System Operation

The uProject application is deployed on Amazon Web Server on following URL:

<http://uproject.thirdelement.com/>

B.6 Software Application Source Code

The uProject application is an open project and all source code is stored on github. You can find source code on following link:

<https://github.com/CS673Smr16Team1/project>

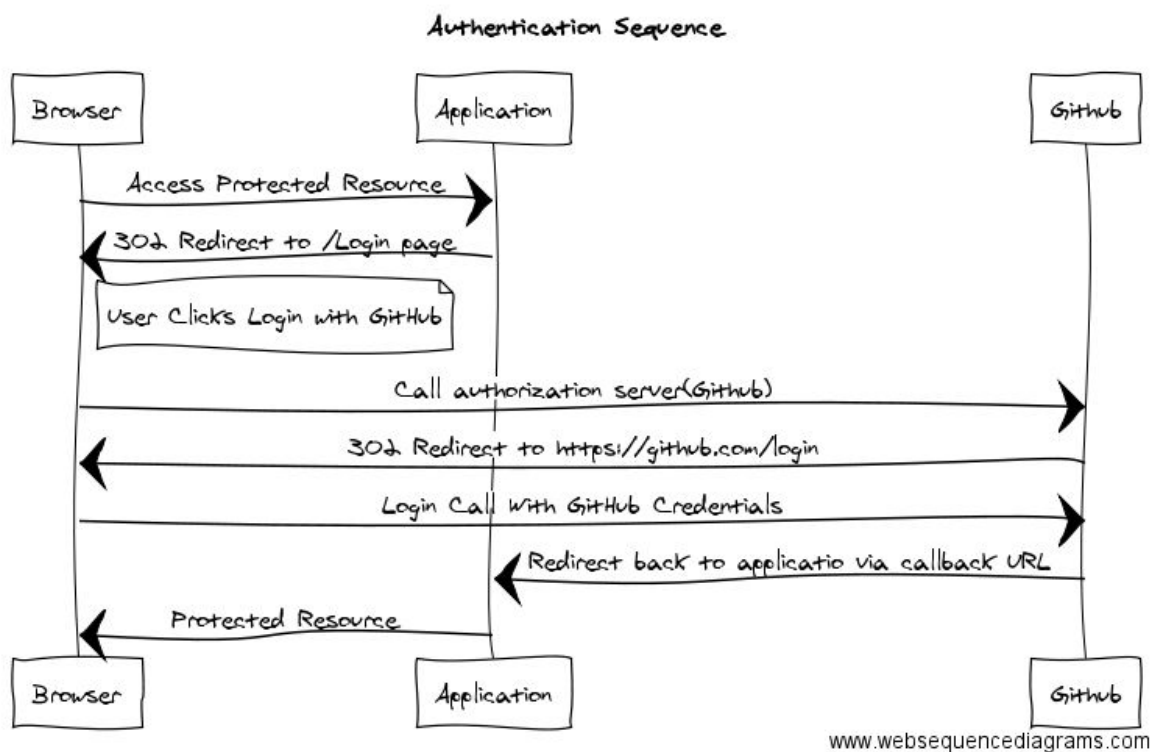
Section C. Functional Design

C.1. µProject Software Design

User Login & Authentication

The authentication is performed using github account. The following diagram illustrate sequence of timing diagram to authenticate users using github account. Since all users have access to github account and can easily obtain github account, this application can safely assume that user can successfully log-in using github account.

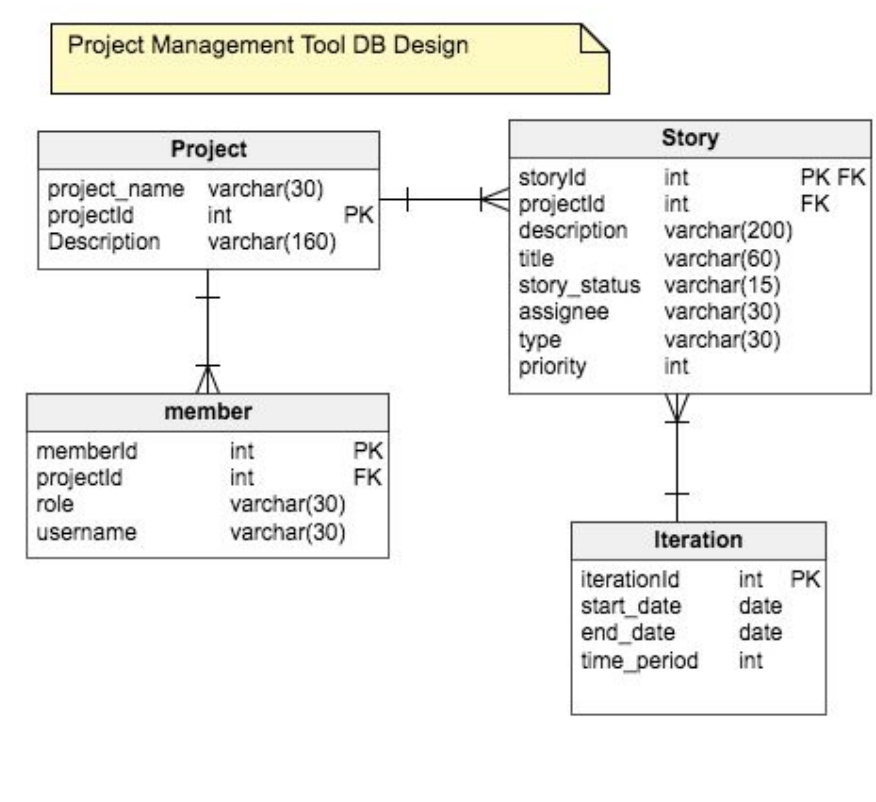
Sequence Diagram: Authentication



C.2. Queued: Project Management Tool Functional Design

Functional Description	To create a project requirements management tool for Agile software development projects which allows user to create a project, stories and manage lifecycle of software development tasks.
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C.2.1. Queued Database Design



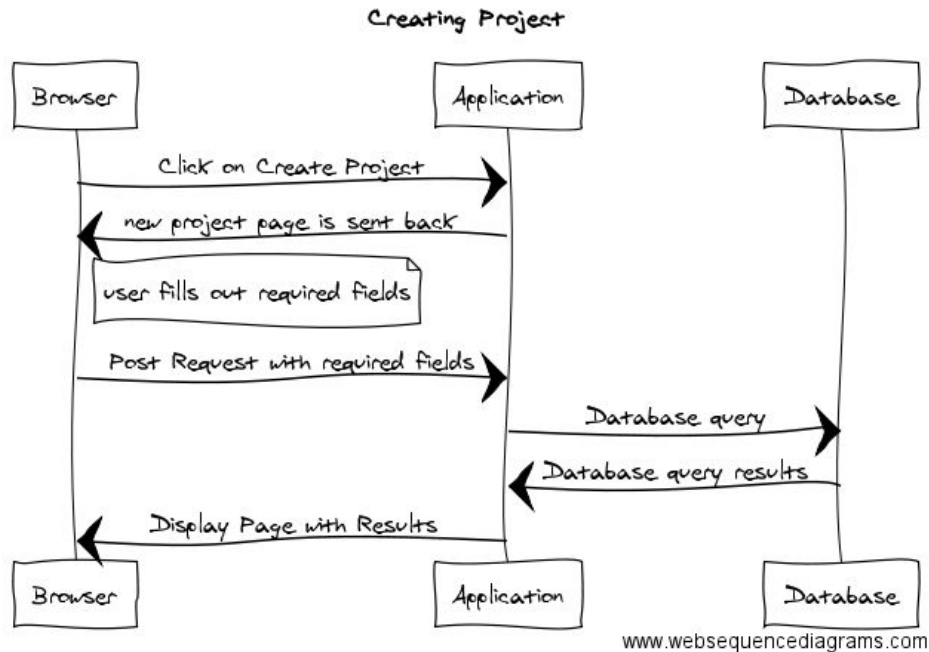
C.2.2. “Must-Haves” Functional Detail Design

Create a user

The authentication is performed using github account.

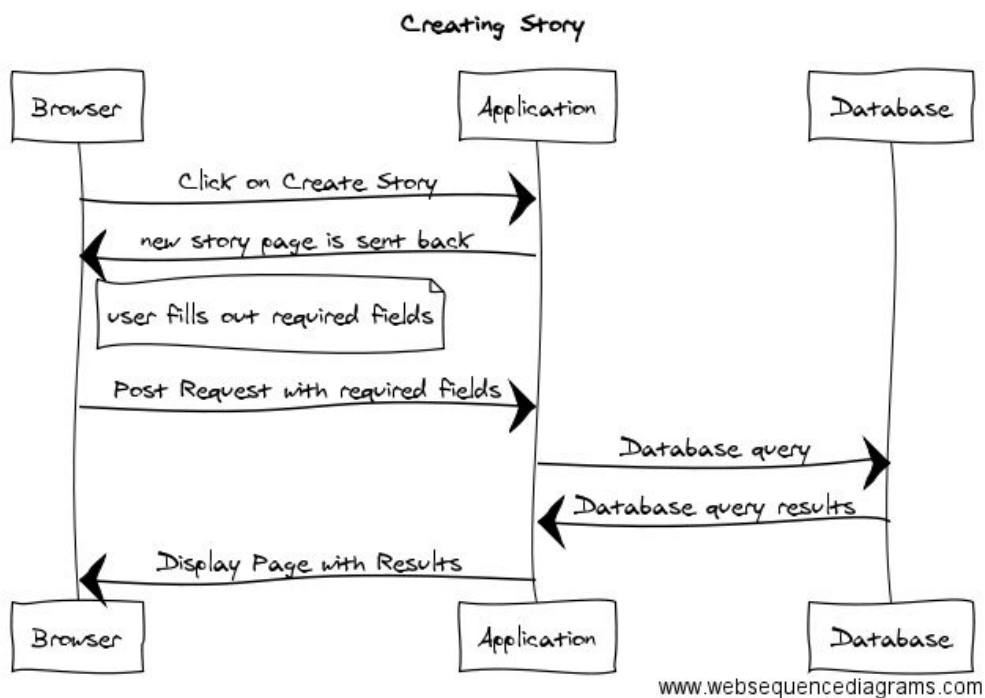
Create a Project: main project with multiple individuals/users

The following is sequence diagram that describe flow of creating a project.



Create, edit, delete Stories: small pieces of work or features

The following is sequence diagram that describe flow of creating a story.



Ability to assign a story to a user for development

Ability to assign and update status of a story throughout development cycle

Backlog of Stories: list of prioritized stories that can be worked on, ability to re-order stories

Current Stories: list of prioritized stories that are currently under development

Completed Stories: list of stories that are completed

C.2.3. “Wants” Functional Detail Design

Assign type of story (feature, bug or release)

C.2.4. “Nice-to-Haves” Functional Detail Design

Create and manage multiple projects: ability to create, edit and delete multiple projects

View of user owned stories

Email reminders for Story deadlines

Archive Projects and Stories

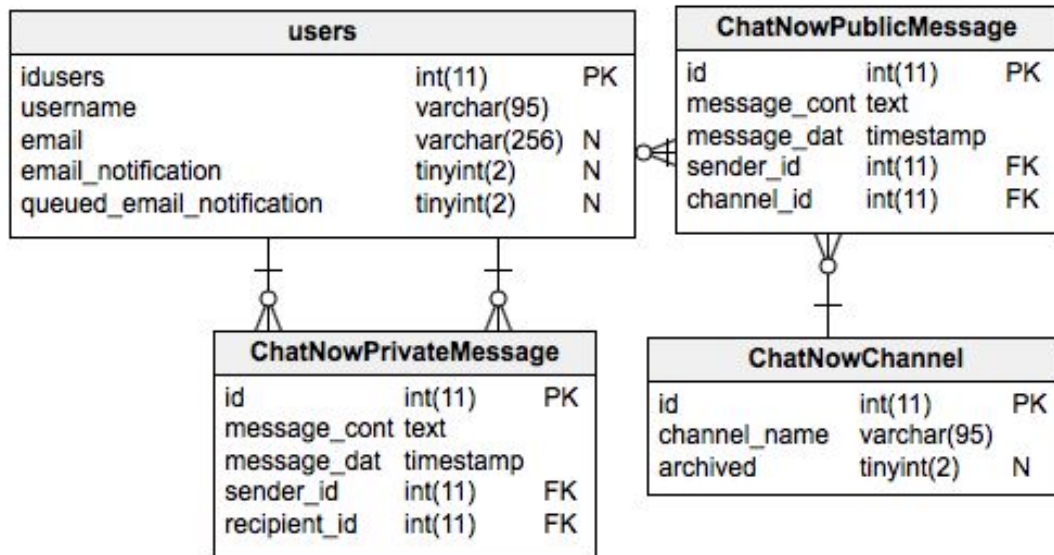
Scroll bar for lists

C.3. ChatNow: Chat System Functional Design

Design Description	An easy-to-use communication environment that allows a team to share ideas in a virtual chat room setting as an alternative to emails.
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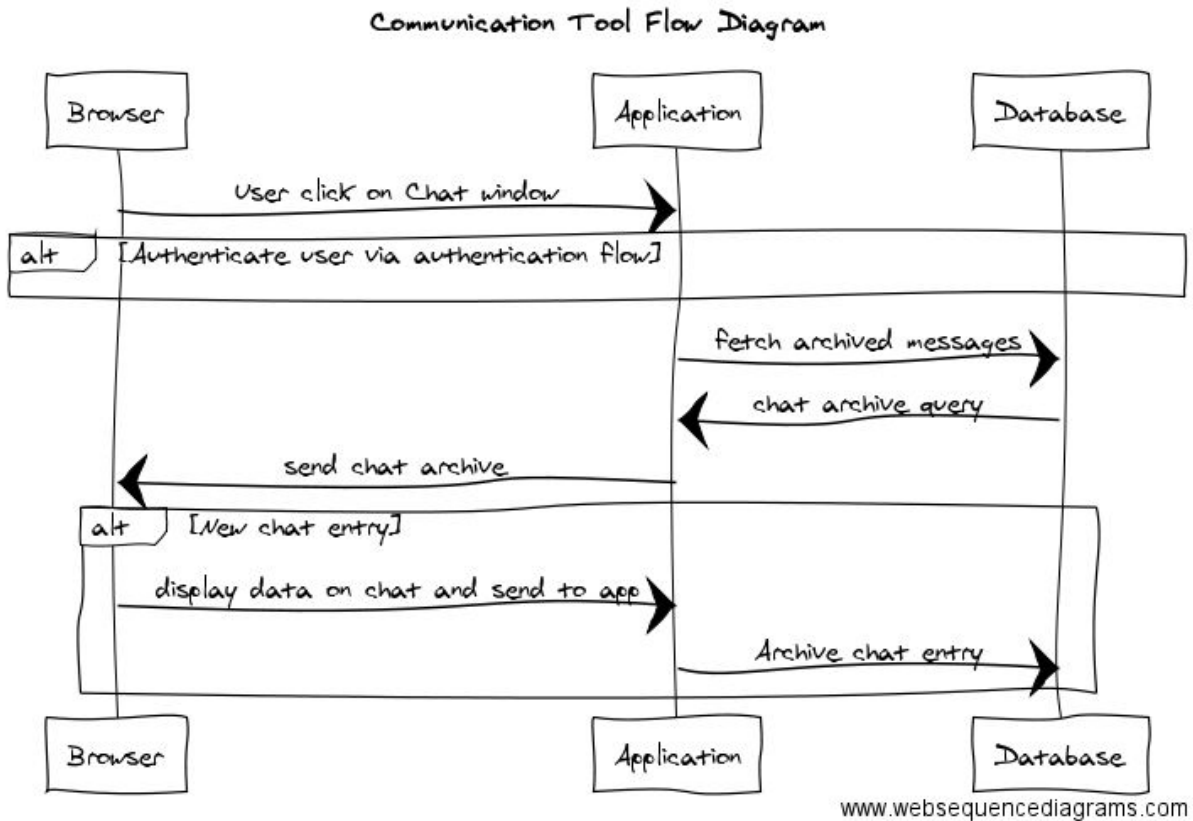
C.3.1. ChatNow Database Design

The following is Database Design for ChatNow application.



C.3.2. "Must-Haves" Functional Detail Design

Create a channel - ability to create a public chat room



Archive chat history - make chat history persistent (not session based, but always visible)

C.3.3. “Wants” Functional Detail Design

Send private messages to other members

Search - ability to search through the chat history for keywords

C.3.4. “Nice-to-Haves” Functional Detail Design

Email Notifications

Archive/unarchive a channel

Online Status of other users

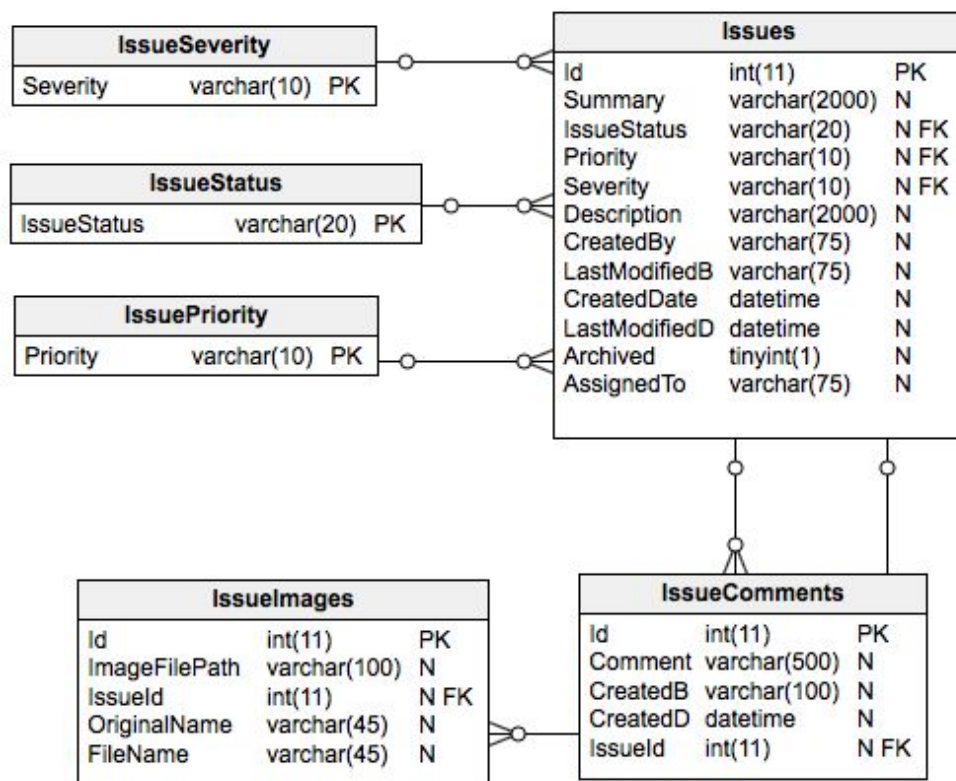
New Private Message Notification

C.4. Bugs: Issue Tracker Functional Design

Functional Description	A basic tracking system to create, assign, update and resolve issues.
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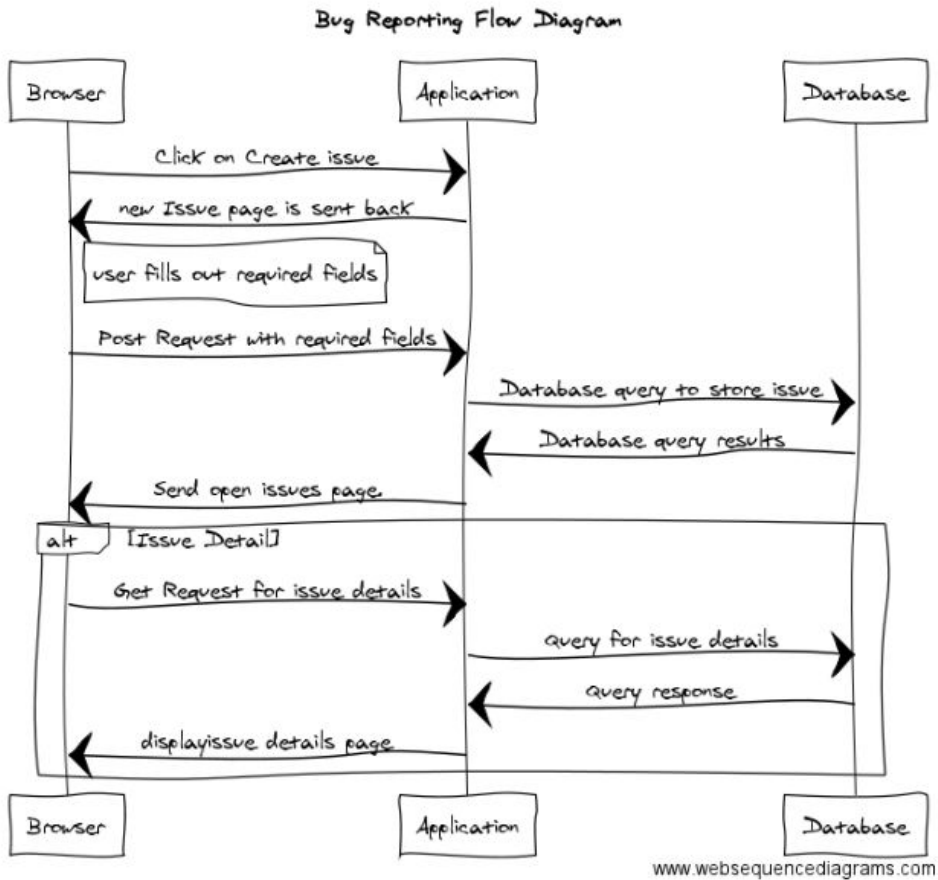
C.4.1. Bugs Database Design

The following is database design for Bugs issue tracking application.



C.4.2. “Must-Haves” Functional Detail Design

Create, edit, update, and delete issues



Set priority, severity and status of issue

Identify who reported issue

C.4.3. "Wants" Functional Detail Design

Comment on issue

Assign issue responsibility to user

Attach screenshots to issue

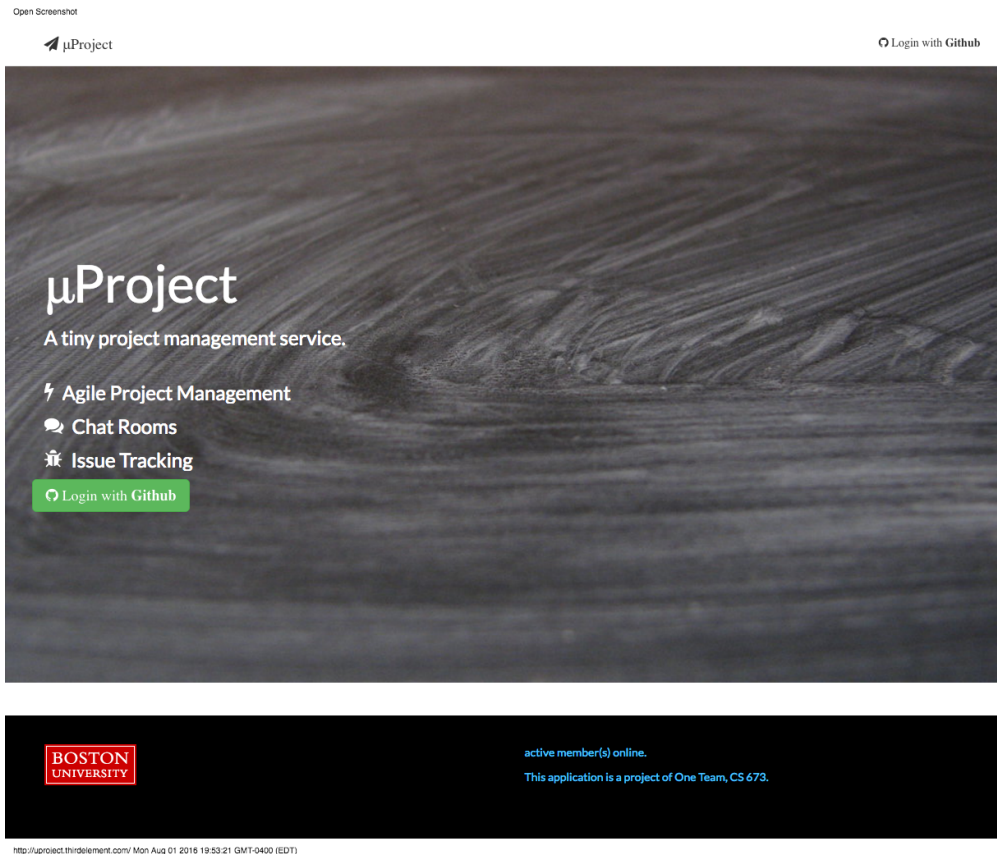
C.4.4. Nice-to-Haves Functional Detail Design

Filtering of Issue List

Section D. User Interface Design

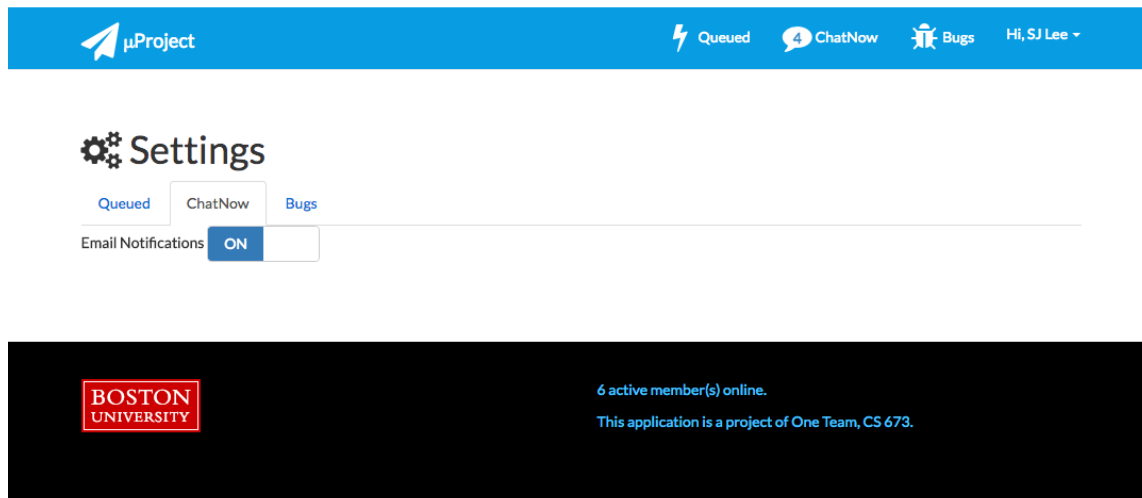
D.1. uProject Home Page UI Design

Project Home Page UI



Project Settings UI

Open Screenshot

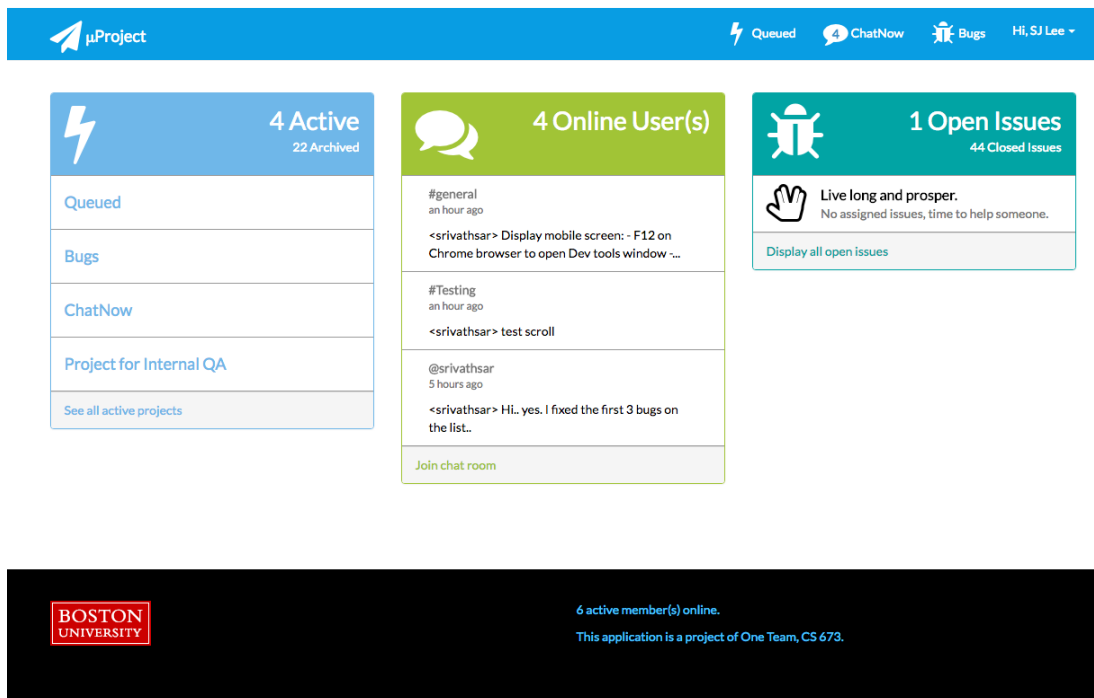


http://uproject.thirdement.com/settings Mon Aug 01 2016 20:12:09 GMT-0400 (EDT)

D.2. Queued UI Design

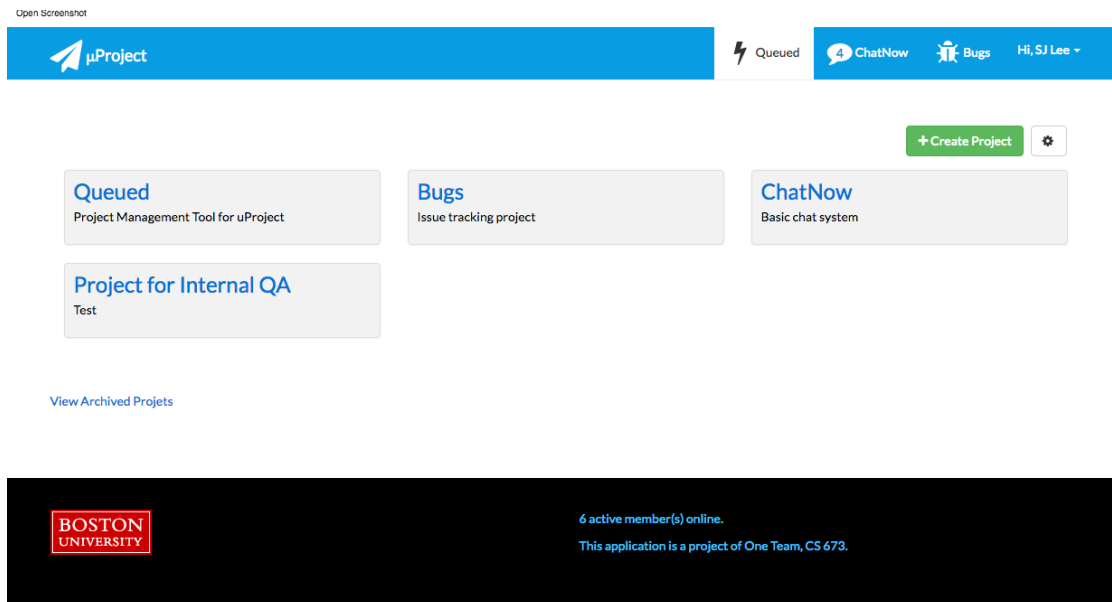
Queued Home Page UI

Open Screenshot



http://uproject.thirdement.com/ Mon Aug 01 2016 19:55:48 GMT-0400 (EDT)



Queued Add Project UI Layout



Queued Create Project UI Layout

Create Project

Project Name

B I H %   </>

Preview

Owner

Describe the Project

Members

☐ chriscarducci

☐ jak464

☐ jaunl

☐ sangDev

☐ srivathsar

☐ rczik

☐ davidblair

☐ cs673smr16

sangDev

Save

Cancel







6 active member(s) online.

This application is a project of One Team, CS 673.

Queued Story View UI Layout

Open Screenshot

  Queued  ChatNow  Bugs Hi, SJ Lee ▾

[Home](#) / [Queued](#) / [Queued](#)

Queued

Project Management Tool for uProject

Backlog

A user shall be able to view Project History

A user shall be able to view progress charts and analytics of a project or projects from Dashboard or Analysis view

Data Validation for Creating project page

A user shall be able to search a story from all stories within a project.

Create Iterations: A user shall be able to define a start and end date of an iteration, where user shall give a timeframe in weeks which contain stories to be completed by team.

Current

Documentation - Requirement Analysis Document and Software Design Document

Shall be able to manage users (create/register, update, delete)

Add Back/cancel Button to story view

A user shall be able to add team members (users) to a project

Add a Story

Done

Start testing with Mocha/Selenium

Add a Story

Release

DB Design - Re-design DB to be able to add users to a project

A user shall be able to view projects and stories they own on the Dashboard - require to pass UI Data for Dashboard

A user shall be able to scroll a Story list that overflows browser size such that user does not have to lose view of menu bar and category titles.


A user shall be able to set a deadline for the story to be development.


A user shall receive an email notification for a story they own which has a due date assigned to it


<http://uproject.thirdelement.com/queued/project/1> Mon Aug 01 2016 19:58:50 GMT-0400 (EDT)


Queued Add Story UI Layout

Open Screenshot



 Queued

 ChatNow




 Bugs

Hi, SJ Lee ▾

Home / Queued / Queued / Add a story

Add a story

Title

B I H   

Q Preview

Describe the story

Priority

Low ▾

Story Type

Feature ▾

Status

Backlog ▾

Assigned to


sangDev ▾

Due Date

08/01/2016

Create Story

Cancel



active member(s) online.

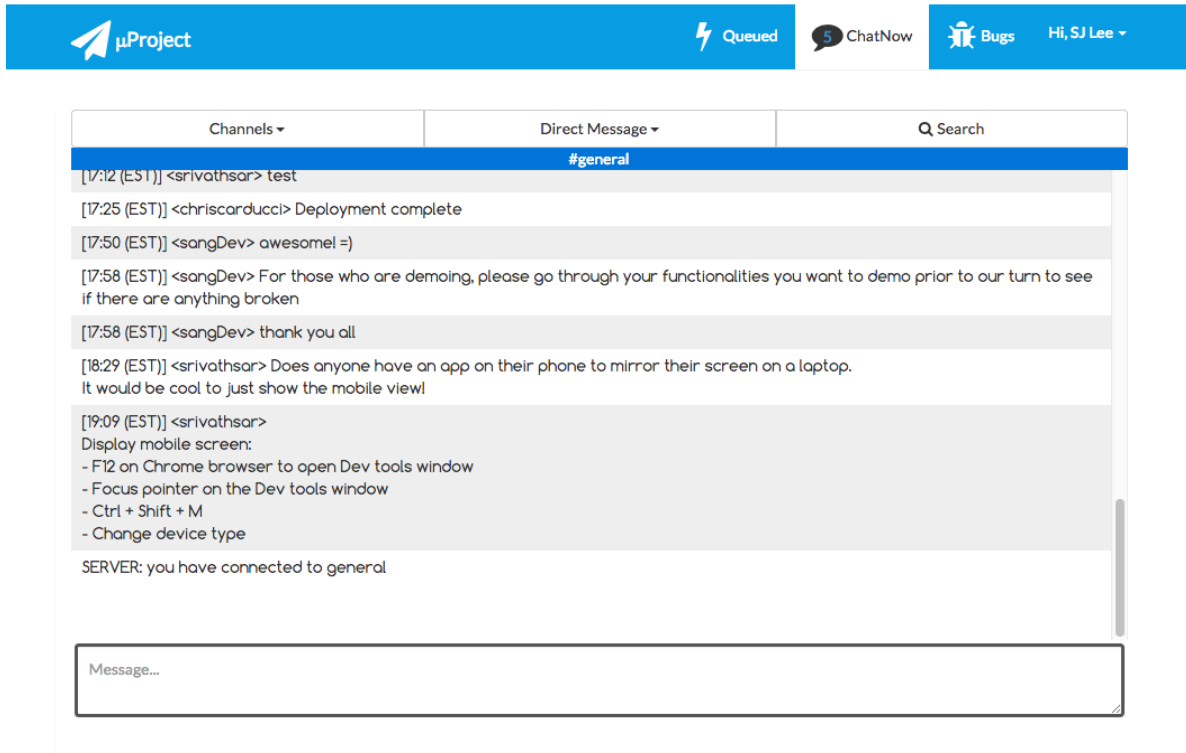
This application is a project of One Team, CS 673.

<http://uproject.thirdelement.com/queued/project/1/story-create/Backlog> Mon Aug 01 2016 19:59:50 GMT-0400 (EDT)

D.3. ChatNow UI Design

ChatNow Integrated UI Layout

Open Screenshot







<http://uproject.thirdement.com/chat-room> Mon Aug 01 2016 20:00:27 GMT-0400 (EDT)



D.4. Bugs UI Design


Bugs Home Page UI Layout

Open Screenshot



 Queued  ChatNow  Bugs Hi, SJ Lee ▾

+ Create Issue				
Title	Priority	Status	Assigned To	Comments
Queued: Dashboard – Personalized Project List #90 updated 2 hours ago	 MEDIUM	OPEN		 1
View closed issues				







5 active member(s) online.
This application is a project of One Team, CS 673.

<http://uproject.thirdelement.com/bugs> Mon Aug 01 2016 20:14:09 GMT-0400 (EDT)

Bugs Create Issue UI Layout




Open Screenshot




 Queued  ChatNow  Bugs Hi, SJ Lee ▾

Create Issue

Title

B I H   

 Preview

Describe the issue

Assigned To

Unassigned ▾

Priority

Medium ▾

Severity


Moderate ▾

[Create new issue](#)

<http://uproject.thirdelement.com/bugs/create> Mon Aug 01 2016 20:02:53 GMT-0400 (EDT)

Bugs Detail View UI Layout

Open Screenshot

QueuedChatNowBugsHi, SJ Lee ▾

[Home](#) / [Bugs](#) / #90 Detail view

Edit

Queued: Dashboard – Personalized Project List

#90 updated by jak464 2 hours ago, created by srivathsar 5 hours ago.

Dashboard shows only the projects you are involved (a member of). This list is populated based on whether or not you were added as a member during project creation.

- If you are added as a member later on (via edit project), the project doesn't list on the dash.
- If you are removed as a member, the project doesn't disappear from the dash.

Comment: by SJ >> OPEN. This is a some what minor (Moderate) issue that requires major effort - queued/saveProjectAfterEdit.js This script needs to update the members table in DB. Requires to delete members from DB table if removed from list.

Requires to add members from DB table if added to list. Must have memory - be able to compare new and old list.

Priority
MEDIUM

Status
OPEN

Severity
MODERATE

Assigned To

Add Image

Choose image

Choose File No file chosen


Upload

Comments

srivathsar updated 5 hours ago

SJ >> OPEN. This is a some what minor (Moderate) issue that requires major effort - queued/saveProjectAfterEdit.js This script needs to update the members table in DB. Requires to delete members from DB table if removed from list. Requires to add members from DB table if added to list. Must have memory - be able to compare new and old list.

Add Comment



active member(s) online.


This application is a project of One Team, CS 673.

<http://uproject.thirdelement.com/bugs/issue/90> Mon Aug 01 2016 20:03:39 GMT-0400 (EDT)

22

Bugs Archive View UI Layout

Open Screenshot

<div> Queued 4 ChatNow Bugs Hi, SJ Lee</div>				
<div><div>View Open Issues</div><div>+ Create Issue</div></div>				
Title	Priority	Status	Assigned To	Comments
Bugs Assignee Missing Archived #59 updated an hour ago	LOW	REJECTED	davidblair	2
Big Issue #97 updated 2 hours ago	MEDIUM	CLOSED	jak464	1
test Archived #96 updated 3 hours ago	MEDIUM	NEW		
Bugs: Archived issues still contribute the count of Issues... #93 updated 3 hours ago	MEDIUM	CLOSED	sangDev	1
Bugs: An Issue can be created with blank (no characters)... #94 updated 3 hours ago	MEDIUM	CLOSED	sangDev	1
Queued: Can't Archive a Story #83 updated 3 hours ago	MEDIUM	CLOSED	srivathsar	
Queued: Unarchiving Project redirects to 404 #84 updated 3 hours ago	MEDIUM	CLOSED	srivathsar	

http://uproject.thirdelement.com/bugs/closed Mon Aug 01 2016 20:16:35 GMT-0400 (EDT)

Section E. References

- Node.js : <https://nodejs.org/en/>
- Express.js: <https://expressjs.com/>
- Mocha: <https://mochajs.org/>
- Chai: <http://chaijs.com/>
- Selenium: <http://www.seleniumhq.org/>
- WebStrom: <https://www.jetbrains.com/webstorm/>