
Assignment 1

Building IT Systems (CPT 111 / COSC 2635)
Study Period 2, 2016

Mumble

By

Left4Dead

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1. What

1.1. Project Name

Our project name is Mumble.

1.2. Project Description

Our project is a web based chat program, that allows online text based chat between users of a web service/community, allowing conversations between broad communities in channels or between select users in private one on one or group chats. In addition, features are provided for easy visual distinction of questions and responses in the application as well as sharing links and photographs and organising groups.

The goal is to produce a chat client that bridges the gap between traditional chat applications and more static media such as message boards, facebook walls and reddit posts, allowing more interaction and distinction of individual posts.

1.3. The Team

Daniel Del Borrello

Student Email Address : s3573667@student.rmit.edu.au

Your Locale : Perth, Australia

Background & Passion in IT :

My background is library and information services and worked in the public school educator sector for several years maintaining library databases, the collection and video editing for ClickView 24/7. My IT experience is help desk operating and network support in a private and school environment.

What are you good at / What you're interested in?

I am good at writing documentation and interested in all aspects of Information Technology (Hardware and Software tech support and Customer Service).

What are your weak-point in the context of the project?

My weakness in this project is probably the lack of programming skills, to rectify that I need to extra video tutorials in learning some basic programming language.

What role do you see yourself mainly playing in the team?

I can see myself doing extra learning in PHP/CSS and HTML language in order to ensure I can contribute to the project effectively and also help out with the documentation and design aspects of the chat with other team members.

Morgan A. Grice

Student Email Address : s3475659@student.rmit.edu.au

Your Locale : Beijing, China

Background & Passion in IT :

I've always had a passion for anything IT related from an early age and throughout my working life I have been in the role as IT support alongside my actual job title and duties. I work in finance and one day hope to develop finance related software that I feel is missing in the current environment.

What are you good at / What you're interested in?

I am good at UX and graphical elements and have a strong interest in the underlying programming aspects and wish to advance my knowledge in this area.

What are your weak-point in the context of the project?

My basic programming knowledge and experience will initially make it difficult for me to be of great use in that regard however through self education and mentoring I hope to turn this weakness into one of my strengths for the future.

What role do you see yourself mainly playing in the team?

I can see myself being involved mostly in the UX / Graphic side of the project with additional support with the HTML/CSS coding elements and documentation that the project will require. I will also utilise my problem solving abilities to mediate when necessary within the group.

Geoffrey James Grundy

Student Email Address : s3444234@student.rmit.edu.au

Your Locale : Melbourne, Australia

Background & Passion in IT :

My passion in IT is programming applications that provide a complete user experience. I aim to provide easy to use functionality that rewards user's investment in an app, rather than discouraging use through clunky front ends, and poorly thought through restrictions.

My background is in C# and Java application development. I'm looking to get into PHP and web back end development, including building a

comprehensive application with an AJAX interface and a portable self installing footprint.

What are you good at / What you're interested in?

I'm interested in building responsive and flexible frameworks, that have long service lifetimes and are easily installed, interacted with and maintained. I'm good at taking a holistic approach to programming and building applications or sections of applications with an eye to interaction with other elements.

What are your weak-point in the context of the project?

My weaknesses are coordinating with a team to build large applications, and procrastinating around large projects. I'm aiming to use a strict schedule to keep me checked in to the project to ensure I keep meeting deliverables. In addition, I'd like to concentrate on strengthening my grasp of unit testing and ensuring that I significantly incorporate that into my development process.

What role do you see yourself mainly playing in the team?

I see myself building the backend framework of the application and coordinating with my team members regarding connecting and integrating it to the front-end.

Jonathan Philipos

Student Email Address : s3588093@student.rmit.edu.au

Your Locale : Sydney, Australia

Background & Passion in IT :

Cloud Computing industry, Remotely managing servers.

What are you good at / What you're interested in?

I have developed good skills in working with Virtualization based technologies in order to serve applications. This includes scaling such applications and securing their uptime. I have also developed my skill set in the development of front-end which includes Designing the UI, Enhancing UX, and developing the UI with HTML/CSS/JS.

What are your weak-point in the context of the project?

Not always available and am quick to disagree with some other members on various topics.

What role do you see yourself mainly playing in the team?

I see myself extending the applications User Experience through new features and implementations, also designing and developing the User Interface.

1.4. Demonstrable Outcomes

1.4.1. Minimum Viable Product

1.4.1.1. Functional Chat Application

An application that provides near-instantaneous text based communication between two users using browsers in different locations.

Validation Test: Conducting a chat between 2 remote users.

1.4.1.2. Member Chat Notifications

This feature will let the chat users know who is leaving the chat and entering the chat. This particular notification can be disabled or enabled as per request.

Validation Test: Having a user enter and leave the chat while another user is in the channel.

1.4.1.3. Asynchronous Updating

The chat application should update continuously and independently of user interaction, and correctly order replies and comments made by users.

Validation Test : Testing with 2 users to ensure that chat updates without user input

1.4.1.4. Avatar Selection

Allow the chat members to select an avatar to represent themselves in the chat. Pictures will be selectable from a set group of images that conform to the site's style guide.

Validation Test : Test selection and display of avatars

1.4.1.5. Login and register for members

Allows users to login and register for an account, providing security for the user and allowing them to post in the chat.

Validation Test : Ensuring that registration, login and actions during your session work correctly as the user you've logged in as.

1.4.1.6. Private messaging

Allows users to message in a private channel with 1 or more other users.

Validation Test : Ensuring that messaging works and that private channels are joinable, and that they are not displayed to other users.

- 1.4.1.7. **Embedding images**
Allows users to embed images from an external web page in the site and visually scales them to fit in the chat application.
Validation Test : Ensuring that embedding images works and is displayable on a variety of platforms.

1.4.2. Extended Features

- 1.4.2.1. **Tagging and Notification of Users**
Tagging of users in chats will provide them with a notification that they are being mentioned in a specific channel or chat, and allow them to see the post and if desired join that channel. Tagged messages will be easily identifiable by the tagged user.
Users should not be able to be tagged in a private chat they are not a part of.
Validation Test : Test with multiple users tagging in channels and private chats and checking ability to view, access and respond to the notifications.
- 1.4.2.2. **Archiving Of Chats**
A feature that will automatically archive messages potentially increasing performance and providing an archive of past messages. Users can retrieve previous messages by date.
Validation Test : As a user, post messages over a period of time and test archival and retrieval.
- 1.4.2.3. **Searching Archives**
Chat users are able to search previous archives of chats they were involved in by text, date and members and view the contents.
Validation Test : Testing of the archiving feature and then retrieval through various methods including; text, date and user filters.
- 1.4.2.4. **Parse Messages for Questions**
This feature will allow any questions among the messages to be marked in a visually distinct manner so that they can easily be found by the chat members for faster reply.
Validation Test: Test typing questions with different formatting to ensure that questions are being parsed correctly.
- 1.4.2.5. **Allow reply to messages**
This feature will allow users to reply to a previous chat message and will provide a view of the original

message in the reply, allowing simple visual parsing of questions and replies.

Validation Test : Testing to check that questions and previous messages can be replied to and that the message that has been replied to is visible/accessible.

1.5. Project Motivation

As a group we were interested in addressing the fact that chat applications haven't really progressed as a medium since the MSN era in terms of usability and readability in the way that message boards, walls, forums and reddit have.

We're interested in bringing some of the developments of other areas into the chat space, to bring more functionality to a system that continues to be relevant 2 decades after its conception.

1.6. Project Justification

1.6.1. Justified Workload

The workload for this project will exceed 120 hours of work for our group of 3. Projected hourly breakdown as follows:

- 10 hours - Initial Wireframing and UX design
- 10 hours - Construction and implementation of an SQLite database engine with corresponding portable installer in PHP
- 5 hours - Database structure design and implementation
- 6 hours - Partial PHP template pages for use via AJAX fetch
- 5 hours - HTML structural design and layout
- 8 hours - Construction and research on design language and style guide
- 8 hours - PHP Json format output for AJAX requests
- 8 hours - Implementation of asynchronous updating using a javascript timer and fetch from PHP
- 8 hours - Implementation of rough CSS mockup providing basic page structure
- 8 hours - Implementation of responsive CSS layout
- 4 hours - Testing and review of usability and visual design of UX
- 4 hours - Designing interface interaction on desktop and mobile
- 6 hours - Implementing Javascript and CSS for interaction via touch devices
- 6 hours - Implementation and refinement of UX and CSS following testing and review

- 10 hours - Implementation of CSS colours, fonts and visual cues
- 8 hours - Construction of images and icons used in UX and layout thereof
- 15 hours - Testing of core capabilities and bug fixing
- 15 hours - Testing of extended features and bug fixing
- 15 hours - Implementation of basic PHP chat engine
- 8 hours - Implementation of archiving in PHP
- 10 hours - Implementation of the rest of basic features
- 15 hours - Implementation of extended features
- 6 hours -Namespacing, commenting and tidying of Javascript to ensure no collisions with existing libraries
- 10 hours - Testing responsive design of UX and implementing changes and fixes

1.6.2. Beyond Current Capabilities

The group decided that we all should try and work within our means but also extend ourselves into areas that we haven't done before.

Dan has no existing programming skills and therefore will take up some extra tutorials in PHP using Netbeans to look at the coding language and to familiarize himself with the environment. In addition he will look at helping in the design and implementation of the CSS.

Morgan is looking to extend his knowledge of frontend and UX design by designing and building a responsive application and by designing a dynamic ajax application with a high level of inserted and modal elements.

Geoff will be extending his knowledge of PHP and server side development by working on building a portable, self installing application with APIs for AJAX interaction and developing and organising a large PHP project in a concise object-oriented manner.

1.7. Project Risks

1.7.1. Timezones

We are all in different timezones and are finding sometimes it can be a challenge to meet at a certain time due to the two hour time difference. In order to combat this issue, we needed to vote on times that allow all group members to meet, taking into account prior commitments and timezones.

1.7.2. Small Group

We are in a small group due to members dropping out and will thus have to be more accountable to each other and to deadlines as they approach. Moving forward we're ensuring that we plan clearly for the weeks and months ahead and are scheduling multiple weekly meetings to make up for the shortfall in manpower.

1.7.3. Limited Programming Experience

One of our group members has no programming experience, however, in order to combat this it was decided that this member would do some extra learning to get up to speed and would also contribute more on non-programming related tasks.

Potential risks are that more work and responsibility will be left to the other 2 group members but we are mitigating this by increasing communication and getting started early on creating and planning the project.

2. How

2.1. Resources & Tools

- 2.1.1. Netbean, PHP Tutorials, Php.net, Web server hosted in DigitalOcean, w3schools.com, Trello, Mozilla Developer Network (developer.mozilla.org), Chrome, Excel, GitHub

2.2. Collaborative Workspaces

Our collaborative workspaces include Trello, Skype, GitHub, Dropbox, Google Drive and email.

2.3. Communication Expectations

Correspondence with team members is a requirement. Our general chats and booked meetings will be done through Skype and if required can be relayed by email. If a team member has any issues in regards to their task or attending group meeting sessions they must let other team members know via email and/or skype so action can be taken to ensure that goals are met and that issues are addressed.

In general we will have 1 weekly group meeting scheduled in addition to meetings that correspond to deadlines and specific goals. Meetings will be documented through minutes that are posted on Trello at the end of each meeting, allowing members to catch up and review discussion points.

We also require that team members; keep in contact through Trello with their tasks, keep us up to date through skype, attend meetings as required and if cannot make the meeting, let other team members know in advance.

2.4. Decision Making Processes

- 2.4.1. The decision making progress will involve the following:
 - 2.4.1.1. A team member may suggest ideas that will benefit the team and the project.
 - 2.4.1.2. A discussion will be formed with all the group members. All group members can disagree or agree with the points of the discussion.
 - 2.4.1.3. Then a vote will be made. Based on the number of votes the decision is made.

3. When

Task Number	1	Start & End by	20/6 - onwards
Title	Proposal Final Documentation Completion / Extra Netbeans HTML5/CSS Tutorials		
Outcome	To obtain basic knowledge of the languages used in the project and to ensure Proposal documentation is ready for submission.		
Lead by	Dan	Trello Card URL	https://trello.com/c/oogcHcae

Task Number	2	Start & End by	24/6 - 30/6
Title	Initial Wireframing and UX design		
Outcome	To develop a structural view of how the application will look and operate		
Lead by	Jonathan / Morgan	Trello Card URL	https://trello.com/c/cCfdTZ3f

Task Number	3	Start & End by	24/6 - 30/6
Title	Construction and implementation of an SQLite database engine with corresponding portable installer in PHP		
Outcome	Base for the rest of the backend development and data storage		
Lead by	Geoff	Trello Card URL	https://trello.com/c/6QBxpeaa

Task Number	4	Start & End by	30/6 - 4/7
Title	HTML structural design and layout		

Outcome	The basic UX framework will be implemented in HTML		
Lead by	Jonathan / Morgan	Trello Card URL	https://trello.com/c/7HtHWnLQ

Task Number	5	Start & End by	30/6 - 4/7
Title	Database structure design and implementation		
Outcome	The design of the tables and relationships in the schema		
Lead by	Geoff	Trello Card URL	https://trello.com/c/hFAZcXPY

Task Number	6	Start & End by	30/6 - 4/7
Title	Construction and research on design language and style guide		
Outcome	An understanding of the direction we'll go in design		
Lead by	Dan	Trello Card URL	https://trello.com/c/iRaEnlcN

Task Number	7	Start & End by	5/7 - 11/7
Title	Partial PHP template pages for use via AJAX fetch		
Outcome	Templates used for the different sections of the application including the chat UI and the various settings sections		
Lead by	Geoff/Morgan	Trello Card URL	https://trello.com/c/3QsjmWOM

Task Number	8	Start & End by	5/7 - 11/7
Title	Designing interface interaction on desktop and mobile		
Outcome	An understanding of the requirements we need for user interaction		

Lead by	Morgan / Jonathan	Trello Card URL	https://trello.com/c/gsiVY960
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Task Number	9	Start & End by	10/7 - 17/7
Title	PHP Json format output for AJAX requests		
Outcome	The PHP data and API for the Javascript AJAX queried to interact with		
Lead by	Geoff	Trello Card URL	https://trello.com/c/NJwl5qM8

Task Number	10	Start & End by	10/7 - 17/7
Title	Implementation of rough CSS mockup providing basic page structure		
Outcome	A useable but unfinished desktop UI		
Lead by	Dan / Jonathan	Trello Card URL	https://trello.com/c/OucB2L1H

Task Number	11	Start & End by	17/7 - 24/7
Title	Implementation of basic PHP chat engine		
Outcome	The very basic, backend fundamentals for the chat system		
Lead by	Geoff	Trello Card URL	https://trello.com/c/SICwZzCf

Task Number	12	Start & End by	17/7 - 24/7
Title	Construction of images and icons used in UX and layout thereof		
Outcome	The images and assets needed for the project will have been created		

Lead by	Dan / Morgan / Jonathan	Trello Card URL	https://trello.com/c/g8bi4nng
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Task Number	13	Start & End by	17/7 - 24/7
Title	Implementation of asynchronous updating using a javascript timer and fetch from PHP		
Outcome	Asynchronous chat system implemented		
Lead by	Geoff / Jonathan	Trello Card URL	https://trello.com/c/Sj3biOYq

Task Number	14	Start & End by	17/7 - 24/7
Title	Implementation of CSS colours, fonts and visual cues		
Outcome	The style guide will have been implemented for the chat		
Lead by	Dan	Trello Card URL	https://trello.com/c/kFXWHUv0

Task Number	15	Start & End by	17/7 - 30/7
Title	Implementing Front-end from HTML to .TPL format		
Outcome	A Front-End that connects with the back-end for things such as Variables and Actions (buttons)		
Lead by	Geoff/Jonathan	Trello Card URL	https://trello.com/c/lmS4eXm7/

Task Number	16	Start & End by	24/7 - 30/7
Title	Implementation of the rest of basic features (Backend)		
Outcome	The basic feature set will be complete		
Lead by	Geoff	Trello Card URL	https://trello.com/c/JV1diT2p

Task Number	17	Start & End by	24/7 - 30/7
Title	Testing and review of usability and visual design of UX		
Outcome	An understanding of the existing problems with the UX implementation		
Lead by	Morgan/Dan/Jonathan	Trello Card URL	https://trello.com/c/PyM2OmmS

Task Number	18	Start & End by	24/7 - 30/7
Title	Testing of core capabilities and bug fixing		
Outcome	Core capabilities will be implemented, tested and bug free		
Lead by	Geoff/Dan/Morgan	Trello Card URL	https://trello.com/c/af7p82WM

Task Number	19	Start & End by	24/7 - 30/7
Title	Implementation and refinement of UX and CSS following testing and review		
Outcome	UX and CSS implementation will be easy to user and correspond to our wireframe and UX design goals		
Lead by	Morgan/Dan/Jonathan	Trello Card URL	https://trello.com/c/oRfjpQOW

Task Number	20	Start & End by	30/7 - 3/8
Title	Implementation of archiving in PHP		
Outcome	The archiving of chat and retrieval of archives will be implemented		
Lead by	Geoff	Trello Card URL	https://trello.com/c/0hQp3rke

Task Number	21	Start & End by	30/7 - 3/8
Title	Implementation of responsive CSS layout		
Outcome	The layout will render and display correctly on touch and mobile devices		
Lead by	Dan/Jonathan	Trello Card URL	https://trello.com/c/201yA8uB

Task Number	22	Start & End by	1/8 - 8/8
Title	Implementation of extended features (Backend)		
Outcome	The extended features will be completed and implemented		
Lead by	Geoff	Trello Card URL	https://trello.com/c/rnc5ZtbP

Task Number	23	Start & End by	1/8 - 8/8
Title	Implementing Javascript and CSS for interaction via touch devices		
Outcome	The interface should be usable by touch and mobile devices		
Lead by	Morgan / Jonathan	Trello Card URL	https://trello.com/c/luBKvjaB

Task Number	24	Start & End by	1/8 - 8/8
Title	Testing of extended features and bug fixing		
Outcome	The extended feature set will be implemented, bug free and functional		
Lead by	Geoff/Morgan/Dan/Jonathan	Trello Card URL	https://trello.com/c/6HP1OFrK

Task	25	Start & End by	1/8 - 8/8
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Number			
Title	Testing responsive design of UX and implementing changes and fixes		
Outcome	The application will be easily useable as per the UX design goals on a range of devices		
Lead by	Geoff/Morgan/Dan/Jonathan	Trello Card URL	https://trello.com/c/e1mfW2e9