***CEN 4010-001***

***Principles of Software Engineering***

***Milestone 1***

***Connections During Social Distancing***

Sixth Degree

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***Fall Semester - September 28th - 2021***

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# **Executive Summary**

Social distancing has caused people to lose the sense of community by promoting isolation and a sense of distrust towards others, leading many to become anti-social. In the age of social media, we have the capability to transform the lives of people in a positive way. In the current climate of social media, we as a group focus on the material and focus on living our lives vicariously through different popular social personalities rather than trying to make emotional and healthy relationships with each other in which we promote better mental health from social platforms.

The purpose of the Sixth-Degree project is multifaceted in the goal to create a platform that will allow individuals to post and share their experiences including struggles during the period of quarantine. Users can then reply or comment on posts to relate their emotions and opinions on the matter. Through this system, this project is able to form relationships between users on an emotional basis. The goal we want to accomplish in this project is to successfully create and facilitate healthy connections during social distancing.

The Sixth-Degree project is a better platform than other social media platforms. There are a few reasons why Sixth Degree is something to look at. One, we plan to take inputs from users and create an environment for them and others to get in touch and create healthy relationships. Secondly, the way we differentiate from other platforms is in our simplicity and purpose by keeping to our principles on making a platform strictly for connections between people and stray into other aspects that dilute the vision we have by adding features that distract from talking and sharing. Lastly, our user-friendly interface will make conversations easy and fun on any occasion.

Sixth Degree will provide users with a sense of community and connections that will improve their mental health and social interactions with others. We chose the name Sixth Degree from the six degrees of separation theory because the theory explains that all people on average are six, or fewer, social connections away from each other. Though it is about separation we like to think that in a more positive manner than we are six degrees closer to each other. Lastly, this project hopes to facilitate something new in creating a community of people who are looking for a true connection with each other.

# **Competitive Analysis**

(1 = bad, 2 = poor, 3 = fair, 4 = good, 5 = outstanding)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Sixth Degree | Twitter | Instagram | Facebook | Reddit |
| Presentation | 5 | 3 | 1 | 4 | 3 |
| Usability | 5 | 4 | 4 | 3 | 4 |
| Navigation | 5 | 4 | 3 | 2 | 3 |
| Comments | 4 | 3 | 2 | 5 | 5 |
| Direct Messaging | 5 | 4 | 5 | 2 | 2 |
| Home Page | 4 | 3 | 4 | 4 | 4 |
| **Mean** | 4.7 | 3.5 | 3.2 | 3.3 | 3.5 |

**Sixth Degree -** The Sixth-Degree presentation is a simple elegant design that focuses the user on the things that matter most on our page which is the user posts leaving no clutter anywhere. The usability of our website is fast and quick. The navigation is simple and there are no places for users to get confused about where they are or what they are searching and looking for. The comments and direct messaging are the focus of our project and aim to produce meaningful conversations and form connections with fellow users. The home page is the main page where you can find all the information and important things that users share.

**Twitter -** Twitter’s presentation is cluttered and groups all of the contents in the middle of the page. The usability of twitter is higher than most social media websites and provides us with inspiration when developing Sixth Degree. Twitter allows users to easily navigate between tweets, replies, and other users’ accounts. Tweets are Twitter's way of putting your comments onto the internet and allow everyone to see them. The problem with this feature is that there is a word count when creating tweets. Direct messaging is simple when using Twitter as you just specify the person to send the message. The main problem with this website's homepage is that it is very busy and can be difficult for a beginner to interact with.

**Instagram** - Instagram’s presentation is poor. An example is the discovery page where there is just a confusing wall of endless videos that is difficult to track with the naked eye. Usability is good since trying to find users and following them is a simple action. Navigation is fair being combined with the discovery page issue but navigating a user’s profile is not difficult. Direct messaging on Instagram is outstanding and easy to use. The problem with this platform is that it became more about sharing with the world rather than connecting with people.

**Facebook** - Facebook’s presentation is very organized and user-friendly. Throughout the years, Facebook usability has lowered since it has changed so much from its original intention, it’s no longer a social platform to solely connect people. Navigation is changed very often which makes users confused when using Facebook or updating it. What makes users not use direct messages as often compared to other competitors is that Facebook makes users download a separate application to direct message other Facebook users. Facebook’s home page is good just like its presentation.

**Reddit** - Reddit’s presentation is somewhat confusing since it is just plain text forum discussions with some picture posts. There are no decorative elements, just forum blocks. Usability is good since it is relatively simple to understand how the website works. Navigation is poor when trying to find an exact post you want to find due to their abstract search bar. Comments are outstanding and organized to easily identify comments and replies. Direct messaging is poor to the point where it is almost completely discarded by users. Reddit’s home page is good and consists of the most popular/trending posts, letting the user learn about what events are currently taking place.

# **Data Definition**

User and Data:

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Meaning** | **Usage** | **Comment** |
| User | Actor | Use case scenarios | A general definition for someone visiting the website |
| Member | Actor | Use case scenarios | User with a registered member account |
| Non-Member | Actor | Use case scenarios | Users without a registered member account |
| Account | Data | Use case scenarios | Store all user’s information from the website |

Service and User interface:

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Meaning** | **Usage** | **Comment** |
| Comments | Service | Siter user service | Allow users to comment on posts and photos |
| Navigator | Service | Siter user service | Help users navigate through the web page |
| Photos | Service | Siter user service | Users will be able to post photos |
| Login | Service | Siter user service | Allow users to log in to their member account |
| Search | Service | Site user service | Allow user to find topics and other members |
| Post | Service | Site user service | Allow user to post about topics |
| Web site | User Interface | User Interface | Front end display for user interaction |
| Homepage | User Interface | User Interface | First-page user will enter |
| Information Page | User Interface | User Interface | Website page to display all site information. |

Platform hardware, service, and domain name:

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Meaning** | **Usage** | **Comment** |
| System | Platform hardware and services | Use case scenarios | MySQL database, all code, front end, back end, and supporting services |
| Sixth Degree | Domain name | Use case scenarios | Name that represents all web pages and websites |

# **Overview & Use Cases**

**Use Case - Search**

1. **Description:**

The users will utilize the search feature to find anything from the website.

1. **Actors:**
   1. User
   2. System
2. **Preconditions:**
   1. Internet connection
   2. System is available
3. **Primary Flow of Events:**
   1. User, non-member or member, enters web page
   2. User will enter the information they would like to search for
   3. Web page will display the search result
   4. User will select the topic or person from the search results

**Use Case - Comment**

1. **Description:**

The users will utilize the comment section to communicate with other users’ posts and comments.

1. **Actors:**
   1. User
   2. System
2. **Preconditions:**
   1. Internet connection
   2. System is available
   3. User must be logged in to the account
3. **Primary Flow of Events:**
   1. User, non-member or member, enters web page
   2. User will create or login to their account
   3. User will go to other users post and click on the comment button
   4. Website will display a field to enter a comment on another user post
   5. User clicks submit button to enter the comment
   6. System will display user comments on post

**Use Case - Home Page**

1. **Description:**

System will display home page when website is entered

1. **Actors:**
   1. User
   2. System
2. **Preconditions:**
   1. Internet connection
   2. System is available
3. **Primary Flow of Events:** 
   1. User, non-member or member, enters web page
   2. System will display home page when a user enters the website URL
   3. User can login to their account or create an account
   4. User can go to search, comment and post section

**User Case - Information Page**

1. **Description:**

System will display information page when user clicks on the information tab

1. **Actors:**
   1. User
   2. System
2. **Preconditions:**
   1. Internet connection
   2. System is available
3. **Primary Flow of Events:**
   1. User, non-member or member, enters web page
   2. User will click on the information tab
   3. System will display information page
   4. User can view website information

# **Complex Functional Requirements**

**Non-Member Expectations**

1. **Creating an account**
   1. When accessing the website, you are required to create an account. The website will prompt you to create an account in which you will be asked to provide a username, First name, Last name, security question, and password. The website will restrict the creation of similar usernames. Then the passwords will require you to input your password twice to confirm that both passwords match and a redundancy security question if the password is forgotten.
2. **Read & Response Sequence**
   1. The user enters a username
   2. The user creates a password
   3. User re-enters a password
   4. Users enter first name and last name
   5. The user enters redundancy security question
   6. System checks if the username is available
   7. System checks if passwords are the same
   8. The system will save user data
   9. User presses create account
   10. The system validates and creates the account
   11. The system sends the user to the home page
       1. **Function requirement label**
          1. Creating account
3. **Search People & Topics**
   1. Users will be able to search people and popular topics at the top of the page and the system will provide a list of people and or conversations to a searched topic.
4. **Read & Response Sequence**
   1. Users type a name or topic into the search bar
   2. The system responds with relevant information
      1. **Function requirement label**
         1. Browse by Popular Picks
         2. Browse by People
5. **Make a Post**
   1. User will press on a button on their homepage to make a post
   2. System will open a text box to allow user to add whatever they want
   3. User then will press on another button to make the post
   4. System will create the post and will post it on the website
      1. Functional requirement label
         1. Create Post
6. **Comments & Replying**
   1. User comments on a post
   2. system will post a comment on the unique post
   3. Other users will be able to reply to post
   4. System will add reply to comment
      1. Functional requirement label
         1. Comment on a post
         2. Reply to a comment

**List of Non-Functional Requirements**

**Performance Requirements:**

1. Execution Speed: Expected execution speed of 150-250 milliseconds.
2. Test Requirements and Scalability: The test requirements will include a full load test of the system to ensure that the system can withstand the usage of multiple users at once without any noticeable effects. Including the speed and stability of the server.
3. Maintainability and Management: The system should be easy to manage with little knowledge of the system itself. A developer should be able to enter the system and begin maintenance based on the information presented to the developer and shown within the system.
4. Availability/Reliability: The system should be reliable and if there is a system failure, the system should be able to be restored within a few minutes of dropping.

**Ease of Use:**

1. Usability: Our system should be aesthetically pleasing and easy to use for the common user. Deep knowledge of the website will not be necessary in order for the user to be able to use the website. The system should be eye-catching and representative of the developer’s best work and practices. The user should want to invite his or her friends to use the website.

**Storage Requirements:**

1. All storage for the system should be held using MySQL database accessible through PhpMyAdmin. Capable of holding all files and information of our site.

**Expected Load:**

1. Capacity: The server should be able to hold up to 50 users without any noticeable issues. Any number of users after 50 should be looked into and capacity should be further developed.

**Security Requirements:**

1. Login/Password System - Our website will have a login/password system to maintain the posts, conversations, and private information for each of the users. The users will be required to make a username, password, and security question in order to create an account on the website. If the user were to forget their password, they will have the option to answer the security question, and if the answer provided is correct, the password will be provided.
2. Security: The system will be able to encrypt sensitive data such as private conversations without access from unauthorized parties. The system will adhere to specific security standards of TCP/IP and as listed by the IETF.
3. Spam Protection: The Website will provide general protection from spamming the same string of characters, sentence, image, content, etc… The system will also contain Private Messaging (PM) capabilities. Spam protection will be withheld in (PM) unless reported by a user which will then be investigated.
4. Database Protection: All information held within the database will be accessible through the PHP code and user access. All-access to servers will be accessible through specific users given user and password information.
5. Privacy: All Private conversations held on our website will be encrypted and inaccessible. All archived data by users will be protected and hidden.

**Portability Requirements:**

1. Platform Compatibility: The website will be accessible on all platforms including: Mobile Devices, Gaming Consoles, Personal Computers, Laptops, All Browsers, etc… The platform compatibility will be tested then released one at a time.

**Support and Development Requirements:**

1. Coding Standards and Conventions: The system and website will be coded in compliance with HTML5 and CSS3 standards. All code produced for the website will be reviewed and tested, then finalized by the lead or another developer. All HTML5 and CSS3 code will be compliant with lowercase id tags where necessary.
2. Database Standards and Conventions: All database id tags and table ids, will be decided upon by the developers in order to provide the flow of information and ease of access.

# **High-Level System Architecture**

1. **Visual Studio Code and Brackets Integrated Development Environment (IDE):** Visual Studio Code and Brackets are the IDE that our group’s developers will be used to create the code for the development of the website and the website languages used will be the following:
2. Hypertext Mark-up Language (HTML) - We will use this language to display the website.
3. Cascading Style Sheets (CSS) - We will use this language to decorate the web pages on our website
4. Personal Home Page (PHP) - This language will allow us to implement the server-side functionality for the database and real-time edits
5. JavaScript - We will be using this language for client-side functionality that handles the User Interface (UI) to provide a pleasant user experience
6. jQuery - Will be used for client-side functionality (Link to License: <https://github.com/jquery/jquery/blob/main/LICENSE.txt>)
7. jQuery UI - This language provides client-side functionality as well that will handle User Interface (UI) to improve user experience (Link to License: <https://github.com/jquery/jquery/blob/main/LICENSE.txt>)
8. Bootstrap - We will be using Bootstrap as our framework for code construction of web pages (Link to License: https://github.com/twbs/bootstrap/blob/main/LICENSE)

2. **MySQL Database:** This project will be handled through the MySQL database. Users will be adding to the database through input functions and developers will manage the data or add items from and to the database.

3. **Cse.fau.edu Lamp Server:** This is the lamp server provided to us by the university that will host our Fall 2021 Sixth Degree project for the duration of this semester.

# **Team Roles**

**Team leader:**

* Eli Cohen

**Front End Developers:**

* **Scrum Master -** Giovanni Gonzalez
* **HTML & CSS Developer** - Jose Andres Hernandez-Bueso
* **GitHub Repository Admin** - Eli Cohen

**Back End Developers:**

* **MySQL Developer** - Jose Silverio
* **JavaScript Developer** - Ryan Smith

# **Checklist**

1. Team decided on basic means of communications - **DONE**

b) Team found a time slot to meet outside of the class - **DONE**

c) Front and back-end team leads chosen - **DONE**

d) GitHub master chosen - **DONE**

e) Team ready and able to use the chosen back and front-end frameworks - **ISSUE**, we still have not decided on a front-end framework and are searching for examples.

f) Skills of each team member defined and known to all 3 - **DONE**

g) Team lead ensured that all team members read the final M1 and agree/understand it before submission - **DONE**