



CS1530 - Software Plan Part 2: Cost Analysis and Schedule

Group 11 - Joseph Paul, Faaris Ismail, Dominic Karras, Mike Voit, Zach Grimaldi

DEMO: <https://pingg.tech>

User Manual DEMO: <https://help.pingg.tech>

Source Code (GitHub): <https://github.com/zpg6/pingg>

4.0 Cost Analysis

LOC Table

Function	Optimistic	Most Likely	Pessimistic	Expected	Deviation	\$/Line/Month	Cost/Month (Expected * \$/Line/Month)
Add new Users (Create an account)	350	500	1000	558	108	\$.001	\$.558
Set up Profile	400	600	800	600	67	\$.001	\$.600
Ask Preferences	300	450	700	467	67	\$.001	\$.467
Recommend Games and People	650	1000	2000	1108	225	\$.001	\$1.108
Infinite Feed (pagination)	500	750	1500	833	167	\$.001	\$.833
Heat Map	200	350	600	367	67	\$.001	\$.367
Follow Games and People	100	300	500	300	67	\$.001	\$.300
Make public posts	200	500	700	483	83	\$.001	\$.483
Get User Ping	100	200	350	208	42	\$.001	\$.208
Total	2800	4650	8150	4924	892	\$.001	\$4.92

Labor Cost (man hours)/Task Table

Function	Requirements	Design	Coding	Testing	Subtotal
Add New Users (Create an Account)	3	5	12	5	25
Set up Profile	2	3	7	4	16
Ask Preferences	2	3	6	5	16
Recommend Games and People	4	5	15	6	30
Infinite Feed (Pagination)	5	5	12	7	29
Heat Map	4	7	10	9	30
Follow Games and People	3	6	8	5	22
Make Public Posts	3	6	9	7	25
Get User Ping	2	2	4	3	11
Total	28	42	83	51	204
Rate (\$20/hour * man hours)	\$560	\$840	\$1660	\$1020	\$4080

The LOC table was made to estimate total costs incurred from outside sources. Since we are not taking salaries for this project, employee pay was not factored in. From what we have seen so far, these projections have been fairly accurate.

For the Labor cost table, these numbers were used to predict a fair pay to our team if this project was being developed for a company. A lower salary was used, as none of us are experienced software engineers who have worked extensively in the field.

5.0 Schedule

Schedule Chart

	<u>Week</u>	1	2	3	4	5	6	7	8	9	10	11	12	13
<u>Function</u>														
Add User														
Requirements		X	X	X	X									
Design		X	X	X	X									
Code				X	X									
Testing					X								X	X
Set up Profile														
Requirements		X	X				X							
Design		X	X				X							
Code							X							
Testing							X						X	X
Ask Preferences														
Requirements		X	X			X								
Design		X	X			X								
Code						X	X							
Testing							X						X	X
Recommend Games and People														
Requirements		X	X								X			
Design		X	X								X			

Code											X	X		
Testing												X		
Infinite Feed (Pagination)														
Requirements		X	X							X				
Design		X	X							X				
Code										X	X			
Testing											X		X	X
Heat Map														
Requirements		X	X	X										
Design		X	X	X										
Code			X					X	X					
Testing			X					X	X				X	X
Follow Games and People														
Requirements		X	X						X					
Design		X	X						X					
Code									X	X				
Testing										X			X	X
Make Public Posts														
Requirements		X	X					X						
Design		X	X					X						
Code								X	X					
Testing									X				X	X

Get User Ping														
Requirements		X	X											
Design		X	X											
Code							X							
Testing							X						X	X



CS1530 - User's Manual

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DEMO: <https://pingg.tech>

User Manual DEMO: <https://help.pingg.tech>

Source Code (GitHub): <https://github.com/zpg6/pingg>

1. Product Overview

pingg is a social networking site made for gamers to link up and play their favorite games both online and in person. pingg offers a variety of features that make it easy to connect with players from around the world that will provide you with an enjoyable gaming experience. Foremost, pingg provides a continuous, scrollable feed containing content generated by other users, curated to your preferences. Through this feed, pingg provides a platform to make text, image, and video posts that will be visible to other users. Users may upvote your post when it appears in their feed to increase its visibility, or they may follow you to see more of your content. Users can tag their posts with particular games, which will allow you to curate your feed based on your game preferences. pingg's search function also uses the tagging system, and you can search by tag to stay up to date on community activity for individual games. In addition, pingg allows users to set up a customizable public profile to show their preferred games, playstyle, skill level, past aliases, and region. Posts from users with similar data to you are more likely to appear in your feed by default, but the search function will allow you to manually search for players using this data as well. Finally, to promote an overall sense of community, pingg provides a regional density map that shows the worldwide distribution of players for various games.

2. Getting Started

2.1 Login

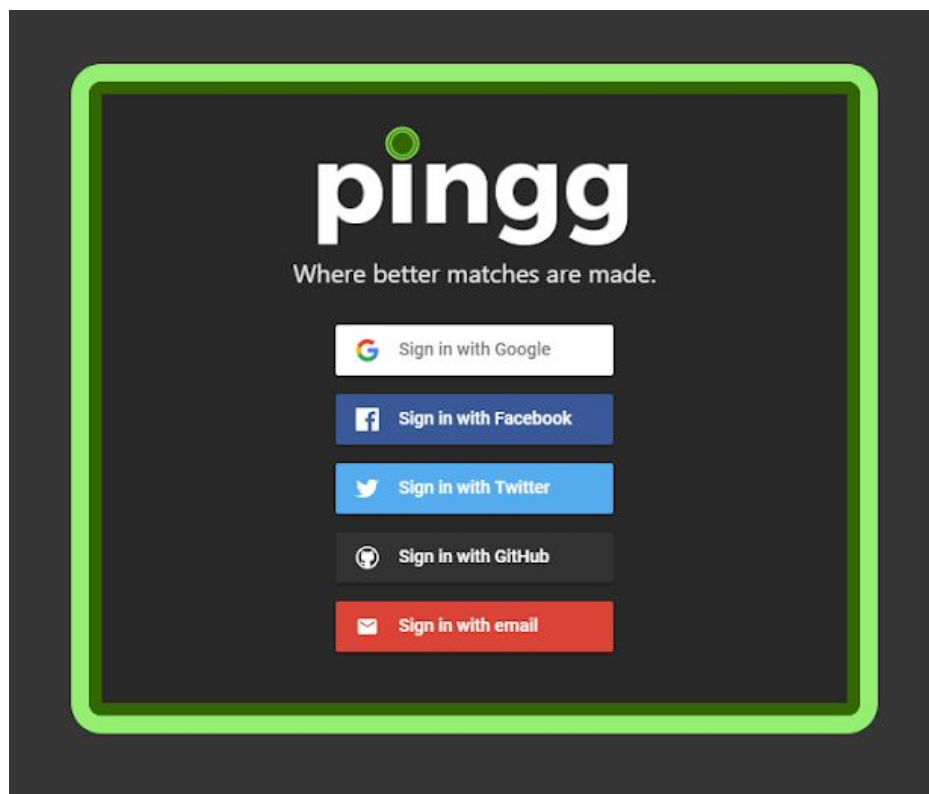
To access pingg you will first need to register an account. You can create an account using your email address or link an existing account for a different service.

To create a new account using your email address, click on "Sign in with email" and enter your desired email address into the prompt. You will then be asked to enter your name and choose a password for your account. After you have successfully entered your information, click "SAVE" to finalize your information. You will now be redirected to your pingg homepage.

Before you begin using the site, check your email for a confirmation link, and click the link to complete your email registration.

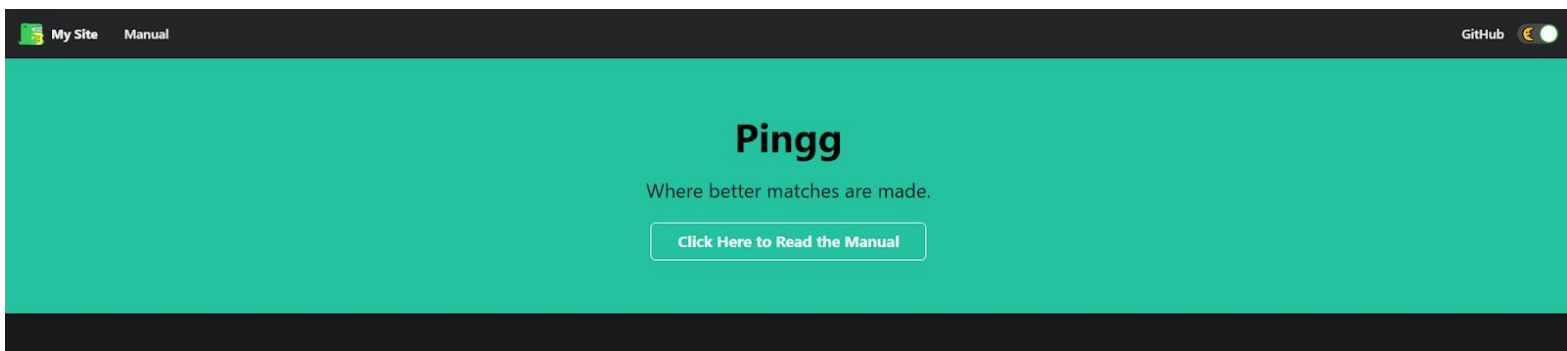
Alternately, you can create a linked account through Google, Facebook, Twitter, or Github by clicking the corresponding button on the sign in page. Once you have chosen one of these services, follow the instructions in the pop-up dialog to finish account creation. Once completed, you will be signed in and redirected to your pingg homepage.

Once your account has been registered, you will remain signed in to pingg for the next 24 hours, and you will see the pingg homepage immediately whenever you load the site. After 24 hours, you will need to sign in again. To do so, either select “Sign in with email,” and enter your email and password, or select the external service you used for your linked account and follow their instructions. To sign out of pingg manually, mouse over your profile icon at the top of the screen to reveal a drop-down menu, and click “Logout” at the bottom of the menu.



2.2 Help Mode

Visit <http://help.pingg.tech> for guidance on how to navigate the website or use any of its features.

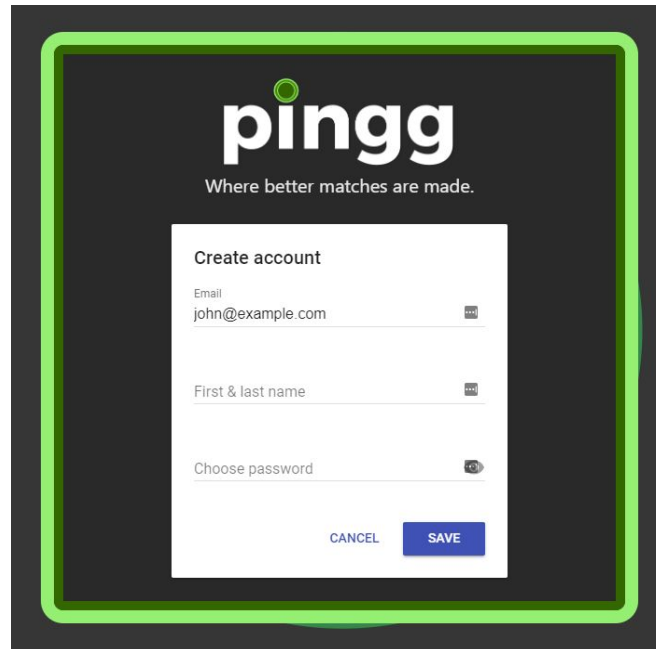


Sample Runs

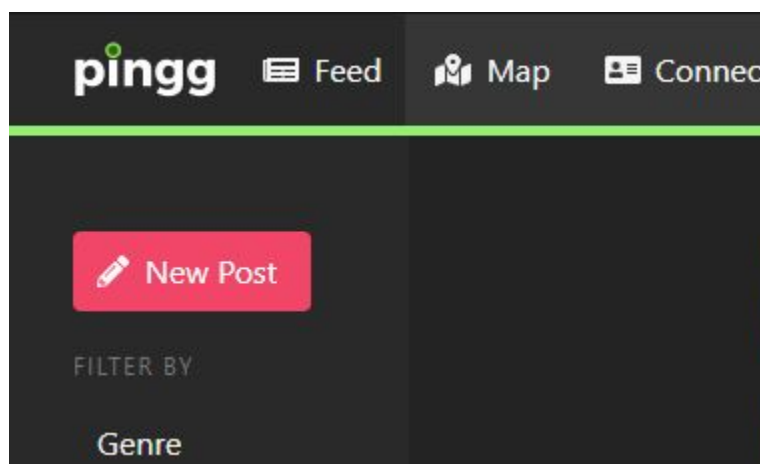
Creating a Post

This guide will walk you through how to login and create a post on pingg.

1. To access the posting feature, you will first need to create an account. In this guide, we will create the account using an email address, but you may also choose to link an account using a different service.

A screenshot of the 'Create account' dialog box on the pingg website. The dialog is white with a green border and is centered on a dark background. It contains three input fields: 'Email' with the value 'john@example.com', 'First & last name', and 'Choose password'. At the bottom are 'CANCEL' and 'SAVE' buttons. The pingg logo and tagline 'Where better matches are made.' are visible above the form.

- a. Go to <http://pingg.tech> and click “Sign in with email.”
 - b. Type your desired email address into the prompt and click “NEXT.” A new dialog will appear asking for your name and password.
 - c. Enter your first and last name in the appropriate field and then enter your desired account password to be used in future logins.
 - d. Click “SAVE” to finalize your information.
2. Once you have created your account, you will see the pingg homepage, from which you can create a new post.
 3. On the homepage, click on the red “New Post” button. A pop-up window will appear with a Title field, a Post field, and a Tags field.

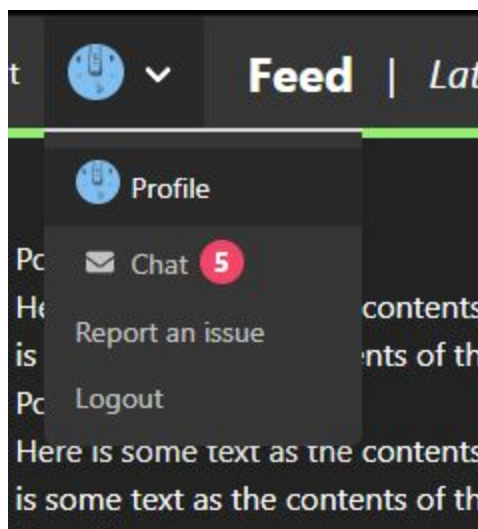


4. This guide will demonstrate how to create a text post, but you can also create an image or video post following a similar process.
 - a. First, set the title for your post by clicking the title field and typing up to 200 characters.
 - b. In the Post field, click “Text” from among the three available buttons to create a text post.
 - c. A text field will appear, in which you will type your desired post content. You can format the text in a variety of ways using the buttons provided at the bottom of the box.
 - d. Click on the Tags field and type desired search tags for your post. Separate each tag using a comma. The tags will attempt to autocomplete as you type them, and you can press Tab while typing a tag to autocomplete it and move on to the next tag.
5. Once you have filled out the three fields in the New Post window, click the “Post” button in the bottom right of the window to finalize the post and make it public.
6. Hover over your profile icon at the top of the screen and select “Profile” to view your profile page. Your new post will be visible on this page under the “Posts” heading.

Customizing Your Profile

This guide will walk you through how to login to pingg and customize your profile.

1. To obtain a profile on pingg, you will first need to create an account. In this guide, we will create the account using an email address, but you may also choose to link an account using a different service.
 - a. Go to <http://pingg.tech> and click “Sign in with email.”
 - b. Type your desired email address into the prompt and click “NEXT.” A new dialog will appear asking for your name and password.
 - c. Enter your first and last name in the appropriate field and then enter your desired account password to be used in future logins.
 - d. Click “SAVE” to finalize your information.
2. Once you have created your account, you will see the pingg homepage, where you will navigate to your profile page.
 - a. Mouse over your profile icon on the top of the screen to reveal a drop-down menu.
 - b. In the drop-down menu, click “Profile” to view your current profile.



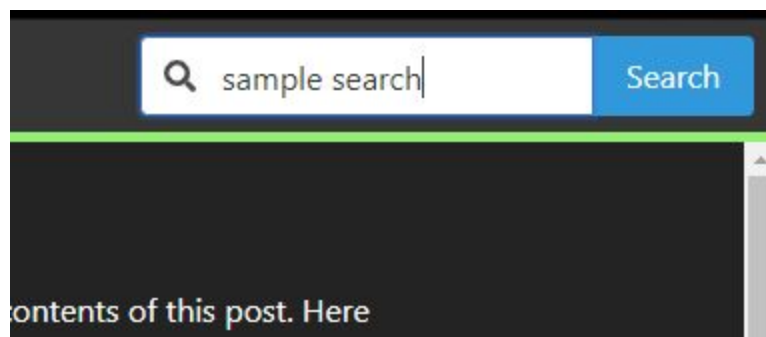
3. Next, you will make changes to the information displayed on your profile.
 - a. On your profile screen, click the “Edit” button at the side of the screen.
 - b. Click on any of the available fields to change their information. Some fields will require you to enter custom text, while others will allow you to search or choose from a list of options.
4. Finally, you will save the changes you have made to your profile.
 - a. Click the “Save” button in the bottom right to finalize your changes and note that refreshing the page before pressing “Save” will discard all active changes.
 - b. After you press “Save,” your current screen will show your newly updated profile as it appears to other users.

3. Modes of Operation

- **Profile Customization**

1. Mouse over your profile icon on the top of the screen to reveal a drop-down menu.
2. In the drop-down menu, click “Profile” to view your current profile.
3. On your profile screen, click the “Edit” button at the side of the screen.
4. Click on any of the available fields to change their information. Some fields will require you to enter custom text, while others will allow you to search or choose from a list of options.
5. Click the “Save” button in the bottom right to finalize your changes and apply them to your profile publicly. Note that refreshing the page before pressing “Save” will discard all active changes.
6. After you press “Save,” your current screen will show your newly updated profile as it appears to other users.

- **Search**

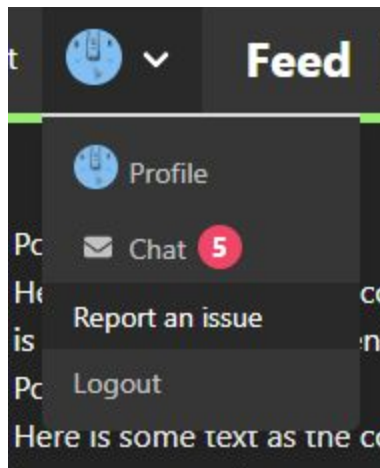


1. Click on the white bar at the top right labelled “Search” to select it.
2. Begin entering your desired search information. You can search for users, games, post titles, post content, and tags.
3. A list of suggestions will appear as you type in the search bar. If any of these match your intended search, you may stop typing and click on the suggestion to autocomplete the query. Otherwise, continue typing and click “search” or press “enter” on your keyboard to view the search results.

- **Create Post**

1. Click the “New Post” button on the left panel to create a new post. A pop-up window will appear with a Title field, a Post field, and a Tags field.
2. To set the title for your post, click the title field and type up to 200 characters.
3. To set the content for your posts, click on one of the three buttons in the Post field, either “Text,” “Image,” or “Video,” depending on the type of post you wish to create.
 - For a “Text” post, type your desired post content into the provided text field. You can format the text using the buttons provided at the bottom of the box.
 - For an “Image” post, a dialog will appear for you to browse your files and select the desired image from your computer.
 - For a “Video” post, you can enter a link to a desired Twitch or Youtube video. You will see a preview of the video when you enter the link.
4. Click on the Tags field and type desired search tags for your post. Separate each tag using a comma. The tags will attempt to autocomplete as you type them, and you can press Tab while typing a tag to autocomplete it and move on to the next tag.
5. Once you have filled out the three fields in the New Post window, click the “Post” button in the bottom right of the window to finalize the post and make it public.

- **Report an Issue**



1. If you are unsatisfied with pingg for any reason, or notice a part of the service that does not appear to be working as intended, we encourage you to contact us to make the problem known.
2. To report and issue with pingg, mouse over your profile icon and click “Report and issue” in the drop-down menu. A small dialog box will appear.
3. Leave a detailed and descriptive summary of the problem in the text field of the dialog box and click “Send” in the bottom left to send the report.



CS1530 - Software Requirements Spec

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2. Information Description

2.1 User Interface

The User Interface is described in detail in the User Manual document.

2.2 Preliminary Data Flow Diagram

The preliminary data flow diagram is available on the last page of this document.

3. Functional Description

3.1 Functions

IC Card

IC Name: Posts

Description: Allows users to make public posts

Interaction Pattern:



Mixed

My Task: Get users post and put it on the followers feed

Time Critical Condition: Posts in the feed should show up based on when they were posted

Name of Other IC:

Message to Other IC:

Other IC's Task:

Card 1 of 1 (If necessary please use several IC cards to describe an IC)

IC Card

IC Name: Heat Map

Description: Displays Heat Map around User Location

Interaction Pattern:



Mixed

My Task: Grab users location and layer a heat point on the map

Time Critical Condition: Heat points expire in one month

Name of Other IC:

Message to Other IC:

Other IC's Task:

Card 1 of 1 (If necessary please use several IC cards to describe an IC)

IC Card

IC Name: Ping

Description: Get current ping of user

Interaction Pattern:



By Myself no Interacton

My Task: Fetch users ping using internet connection

Time Critical Condition:

Name of Other IC:

Message to Other IC:

Other IC's Task:

Card 1 of 1 (If necessary please use several IC cards to describe an IC)

IC Card

IC Name: Preferences

Description: Ask users for their game preferences

Interaction Pattern:



By Myself no Interacton

My Task: Store user preferences into user database

Time Critical Condition:

Name of Other IC: Recommendations

Message to Other IC: Use preferences to determine reccomendations

Other IC's Task: Show users reccomendations

Card 1 of 2 (If necessary please use several IC cards to describe an IC)

IC Card

IC Name: Create Account

Description: Create Account for New Users

Interaction Pattern:



By Myself no Interacton

My Task: Create Account for users and add their information to the database

Time Critical Condition:

Name of Other IC:

Message to Other IC:

Other IC's Task:

Card 1 of 1 (If necessary please use several IC cards to describe an IC)

IC Card

IC Name: Set Up Profile

Description: Allows users to set up and edit their profile

Interaction Pattern:



By Myself no Interacton

My Task: Set up user profile

Time Critical Condition:

Name of Other IC:

Message to Other IC:

Other IC's Task:

Card 1of 1 (If necessary please use several IC cards to describe an IC)

IC Card

IC Name: Feed

Description: Infinite Scrollable Feed

Interaction Pattern:



By Myself with Interaction

My Task: Fetch new posts when user reaches end of feed

Time Critical Condition:

Name of Other IC:

Message to Other IC:

Other IC's Task:

Card 1of 1 (If necessary please use several IC cards to describe an IC)

IC Card

IC Name: Recommendations

Description: Show users reccomended posts

Interaction Pattern:



By Myself with Interaction

My Task: Show users reccomendations

Time Critical Condition:

Name of Other IC:

Message to Other IC:

Other IC's Task:

Card 2of 2 (If necessary please use several IC cards to describe an IC)

3.2 Processing Narrative

1. Create Account

- This function allows us to collect preliminary data from the user before they start using the pingg service. When users use the service for the first time, they are prompted to sign in using one of five sign in methods (Google, Facebook, Twitter, GitHub, or email). If this is a first time user, an account will be created for them the first time they sign in. After an account is created, the user's information such as name, email, and age will be stored in our database so they can continue to sign on with the same details and use the pingg service.

2. Setting up profile

- After user's create an account, they will be able to set up and add more things to their personal profile for others to view. This includes selecting a profile picture and linking their gamer aliases to their account. User's will be able to edit this information on their profile page whenever they want to.

3. Asking users for game preferences

- User's will also have an ability to input their current game preferences. User's will be presented a selection of options to choose from, such as platform, genre and age. This information will be stored in the backend of the user's data. This function will also be used to help recommend other games to the user.

4. Recommend games to follow

- User's will also be presented with a list of recommended games to follow. With the current user data such as preferences and currently followed games, a backend algorithm will be used to show the user similar games they may be interested in. All the games in our database will be tagged with certain characteristics. Games that have similar tags that are not already being followed by the user will be shown in their recommendations.

5. "Infinite" scrollable feed

- When users are on the feed page, they are presented with posts from games and users they are currently following as well as recommendations. User's are able to scroll down on the screen to reveal more of these posts. User's can continue to scroll down and more posts will appear on the screen. In order to create this "infinite" scroll experience, we need a function to continually collect posts as the user continues to scroll further down. When a user reaches close to the end of the feed, the function requests a new set number of posts to show to the user, and adds them to the bottom of the feed.

6. Heat points of users on a map

- Users will be able to submit their location data to the app and have it displayed on the map page of pingg's website. When user's opt into this feature, their current location data will be pulled from their device. Using their latitude and longitude coordinates, as well as the Google Maps API, a heatmap layer will be placed around their coordinate point and displayed on the Map. This point will remain on the map until the user opts to remove it or it expires after a month. This heat point can be updated later on if the user wishes.

7. Following games and people

- Users will be able to follow certain games and people within the ping service. On either a game or profile page, a user can press a button to “follow”. This data will be stored in the backend of the user’s data, and be presented in their following list. This will also be used to populate the user’s feed, as posts relating to the game or from the user they are following. In addition, users can also choose to unfollow games or other users if they wish. This data will be removed from the user’s database and will no longer appear on their feed page.
- 8. Make public posts
 - When users press the “New Post” button on the feed page, they will be prompted with a screen where they can write or share ideas about different games to their followers. Once a user submits their post, it is collected and stored in a database. Their post will be presented on their follower’s feed, as well as on their profile. Each post made by the user will contain text, an image, or both.
- 9. Get user’s current ping
 - Within their profile, user’s will be able to get the current ping of their internet connection. User’s will be able to simply hit and a function will fetch their ping in the background. This information will be stored in the backend and displayed on the user’s profile. Users can also view each others’ pings.

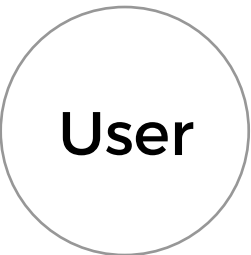
3.3 Design Constraints

1. Create Account
 - The most obvious design constraint for account creation is the amount of sign in options a user can choose from. This was intentional in our design because we didn’t want to clutter our sign in page with too many services, and thought just having the top 5 would suffice. If a user wishes to log in with a service that is not listed on the sign in page, they will not be able to do so.
2. Setting up profile
 - In order to keep each user’s profile and public data simple, we have limited the amount of things they can add to their profile. For profile pictures, users are only able to select from a limited selection of avatars to display as their profile picture. Keeping these options limited helps us with efficiency as we limit the amount of user profile data we have to store. A user is not able to upload their own picture, nor can they add information to their profile that is outlined in the profile page.
3. Asking users for game preferences
 - A major constraint in this feature is the specificity in which we ask the user for their preferences. Since the preferences need to apply to a broad range of games in our database, the preferences that the user’s chose may be too broad to apply to a specific game they have in mind. In addition, our service will only ask the user for a select number of preset preferences. A user cannot add additional preferences that are not asked by our service.
4. Recommend games to follow
 - The biggest constraint in the recommendations that are shown are the limited amount of games that are uploaded to our database. Since games that are not in our database cannot be recommended to the user, the recommendations may be limited to some extent.

5. "Infinite" scrollable feed
 - While the feed may seem "infinite," there are some constraints to this feature. Although a user can continue to scroll down on the feed, only a certain amount of posts are preloaded on the feed page at a time. Once the user reaches the end of the feed, more posts will be loaded into the feed. Since posts are added as the user scrolls down, there may be some delay in loading posts further down on the feed.
6. Heat points of users on a map
 - The heatmap is not intended to show a user's precise location. Instead, it takes the user's coordinates and layers a "heat" point of a specified radius on top of their location. This constraint was intentional as to protect user data and not show their exact location. The heat points on the map also do not show a "live" few of each user. They are only updated when the user wants to, and these heat points expire after a month.
7. Following games and people
 - As for following games and people, the only real major constraint is the availability of things users can follow. User's are unable to follow things that are outside of our database, and are limited to the selection that is presented on the website at that current time.
8. Make public posts
 - Users can only make text and image posts on the pingg platform. They will be unable to make posts containing any other attachments. The number of characters allowed in each post will also be limited. Posts that users make will also only be shown on their followers' feeds or on their user profile. This means that users cannot make posts directly to those who do not follow them. In addition, each post that a user makes must be public. A user cannot send any private messages or posts to other users.
9. Get user's current ping
 - One of the major constraints with obtaining the user's ping is accuracy. It is assumed that the user will fetch their pingg using the same connection they will be gaming on. However, since the device they access the pingg website on may be different from the device they game on, there may be discrepancies between ping times. Additionally, ping can fluctuate from time to time. The ping time fetched from the user may be outdated as it does not show their live ping at any given moment in time.

pingg DATA FLOW DIAGRAM

KEY:



OFFLINE / OUTSIDE

STATIC IMPORTS

BACKEND SERVICES

LIVE WEB APP

