bitMap – A map-based photo-sharing website built for photographers

Max Jameson

University of Lincoln, School of Computer Science

19702735@students.lincoln.ac.uk

Abstract. This paper will put forward the idea and plan for a photo-sharing map-based website. A lot of photo-sharing websites are built to attract a wide audience across the internet with images uploaded featuring a large range of content e.g., selfies and memes. This project aims to provide a website for photographers to post their photos on a world map allowing other photographers to view them and gain inspiration from each other, without their photos being buried amongst other types of posts like you would find on a traditional social media feed.

Keywords: map-based, google maps API, photographers, website

1 Introduction

The following section will give a brief description of the project along with any research conducted which helps to explain the project.

1.1 Project description

bitMap is intended to be a unique photo-sharing website for photographers. Rather than using a social feed to display photos to a user, an interactive map built on the google maps API will be used instead. Photographers can upload photos to the website with a location tag, these photos will then be placed on the map for other users to see. The map could then be used by photographers to see places which are popular for taking photos for ideas and inspiration, they can also see less frequented places for original ideas and shoots.

A profile system will also be in place so photographers can create a portfolio of their photos in one central location. Photos will be likeable on bitMap, but the like statics will be hidden from both viewer and the owner of the photo, this is to prevent users from showing a crowd mentality and only liking posts which already have a high number of likes. A study on social media likes in 2016 found “that the popularity of a photo had a significant effect on the way that photo was perceived. Adolescents were more likely to like a photo—even one portraying risky behaviours, such as smoking marijuana or drinking alcohol—if that photo had received more likes from peers.” (Sherman, L.E. et al., 2016, 69). The idea behind hiding likes is that photos will be liked and viewed by users with their own opinions rather than a like counter influencing their interaction.

After the first development iteration is complete user feedback will be gathered on the product in the form of an open-ended questionnaire. Users will be asked a series of questions about the website as well as how they think the website could be improved. Gathering the opinions of users is beneficial as in a recent study “most participants, 68%, used feedback “often” or “very often” to identify new features, 5% “rarely” used feedback for that purpose. 97% “agreed” or “strongly agreed” that feedback gives them a better understanding of the needs of the user and makes them aware of usability issues. 81% agreed that feedback helps with prioritizing requirements.” (van Oordt, s. and Guzman, E., 2021. 227-228). This shows that collecting user feedback for the bitMap website will help build a better final product as well as gain suggestions for future improvements.

1.2 Research

Websites such as Snapchat[1] and Instagram[2] do have photo map features built-in but their use case is different from that of bitMaps. Both applications are aimed more at user interaction and socialization rather than the actual content and quality of the photos, a lot of users will post random or personal photos taken throughout their day rather than professionally shot pictures.

Flikr is an example of another photo-sharing-based website aimed directly at photographers, this website does also have a photo map feature which does display professional standard photos. The map feature on this website is very unintuitive, improvements could be made to its layout and overall functionality.

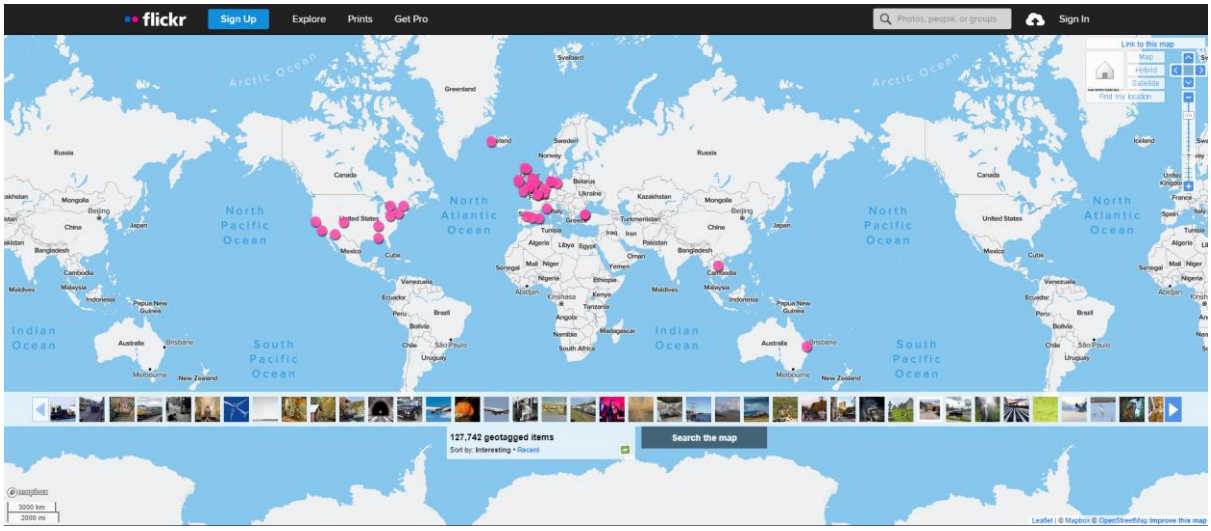


Fig 1. Screenshot of the Flikr map page (Flikr, 2022)

Flikr will show photos in rows underneath its map (as shown in figure 1) with unclear indications as to where each photo is from until it is selected. I aim for bitMap's UI (user interface) to have improved usability compared to Flikr's offering. UI improvements are important as "interfaces with good usability help their users complete more tasks in less time and with less effort, which gives them greater satisfaction. Given the vast array of options available to users today, usability is an important interface feature that may lead to the commercial success or failure of a software system." (Lima, A.L. De S. and Benitti, F.B.V., 2021, 69). Photos will be placed directly on the location they are taken allowing the user to instantly gain all the information they need from a photo.

Users on Flikr are also required to search by a specific tag to find a photo. In some cases, a user might not know what they are specifically searching for so bitMap will display all types of photos on its map for a user to view, allowing them to explore the map on their own terms

[1] Snapchat offers a feature called Snap Maps which is a map view of your friend's recent posts (both photos and videos) or other users public posts: https://map.snapchat.com/

[2] Instagram's map feature operates like Snapchat's Snap map but will also show the most popular photos of all time in a location as well as the most recent, this map is only viewable by selecting a location tab in a photo: https://www.instagram.com/

2 Aims and Objectives

The below aims and objectives will outline the key purpose of the project and what it plans to achieve.

2.1 Aim 1

To create a map-based web platform for photographers to share and view photos placed on a world map

Objectives:

- Specific: Develop and publish a map-based website for uploading and viewing photos
- Measurable: I will spend 12 hours each week developing planned features
- Achievable: The google developer forms can provide information to make the map
- Relevant: The goal is to have a usable website by the end of the project
- Time-bound: The project will be started now (November 2022) and will be complete by the end of April 2023

2.2 Aim 2

To have users test and approve the website

Objectives

- Specific: Develop a user questionnaire and have users give feedback on the website
- Measurable: I will spend 1 month developing a questionnaire
- Achievable: Previous UXD (User Experience Design) studies can be used to develop the questionnaire
- Relevant: The goal is to have an approval rating average of 7/10 or above
- Time-bound: Data collection must be complete by the first week in April 2023

3 Project Plan

A plan for the project has been devised using a Gantt chart. This chart breaks down each task into its research, development, testing and bug-fixing phases to allow a high degree of progress tracking throughout the project. The chart can be found in Appendix 1.

4 Risk Assessment

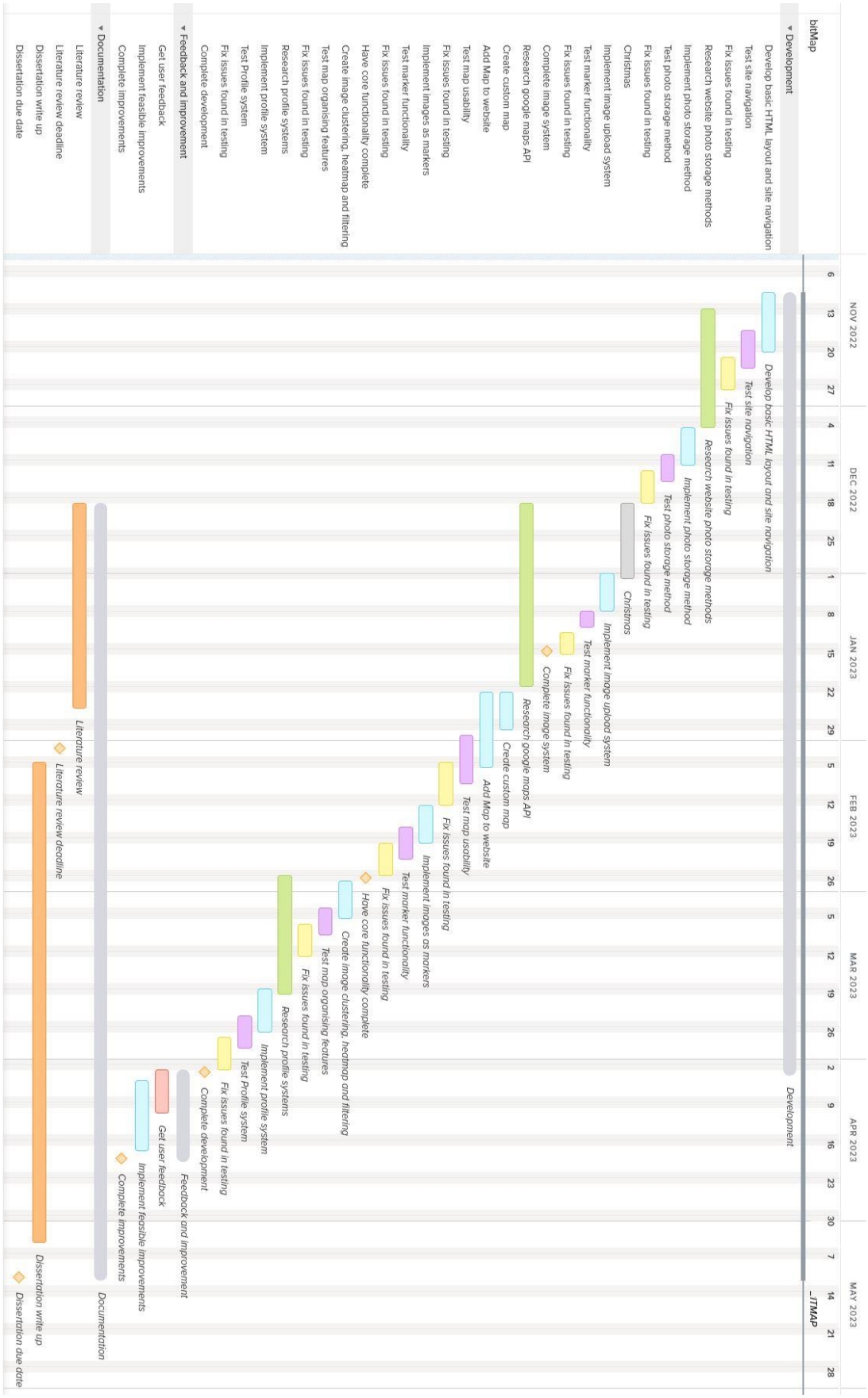
When planning a project, it is key to outline any issues or risks that may occur as planning for these can reduce any negative impacts on development.

Table 2. Risk assessment for the bitMap project.

Risk No.	Description	Impact	Severity	Likelihood	Action
1.	Underestimating the time required for a task.	Upcoming tasks could be delayed.	60%	50%	Identify why the task is taking longer and adjust the time scale with the smallest possible impact.
2.	Limitations of the google maps API.	Prevents certain features from being developed.	70%	40%	Other solutions will need to be researched, or the feature will need to be modified to fit within the API's functionality.
3.	Limitations of programming languages chosen.	Prevents certain features from being developed.	70%	40%	Search for solutions or use other languages to implement features such as JavaScript, python or C#
4.	Feature Creep: Adding new unplanned features during development.	Will disrupt the plans' timescale and affect overall development.	40%	30%	New feature ideas can be added to a future development section in the final report.
5.	Lack of photos to upload to the website.	Testing could return incorrect data.	50%	20%	Take more photos to use as testing samples.
6.	The site becomes vulnerable to online attacks e.g., SQL injections.	Data and code could be lost or stolen.	90%	10%	While developing user interactable and online features build in security measures e.g., input validation.
7.	Cannot find a suitable server to host the website.	The website will not be published to the public.	90%	50%	The website can either be hosted in the cloud or from a personal machine.
8.	User feedback is negative.	Website publishing will be delayed.	80%	30%	Develop all features to a high standard and focus on areas mentioned in user feedback.
9.	Image storage format causes performance issues.	The website will run poorly.	70%	40%	Either optimize image storage or move to a new storage system.

Appendices

Appendix 1



5 Bibliography

1. Flikr. (2022) Explore everyone's photos on a map, Available at: https://www.flickr.com/map (Accessed: 3 November 2022)
2. Lima, A.L. de S. and Benitti, F.B.V. (2021) 'UsabilityZero: Can a Bad User Experience Teach Well?', *Informatics in Education*, 20(1), pp. 69–84. Available at: https://search-ebscohost-com.proxy.library.lincoln.ac.uk/login.aspx?direct=true&db=eric&AN=EJ1289386&site=eds-live&scope=site (Accessed: 3 November 2022)
3. Sherman, L.E. *et al.* (2016) 'The Power of the Like in Adolescence: Effects of Peer Influence on Neural and Behavioral Responses to Social Media', *Psychological Science*, 27(7), pp. 1027–1035. Available at: https://search-ebscohost-com.proxy.library.lincoln.ac.uk/login.aspx?direct=true&db=edsjsr&AN=edsjsr.24763606&site=eds-live&scope=site (Accessed: 7 November 2022).
4. van Oordt, S. and Guzman, E. (2021) 'On the Role of User Feedback in Software Evolution: a Practitioners' Perspective', *2021 IEEE 29th International Requirements Engineering Conference (RE), Requirements Engineering Conference (RE), 2021 IEEE 29th International, RE*, pp. 221–232. doi:10.1109/RE51729.2021.00027.