Butterfly Effect:

Human-Computer Interaction Project

User Stories and User Study Proposal

Team 26

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1 Introduction

1.1 Problem Background

In an age where social media has become a main source of news and entertainment, it has become important that the user understands the information being presented to them. Acknowledging the massive and varying amount of information found on any social media platform, it has become less feasible for the average internet user to understand the information given to them. For the user to be capable of understanding the majority of the topics, they will need supporting information to go along with the social media post. The supporting information may include, but not limited to, the definition of words, the financial status of a company, sports statistics, or a summary of a topic.

1.2 Needs Statement and Objective

Currently, users can view a timeline of posts or tweets from either Facebook or Twitter, respectively. In order for the user to have access to have all the information they need to understand a post or tweet, our application aims to provide supplemental information necessary to understand the majority of topics. To achieve this comprehensive application, trending posts from both social media platforms will be displayed on a trending page with each trend being interactable to give additional information. In addition, the users will have the option to search trends by categories, such as finance, news, and sports. Each option will have specialized information depending on which category is chosen. Lastly, the user will have the option to view posts and tweets based on keywords, such as people or events.

1.3 Design Constraint

The design constraints for our application fall into two general categories: experience and time. Since the majority of our team has never done a project of this scale, there is a learning come that will have to be overcome in order to have a successful product. Additionally, since time is a constraint, the team must work diligently and efficiently to avoid major setbacks. However, even with these constraints, with the current progress that we have to achieve and with the momentum we are moving along, a working product will be feasible for our development timeline.

1.4 Validation and Testing Procedures

In order to make sure our team will be providing a useful and meaningful product, our team will be conducting a user study. In this study, our team will conduct a survey and product testing part. In the survey, we will ask different people their opinions on our product. This will include questions about design, functionality, usefulness, and ease of use. The survey will contain a question followed by multiple answers, and another section if the answers do not reflect their opinion. The testing portion will consist of a series of tasks that the user must complete in a reasonable timeframe. On our end, we will note how long it took to complete a task, how many clicks it took to complete a task, and whether a task was completed. At the end of the testing part, the user will be asked a series of questions to describe how difficult it was to complete the task and how they felt about the product. Lastly, our team will compile the results, these results will be analyzed and discussed to determine changes that need to be made to improve our product.

1.5 Writing Requirement

In order to meet the W requirement for this course, each team member will be responsible for writing one document of 1000 words or greater. Nicholas Cashiola is the author of this document, “Project Proposal”, Donald Hacker is the author of the User Stories and User Study Proposal, and Ryan Clark is the author of the User Study Report. All team members will contribute to the Team Retrospective Report.

2 User Stories

2.1 User Stories

User Story 1

As the user, I will enter a Twitter handle or Facebook username. The website will then show me the page that contains the post timeline for the user selected.

User Story 2

As the user, I will enter a topic of interest or a person's name. The website will then show me the page that contains a summary (description) of the item entered and top trending tweets from Twitter and posts from Facebook for that company.

User Story 3

As the user, I will select a category of interest (eg. sports, finance, news, or trending). The website will then show me a page that will contain the top trending tweets from Twitter and posts from Facebook in that specific category.

User Story 4

As the user, I will enter a company's name or stock ticker symbol. The website will then show me a page that will contain general financial information regarding the company's stock, a general summary of the company, and top trending tweets from Twitter and posts from Facebook for that company.

User Story 5

As the user, I will enter a specific sports team or athlete. The website will then show me a page that will contain general statistics regarding the player of team, previous games scores, and a general summary of the player or team.

User Story 6

As the user, I will enter a city of interest (US only). The website will then show me page that will display top trending tweets from Twitter and posts from Facebook for that location.

User Story 7

As the user, I will select a category of interest (eg. sports, finance, news, or trending). The website will then show me a page that will contain the top trending tweets from Twitter and posts from Facebook in that specific category. I will then select one the tweets displayed to me. A sentiment analysis score will be displayed on to me on the page.

2.2 Updates to the Proposal Design

Since the design proposal, there have been three major changes: a change in the runtime environment, a change in data transporting tool, and a change of an API. The runtime environment changed from a maven to Node.js. The reason for this change was because the maven environment made it difficult to synchronize the settings of everyone’s environment. The uniform environment created unnecessary errors that would require hours of debugging to figure out. The change to Node.js corrected this issue since all the settings would be stores in our project folder rather than make changes on an IDE. The next major change was the change in the data transporting tool. We originally used node modules to transport data but as we soon realized, we had to deal with a lot of dependency issues. As a result, we switch to XML which takes care of the dependencies for use. The last update since the proposed design is a change to our finance API. Originally, we planned to use the Yahoo Finance API but as we started to establish a connection, we realized that the API was shutdown. As a result, we switch to the

Alpha Vantage API. We choose this API due to its heavily documented website and web recommendations for a finance API.

2.3 Complete Module-Wise Specifications

Our web application relies on the use of six APIs: Wikipedia, Yahoo Sports, Alpha Vantage, Sentiment, Twitter, and Facebook. The use of each API will vary based on what the keyword the user enters.

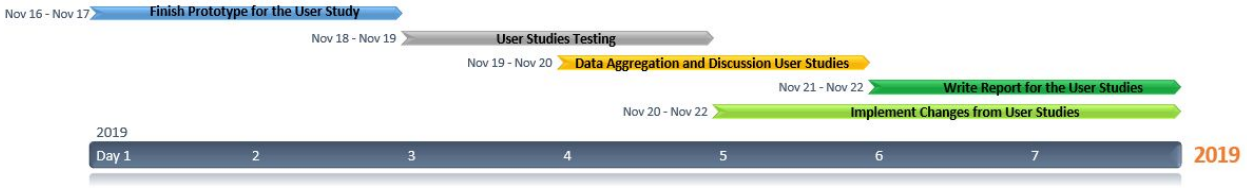
On the home page, the user has the option to search for a Twitter handle or Facebook username, company name, location, sports team or athlete. Regardless of which item is selected, the search will be queried using the Wikipedia API. This will return a summary of the topic, person or location selected. Additionally, using the Twitter and Facebook API, the search request will also display the Twitter tweets and Facebook posts for a specific handle/username or return the top trending tweets and posts for any other type of search.\

However, if the user selected a sports team or player, the search request will then determine if its a player or team. Once it determines which one it is, it will use the Yahoo Sports API to return the stats of the previous game and season stats for the player or team. If the user selects a company, the search request will use the Alpha Vantage API. This will return general stock information, such as the open, close, low, and high prices. The Alpha Vantage API will also return the close prices of the stock for the previous year. This information will be used to create a graph of the stock's performance for the past year.

Lastly, after the user has chosen a search and the website has been displayed on the page, the user will have the ability to select any of the tweets or posts on the page. Selecting a tweet or post will display a sentiment score on the page, which is how well received a tweet or post is. This is done with the help of the Sentiment API. The Sentiment API will be fed the sting of tweets or posts and the comments. The result will be a numeral number stating how positive or negatively a tweet is revised. The number will be displayed as well as a verbal indicator of how well received a tweet is.

3 User Study

3.1 User Study Implementation Schedule



November 16-17: Finish Prototype for the Use Study

During this step of the user studies implementation schedule, the primary goal is to get the web application to a state that a user can navigate throughout all the pages and enter simple searches. Each team member will finish an API and implement the functionality into the web application.

November 18-19: User Studies Testing

In this step, there will be three defined steps taken when conducting a user study: a pre-interview step, testing step, and a post-interview step. The pre-interview step will inform the user of our product, and the user will be asked questions regarding the usefulness of our product and what why would use it for. The next step, the testing step, The user will be given a list of tasks to complete to gauge the effectiveness of our product. The last step will consist of a post-interview which will ask the user general questions about their experience using the and about what aspects could be improved upon in our web application

November 19-20: Data Aggregation and Discussion of User Studies

A team meeting will be held to sort through all the responses in our interviews and determine the changes that need to be made to improve our product. A list of changes should be the result of the phase.

November 20-22: Implement Changes from User Studies

Using the list of changes that were created during the Data Aggregation and Discussion of User Studies phase, the team manager will assign changes to be done by each member. Each member must start and finish implementing their changes in this phase.

November 21-22: Write a Report for the User Studies

In this step, the project manager, Ryan Clark will write the User Studies report.

3.2 User Study Validation and Testing Procedures

The user study will be a combination of directed interviews and moderated user-testings. More specifically, it will consist of three steps: the pre-interview, user-testing, and post-interview. Each step should be conducted without a time limit except for the user testing, which will have a

five-minute timer. Additionally, before the study begins, the user will be in a room with all the team members.

During the first phase of the interview, the user will be asked a series of questions by the pre-interview moderator regarding social media and how they use it. After each question, the user will be given 30 seconds to respond and the pre-interview moderator will record the answers. After all the questions have been finished, the user will be presented with the prototype for them to use. The user-testing moderator will explain our product to the user and allow them a minute to familiarize themselves with the product. The user-testing moderator will then give the user a task lint and ask them to perform each task. There will be a five-minute timer to complete all the tasks. After the user-testing, a post-interview will be administered by the post-interview moderator regarding design, usability, and usefulness. After each question, the user will be given 30 seconds to respond and the post-interview moderator will record the answers. After the post-interview, the user study will be concluded for that user.

3.3 Division of Labor and Responsibilities

Nicholas Cashila:

- User Study Role: Pre-Interview Moderator (Deadline: 11/19//2019)
- Implement Wikipedia and Twitter API for prototype (Deadline: 11/17//2019)
- Aggregate Data for Pre-Interview Questions (Deadline: 11/20//2019)
- Implement Changes designated by Project Manager (Deadline: 11/22//2019)

Ryan Clark:

- User Study Role: User-Study Moderator (Deadline: 11/19//2019)
- Write the User Studies Report (Deadline: 11/22//2019)
- Implement Sentiment API for prototype (Deadline: 11/17//2019)
- Aggregate Data for User-Study Questions (Deadline: 11/20//2019)
- Implement Changes designated by Project Manager (Deadline: 11/22//2019)

Donald Hacker:

- User Study Role: Post-Interview Moderator (Deadline: 11/19//2019)
- Implement Alpha Vantage and Yahoo Sports API for prototype (Deadline: 11/17//2019)
- Aggregate Data for Post-Interview Questions (Deadline: 11/20//2019)
- Implement Changes designated by Project Manager (Deadline: 11/22//2019)

3.4 Pre-Interview Questions

1. Do you have a social media account?
    a. Yes
    b. No

    c. If so, How many?
2. How often do you use social media?
    a. Less than 1 hour
    b. Between 1 to 2 hours
    c. More than 3 hours
3. What categories do you use social media?
    a. Possible Answers: Sports, News, Finance, Socializing, etc.
4. How often do you come across a post on social media that you don't understand?
    a. Never
    b. Sometimes
    c. Frequently
    d. Most of the Time
5. If you didn't understand something, would you to look further into the post for more information?
    a. Yes
    b. No
    c. Sometimes
6. If answered yes to Question 5, how many websites would you visit to understand the information? And which would you visit?

3.5 User-Testing Task

1. Navigate to the Trending page and type in the search bar a topic of interest
2. Navigate to the Finance page and type a company of interest
3. Find the latest tweets posted by the Major League Baseball twitter account
4. Find the trending tweets for New York City
5. Find the stock information for Amazon

3.6 Post-Interview Questions

Design:

1. Did the layout of the application makes it easy to find items?
    a. Yes
    b. No
    c. Made no Difference
2. Is there something on the application that did not make sense?
    a. Answer would be a specific feature
3. Is there something on the application you would move?
    a. Yes
    b. No
    c. Neither

4. Is there something on the application you would remove?
    a. Yes
    b. No
    c. Neither
5. What was the hardest task and why?

Accessibility:

1. Does the font size needs to be bigger, smaller, or remain?
    a. Bigger
    b. Smaller
    c. Remain
2. Does the color scheme makes make it?
    a. Yes
    b. No
    c. Neither
3. Would it help to have options for different color schemes?
    a. Yes
    b. No
    c. Maybe

Usefulness:

1. Do you see yourself using this application?
    a. Yes
    b. No
    c. Maybe
2. How often do you encounter this problem?
    a. Daily
    b. Weekly
    c. Monthly
    d. Never
3. What aspects of the application did you enjoy?
4. What aspects of the application do you not like?
5. Is anything missing that you would like to see added to the application?

4 Expected Results

All the data that we will be gathering for the user studies will be quantitative. We are expecting to have at least a sample size 10-15 users in our user study. The data collected will be a combination of “yes,no,or maybe” variation and a free answer response portion.

The pre-interview questions are geared towards their familiarity with social media and how often they deal will the problems that our application addresses. This data will be used as an indicator to remove bad data sample, if necessary. If the never uses social media and never come across any of the situations listed in the pre-interview that data will be thrown out because out application is not meant for that person.

The user-testing data being recorded is a yes or no answer whether the user completed all the tasks that were given to him in the 5 minute time constraints. If the user was not able to complete the, it will be used as an indicator that we need to improve something in our design.

The post-interview consist of design, accessibility, and usefulness questions. Depending on the answer given, if multiple people answer negatively to the layout, propose a specific change, or address their concerns over accessibility. We will derive our changes based on their answers. When it comes to accessibility, a change must be made to be able to accommodate all people. When it comes to the Design, a single negative response will be considered but as a team we will consider we will decide a change needs to be made. However, if more than 2 people bring up the same problem we will discuss new implementation to improve our product.

5 References

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