Individual Project Check In #3-4  
For Class CS6750 (FA24)

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# Introduction

A screenshot of a computer

Description automatically generated Since its release, ChatGPT has been a helpful tool to help users find facts and information. Generative tools such as ChatGPT acts like an assistant that enhances any information that is inserted into the system while providing additional insight. During my interaction with the tool, the interface seems simple and easy to use. A person first creates an account and select one of the options: 1) the free, standard tool or 2) the premium, Plus option for a small fee.

Figure 1: The home page of ChatGPT interface (OpenAI, 2024)

Once a selection has been made, the user can type a prompt, and the tool will provide a response. Then a person can either continue on that thread or start a new thread by clicking the “new chat” symbol on the left corner of the window. While the process seems simple and user friendly, it seems like additional features such as a search tool and bookmark capabilities can enhance the experience for the user. This study will look into possible methods to create better user experience for a powerful tool.

**Need Finding**

While I have an idea of what can be added to improve the interface, I decided to conduct further research with surveys. The participants consist of 25-50 individuals who are members of the GA Fall 2024 Human Computer Interaction class and other people that have used ChatGPT. Participants were able to complete the surveys with the link to the survey that was provided either by email or on the Ed Stem discussion board. They were asked about their ChatGPT usage frequency, challenges, and preferred features that they would like to see in the interface. The survey questions along with the answers are can be found in [A.1 Survey Questions](http://peersurvey.cc.gatech.edu/s/d9b5fb75e9584e5289858cf7e6428b88).

## In addition to the survey and interviews, a heuristic evaluation will be con-ducted to identify any possible design problem of the current interface which can provide some insight on how to create new features for this tool.

## Need Finding Results

The survey revealed that 50 responses were collected whom fall into either the 18-29 or 30-39 age group, considered themselves as tech savvy, and uses ChatGPT daily or weekly.

Over 55% of users stated that they have used the AI tool at least one time and 30% of users stated that they used it daily. While 85% of the participants believe that the tool is beginner friendly, it’s also the same percentage that feels like the tool does lack certain capabilities such as searching through chats. Certain features such as search capabilities to retrieve information from past chats and organization tools to compartmentalized conversations were a few suggestions. Additional data from the survey can be found in [A.1 Survey Answers](https://docs.google.com/spreadsheets/d/1InJk4m8v9qNqOT4OCtYAok_RGr3aUcisUaXgzPjzKG4/edit?usp=sharing).

While conducting the heuristics evaluation, the three principles that stood out as areas to focus on were: 1) flexibility and efficiency of use, 2) minimalist design and 3) visibility of system status. A more detail heuristic evaluation can be viewed in [*A.2 Heuristic Evaluation Template*](https://docs.google.com/document/d/1mtdTcXSnBGnS0HWCbSxG0QBsttkU6d_5DjH6h8ysTKA/edit?usp=sharing) *.*

**Brainstorming**

After reviewing survey results and completing a heuristics evaluation, I gather the information to jot down (or in this case, typed) and brainstorm a few ideas on what a user would like to see while using ChatGPT. Based on the results, I realized that some users would like to see certain features such as bookmarks and the ability to search through previous chats. Some possible methods to search through chats are: 1) keyword search, 2) search through audio, 3) categorized search.

1. Keyword Search-People are accustomed to the traditional search and since ChatGPT is similar to Google search; a keyword search doesn’t have a steep learning curve which makes it easy for any user to understand how to use it.
2. Audio search-this is a great option for those who may have disabilities or have limitations to manually type a prompt into the tool.
3. Categorized search-categorized chats by topics to make it easier to locate conversations based on particular subjects. With the help with AI and analytics, it can group commonly searched items.
4. Bookmark features allow users to mark important sections of the chat that they can return to later.

**Initial Prototyping**

When designing the prototype, it’s best to continue with the theme. However, certain icons such as the microphone and a loading icon would be a great addition for the users. Those types of icons can provide feedback (loading icon indicates that the system is processing) and acts like a signifier (the microphone indicates that there’s an audio function).

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Description automatically generatedPrototype 1: Keyword Search

Figure 2: Low fidelity prototype of ChatGPT [keyword search](https://drive.google.com/file/d/1K61U7LfjRYWQdEPbarEl96rgPJVilvaQ/view?usp=sharing) (Diagram.net, 2024)

Keyword search feature allow users to type certain keywords that can be found within conversations.

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Description automatically generatedPrototype 2:  Audio Search

Figure 3: Low fidelity prototype of ChatGPT [audio search](https://drive.google.com/file/d/1knKHgy8hc9XvaK8PMHW8c4R_rMVIzzqO/view?usp=sharing) (Diagram.net, 2024)

Audio search allows users to say a few words in order to find past discussions. This can be helpful for those who may have disabilities or have limitations to manually type a prompt into the tool.

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Description automatically generatedPrototype 3: Categorized search

Figure4: Low fidelity prototype of ChatGPT [categorized search](https://drive.google.com/file/d/12Q-cfUnxB3r6hwk_Fppo4yZ72zjVNuEg/view?usp=sharing) (Diagram.net, 2024)

Categorized search-categorized chats by topics to make it easier to locate conversations based on particular subjects.

**Evaluation Plan**

After completing three low-fidelity prototypes, we are set to evaluate its usability and user preferences with participants interactions and recording quantitative measurements and qualitative feedback with the help of a survey.

Participants

The participants consist of 15-20 individuals who are members of the GA Fall 2024 Human Computer Interaction class and other people that have used ChatGPT. The participants were able to complete the surveys with the link to the survey that was provided either by email or on the Ed Stem discussion board and were offered participation credit when completed. The survey questions along with the answers are can be found in A.1.

The survey consists of questions that measures quantitative elements (such as usability ratings for each prototype, frequency of potential use for each prototype, and overall preference between the three options) and qualitative data (such as suggestions for improvement and feedback on usability issues).

**Evaluation results**

Quantitative results

When it comes to the ease of use, the keyword search received the highest rating, with an average score of “Somewhat Easy” to “Very Easy” amongst the participants. As for preference, the Keyword Search prototype was chosen by 72% of participants, with a chi-square test showing statistical significance (p<0.05).

Qualitative results

Participants stated that the keyword search most intuitive due to its simplicity and familiarity. Meanwhile, some preferred audio search due to speed but it can be problematic in public or in noisy areas. In addition to that, participants believed that categorized search can be great for structured searches; however, some wonder how the categories were defined.

Overall, the keyword search was both the most preferred and deemed easiest to use amongst the users, while audio and categorized search had a few features that be both beneficial and problematic.

**Second Iteration**

The evaluation results from the first iteration of the project have provided some areas of improvement. Feedback from the evaluation indicated that users are interested in enhancements such as multiple ways to conduct searches (i.e. keyword searches) and methods to retrieve certain information from previous discussions. In addition to that, making improvements to the interface such as including additional signifiers such as loading indicators, etc. to create a more seamless interaction with search features.

The next step is to create a medium prototype with the new features. The prototype will be created with the help of an interface design tool called Figma. Once the prototype has been completed, a survey would be distributed to gather insight on how users feel about the interface enhancements.

**A screenshot of a chat

Description automatically generatedFinal Prototype**

Figure 5: [Medium Fidelity Prototype](https://www.figma.com/proto/iqv84QzSbgaMg5At0PUQyq/Test2?node-id=64-5635&node-type=frame&t=iMHn145f6E6O3keo-1&scaling=scale-down&content-scaling=fixed&page-id=64%3A5634) of ChatGPT interface with additional features (Figma, 2024)

The final, medium fidelity prototype consists of a combination of a few features that were presented in the three low fidelity prototypes. Within this prototype, a search bar was added to help users search through chats. A bookmarking feature was included in order for users to bookmark a particular spot within a thread so a user can navigate through several series of chats. Those chats can be place in categories which can help organize certain conversations. The arrows icons were added to signified users that additional information is present, and the user should continue scrolling. The following video which can also be found in the Appendix as [*A.6 Video Prototype*](https://drive.google.com/file/d/1IWdW3nJ7eLF5-Aiv8Z1fEuD1xIYVKpNX/view?usp=sharing) goes into more details about the new features for the interface.

**Final Evaluation**

For the final evaluation, a survey has been distributed to several members of the GA Fall 2024 Human Computer Interaction class and other people that have used ChatGPT via email or through on the Ed Stem discussion board. They were asked about their ChatGPT usage frequency, challenges, and preferred features that are displayed in medium fidelity prototype. The survey questions along can be found in the Appendix as [A.5 Final Evaluation](https://forms.gle/r1CvxBW9TLRmZDz98).

**Final Evaluation Results**

Quantitative results

Forms response chart. Question title: How easy would this prototype be to use in practice?
(1-not easy, 2-somewhat easy, 3-neutral, 4-somewhat easy, 5-very easy). Number of responses: 21 responses.Over half (62%) of the participants believe that the medium fidelity prototype was somewhat easy and would prefer using the prototype over the current interface (quantitative results).

Figure 6: Survey participants rating the difficulty level of the prototype (Google, 2024)

Qualitative results

Participants stated that the new features can be helpful. However, it was also mentioned that some of the features should be designed differently than what is presented. For an example, a few people believe that the search box should be redesign because some users would probably get the search bar that is listed on top confused with prompt textbox. Others feel like the arrows that were presented in the prompt should not be included although the “down” arrow can be found on the current interface.

**References**

1. Nielsen Norman Group. (n.d.). *How to conduct a heuristic evaluation*.

<https://nngroup.com/articles/how-to-conduct-a-heuristic-evaluation/>

1. Draw.io. (n.d). *Draw.io.* <https://app.diagrams.net/>
2. Figma.com (n.d) Figma.com. <https://figma.com/>
3. OpenAI. (2024) *ChatGPT* (Oct 13 version) [Large Language Model]. <https://chatgpt.com/>

**Appendices**

A.1 Survey Questions

1. **Select your age:** Under 18**,** 18 – 29**,** 30 – 39**,** 40 – 49**,** 50 – 64**,** 65+
2. **Select your gender? Male, female, other, perfer not to say**
3. **How often do you use ChatGPT? Daily, Once a Week, 2 times a Week, 3 times a week, 4 or more times a week, never used it**
4. **Do you use the ChatGPT Plus or the standard version of ChatGPT? Standard, Plus, Both, Neither**
5. **Do you consider ChatGPT interface is easy to use for a beginner? Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree**
6. **Which method do you use when submitting a prompt? Click "new chat" for each prompt, Continuously use one chat thread, I've used a combination of both methods, Never used ChatGPT**
7. **Searching through past chat messages is easy. Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree**
8. **Any features that you would like to see in ChatGPT?**
9. **Any additional comments or suggestions about your experiences with ChatGPT.**

[**http://peersurvey.cc.gatech.edu/s/d9b5fb75e9584e5289858cf7e6428b88**](http://peersurvey.cc.gatech.edu/s/d9b5fb75e9584e5289858cf7e6428b88)

Survey Answers

[**https://docs.google.com/spreadsheets/d/1InJk4m8v9qNqOT4OCtYAok\_RGr3aUcisUaXgzPjzKG4/edit?usp=sharing**](https://docs.google.com/spreadsheets/d/1InJk4m8v9qNqOT4OCtYAok_RGr3aUcisUaXgzPjzKG4/edit?usp=sharing)

A.2 Heuristic Evaluation Template

[**https://docs.google.com/document/d/1mtdTcXSnBGnS0HWCbSxG0QBsttkU6d\_5DjH6h8ysTKA/edit?usp=sharing**](https://docs.google.com/document/d/1mtdTcXSnBGnS0HWCbSxG0QBsttkU6d_5DjH6h8ysTKA/edit?usp=sharing)

**A.3 Low Fidelity Prototypes**

1. Low fidelity prototype of ChatGPT keyword search

<https://drive.google.com/file/d/1K61U7LfjRYWQdEPbarEl96rgPJVilvaQ/view?usp=sharing>

1. Low fidelity prototype of ChatGPT audio search

<https://drive.google.com/file/d/1knKHgy8hc9XvaK8PMHW8c4R_rMVIzzqO/view?usp=sharing>

1. Low fidelity prototype of ChatGPT categorized search

<https://drive.google.com/file/d/12Q-cfUnxB3r6hwk_Fppo4yZ72zjVNuEg/view?usp=sharing>

**A.4 Evaluation Plan and Results**

1. Evaluation Plan Survey  
   <https://forms.gle/zCgZdhFB3cmB2qYK6>
2. Evaluation Results  
   <https://docs.google.com/spreadsheets/d/10lXSZ1AB_thBeelg6tZSwZMeuaWVnIfPep35pMHrSDY/edit?usp=sharing>
3. Evaluation Results-Charts  
   <https://docs.google.com/spreadsheets/d/16NNLUD4IjKAL6P7-Tx2hyeoqZLn2W6f4sQpyMHHqSms/edit?usp=sharing>
4. Medium fidelity Prototype  
   <https://www.figma.com/proto/iqv84QzSbgaMg5At0PUQyq/Test2?node-id=64-5635&node-type=frame&t=iMHn145f6E6O3keo-1&scaling=scale-down&content-scaling=fixed&page-id=64%3A5634>

A.5 Final Evaluation

1. **Final Evaluation Plan**

<https://forms.gle/r1CvxBW9TLRmZDz98>

1. **Final Evaluation Plan Results**

<https://docs.google.com/spreadsheets/d/13CKBJCiv7fmwy7MOHSURY8MYpElWlxJ1B0npSuOnVTc/edit?usp=sharing>

A.6 Video Prototype

<https://drive.google.com/file/d/1IWdW3nJ7eLF5-Aiv8Z1fEuD1xIYVKpNX/view?usp=sharing>