Title: An Application that Drafts Summary Emails with the Help of ChatGPT

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## Project Background

In recent years, the field of Artificial Intelligence (AI) has witnessed remarkable advancements, revolutionizing various industries and sectors and ChatGPT is one of the most significant breakthroughs in this field. With the advent of ChatGPT, a multitude of new applications with enhanced functionalities can be developed by simple integration. Seeing the potential to enhance productivity significantly, I aim to create an intuitive and user-friendly interface that empowers individuals to draft high-quality summary emails effortlessly.

Drafting emails can be time-consuming, often requiring careful consideration of content and formatting. Additionally, the frustration of losing work due to unexpected crashes or technical issues can compound the challenges of email composition. These problems can lead to wasted time, decreased productivity, and a sense of frustration. However, with the help of the application I am going to develop, these issues can be effectively addressed. By utilizing ChatGPT's language generation capabilities, the application offers a reliable and efficient solution for drafting email summaries. Users can now effortlessly distill complex information into concise summaries, saving valuable time and ensuring key messages are effectively communicated. Furthermore, the application is designed with data review features, minimizing the risk of lost work. Users can now draft emails with confidence, knowing that their progress is safeguarded. With this application, individuals can overcome the challenges of email composition, enhance productivity, and regain peace of mind when it comes to their email-related tasks.

According to Chui et al. (2012), workers allocate approximately 28% of their work time to managing emails on average. Upon the successful development and implementation of the application, it is projected that workers can experience a substantial improvement in productivity, estimated to be around 15% based on the previous study. Meanwhile, the application not only tackles the challenges encountered by workers but also extends its benefits to general users. This inclusive approach enables users to save valuable time when composing emails, whether it be for personal communication with friends or other purposes.

## Project Objective

As stated in the project background, the primary aim is to augment worker productivity by an estimated 15%, while concurrently addressing the challenges of general users and ensuring an optimal user experience.

The principal objective of the project is to achieve a significant improvement in worker productivity. By implementing innovative solutions and leveraging advanced technologies, the project aims to streamline workflows, automate repetitive tasks, and optimize resource utilization. This productivity enhancement will empower workers to finish their tasks more efficiently, save time, and allocate their efforts to higher-value activities.

In addition to boosting worker productivity, the project also focuses on addressing the challenges faced by general users. By understanding the pain points and user requirements, the objective is to develop user-friendly features and functionalities that cater to the needs of a diverse user base. This includes simplifying email composition, providing intuitive interfaces, and offering seamless integration with existing email platforms.

Furthermore, ensuring a positive user experience is a critical aspect of the project objective. By conducting user research, usability testing, and iterative design processes, the aim is to create an application that is intuitive, visually appealing, and easy to navigate. The objective is to enhance user satisfaction, promote adoption, and deliver a seamless and pleasant experience to workers and general users.

By achieving these objectives, the project aims to transform the way workers and general users interact with email communication, ultimately improving productivity, efficiency, and user satisfaction.

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## Project Methodology

The deliverable for this project will be a Windows application developed using Python's built-in UI and backend processing capabilities. Upon installation and clicking the start button, the application will discreetly hide in the toolbar, allowing users to freely utilize other functions while it runs in the background. The application will automatically capture screenshots at regular intervals, storing them in a local database. Optical Character Recognition (OCR) technologies will be employed to convert the screenshots into text. The extracted text will then be categorized into various types such as recipient, sender, and content. Along with the text, the screenshot, timestamp information, etc. will be stored in the database.

Users will have the flexibility to review the captured screenshots at their convenience. When they wish to generate a draft of a summary email, they can access a designated button that triggers a pop-up window for inputting the recipient names and extra information. The application will search for relevant text stored in the database and, along with additional commands, will send the collected information to the ChatGPT API. The response generated by ChatGPT will be displayed on the screen, assisting users in composing the summary email based on the captured information and AI-generated insights.

This project presents several challenges that need to be addressed. Firstly, the accuracy of OCR technologies is crucial for optimal application performance. Issues such as low-resolution images and complex screenshot layouts can impact the reliability of text extraction. Secondly, classifying the extracted text into recipient, sender, content, and other categories poses a significant challenge, as it directly influences the effectiveness of the subsequent search algorithm. Thirdly, the performance of ChatGPT might be unpredictable, potentially resulting in irrelevant or delayed responses, which adversely affects the user experience and hinders the resolution of the specified problem.

To overcome these challenges, a careful algorithm design is essential to mitigate their impact. It is important to inform users about the potential instability of the results and provide them with guidance on methods to enhance the outcomes. Additionally, conducting extensive testing, refining OCR techniques, implementing robust text classification algorithms, and closely monitoring the performance of ChatGPT can contribute to improving overall reliability and user satisfaction.

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## Project Schedule and Milestones

| **Date** | **Task** |
| --- | --- |
| Sep 2023 | Research and Analysis |
| 1 Oct 2023  | Detail Project Plan and Project Web Page Setup |
| Early Oct 2023 | Framework, Algorithm, and UIUX Design |
| Late Oct 2023 | Frontend Development |
| Early Nov 2023 | Implement Screenshot Function and OCR Function |
| Late Nov 2023 | Implement Data-Classifying Function and Data-Searching Function |
| Early Dec 2023 | Implement Data-Feeding Function to ChatGPT and Result-Displaying Function |
| Late Dec 2023 | Testing and Debug The Application, Draft the PowerPoint for Presentation |
| 8-12 Jan 2024 | First Presentation |
| 21 Jan 2024 | Preliminary Implementation and Detailed Interim Report |
| 15-19 Apr 2024 | Final Presentation |
| 23 Apr 2024 | Finalized Tested Implementation and Final Report  |
| 26 Apr 2024 | Project Exhibition |

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## Reference

Chui, M., Manyika, J., Bughin, J., Dobbs, R., Roxburgh, C., Sarrazin, H., Sands, G., &

Westergren, M. (2012). The social economy: Unlocking value and productivity

through social technologies. McKinsey. Retrieved from

<https://www.mckinsey.com/industries/technology-media-and-telecommunications/our->

insights/the-social-economy