**Zooey - Personal Assistant**

John Aromando, Diego Holguin

**1. Introduction**

Zooey is designed to improve workflow on a research oriented topic. It will be able to locate any program on your computer, open it, and then close it when specified. Along with this, users will be able to access a particular search engine that will focus specifically on research articles relevant to the search term or just general searches. Also, if you're tired of all that typing or occupied on another computer, Zooey will be able to recognize your voice and use it as input. Zooey will feature the ability to turn off and on lights as well as sending commands to any computer on the network. All this of course comes with the ability to do basic to advance mathematics, the ability to chat locally and globally, and a manual to help understand how Zooey operates and can be utilized to the fullest.

The social and ethical impacts range in multiple directions. For one, a fully functional program could redefine how an individual goes about their routine. If Zooey can do many tasks for a user, it could provide more freedom for the individual. Another impact could be on the area of research. A new era of technology is currently being rushed in to aid humans. A fully functional and advanced personal assistant can promote these successes.

The importance of this project is working towards developing a personal assistant that works with both Windows and Mac operating systems in a helpful fashion. We wish to make it very interactive and able to do many tasks throughout the household. This is the novelty of the program. No personal assistant on the market works well on PC's. They are either very inefficient, interfere with the users privacy or only work well on other devices like the phone. The ability for it to do household tasks is also a unique feature.

**2. Literary Summary**

In order to back the claims listed above, let's take a look at a variety of reviews on Siri and Cortana, the two most widely used virtual assistants.

**Siri**

After reading a variety of reviews on macOS Sierra, the update that implemented Siri on the Mac desktop, the most common theme surrounding Siri's implementation seems to be its limited ability to help. First off, Siri requires the user to initiate contact with Siri by button press or keyboard shortcut meaning the user must be at the computer to start talking to Siri. The main usage of voice recognition in Zooey is the ability to not have to be at the computer in order to use any part of the assistant making it incredibly hands free.

More so, many reviews featured similar statements such as "limitations become more obvious" (Engadget) with usage in Siri and "If you say the wrong thing, you will very quickly discover the edges of its abilities" (Six Colors). One review provided an example of these limitations by saying Siri would only give broad feedback instead of including important attributes like time and location. Another review simply said that Siri's implementation into the Mac desktop was basically like adding voice recognition to Spotlight giving it no new features and that the file search for Siri was not working. The iPhone's version of Siri offers a lot more than this and takes more advantage of its environment.

**Cortana**

Cortana seems to have problems with using the computer's memory and CPU which will trigger it to simply look up whatever you say on Bing. This completely defeats the purpose of a virtual assistant and is a bad design. That is nothing compared to the number one complaint about Cortana though. Cortana, just as Siri does, collects data from the user and records your each and every word. While that impacts your privacy as it stands, Windows takes it a step further and shares your data to other companies. This contributes to the oddly specific ads that pop up after you just researched the same product an hour before. These strategies are not new, Google does this as well, what takes this to another level is that you cannot turn off Cortana. A reviewer specified that he was worried that Cortana would be listening when it doesn't need to be. This alone would make a user not want to use the personal assistant.

**Both**

Siri nor Cortana have the ability to directly interact with other household devices and items. Only third party apps have taken advantage of these features. On the Mac desktop, Siri does not allow for it to be used by these third parties apps making it even more useless.

**3. Background**

In order to complete this project, we must learn a few things about working with Arduino's and sending messages across a network to make something occur on a different device. The networking does not seem beyond the chat room we have implemented and should not require much more learning. The Arduino is a different story and will require some time to research. This research will including work with a breadboard which will allow the Arduino to hook up to a lamp. We will also need to figure out how to program the Arduino to send the right signals. Lastly, we will need to know what type of lamps we can use with the breadboard and how to hook up to it.

|  |  |
| --- | --- |
| **Task:** | **Finish By:** |
| Turning on and off lights | December |
| Finish file search functions | January |
| Send messages across devices | February |
| Bugs | April |

**4. Proposed Budget**

|  |  |  |
| --- | --- | --- |
| **Item:** | **Price:** | **Justification:** |
| Arduino Yun | $80.99 | Necessary for Zooey to turn on and off lights. |

**5. Project Plan**

|  |  |
| --- | --- |
| **Milestone:** | **Accomplished:** |
| File search algorithm | Summer/Fall 2015 |
| Open/Close file | Winter 2015 |
| Voice Recognition | Summer 2016 |
| Switch to Python | Fall 2016 |
| Google Search | Fall 2016 |
| Chat Room | Fall 2016 |
| Mathematical Calculations | Fall 2016 |
| Text to Speech | Fall 2016 |
| Voice Recognition with Spotify | Fall 2016 |
| Scheduler/Calendar | Fall 2016 |
| Bring Window to Foreground/Minimize | Fall 2016 |
| Voice Recognition with Lamps (On/Off) | Winter 2016 |
| Networking All Devices on Network | Winter 2016 |
| Finish File Search Functions | Winter 2016 |
| Bugs | Winter/Spring 2016 |

**6. References**

**Siri:**

https://www.engadget.com/2016/09/20/macos-sierra-review/

https://sixcolors.com/post/2016/09/sierra-review/

http://appletoolbox.com/2016/07/macos-sierra-features-review/#Siri

**Cortana:**

https://www.engadget.com/2015/07/30/cortana-windows-10/

http://www.computerworld.com/article/3106863/microsoft-windows/cortana-the-spy-in-windows-10.html

http://www.slate.com/articles/technology/bitwise/2015/08/windows\_10\_privacy\_problems\_here\_s\_how\_bad\_they\_are\_and\_how\_to\_plug\_them.html