Hands-free Personal Assistant

A Synopsis submitted

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CANDIDATES DECLARATION

We hereby certify that the work, which is being presented in the project synopsis, entitled **Hands-free – your own personal assistant**, in partial fulfillment of the requirement for the award of the Degree of **Bachelor of Technology** and submitted to the institution is an authentic record of our own work carried out during the period *Sept-2017* to May-*2018* under the supervision of Mr. B.K. Gupta

Date: Signature of the Candidates

This is to certify that the above statement made by the candidate is correct to the best of my knowledge.

Date: Signature of the Supervisor

ABSTRACT

Hands-free, the desktop application that enables the users to interact with devices in a more intuitive way using voice. Examples of these skills include the ability to play music, answer general questions, set an alarm or timer and more. Hands-free is built using Python . With Hand-free, developers can have new voice experiences and take advantage of the following benefits:

- Set an alarm
- Provide smart replies to general queries
- Web based search
- Personal reminders - to keep track of important tasks
- Basic Windows functionalities using just your voice

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Chapter 1- INTRODUCTION

1.1 OVERVIEW

Hands-free is an intelligent personal assistant developed by us and which runs on Windows OS. The application uses Microsoft's speech recognition API to answer a user's questions on a variety of topics, make recommendations and operate the user's device.

Convert spoken audio to text. The application can be directed to turn on and recognize audio coming from the microphone in real-time, recognize audio coming from a different real-time audio source, or to recognize audio from within a file.

The application features smart replies to specific queries from the user.

The normal queries include basic windows functionalities such as opening websites, copy, paste, select all, close window, open explorer etc.

For the spoken queries followed by the keyword "search", Hands-free will make the use of Google API and provide the most appropriate answer for the query. The search will include image based search as well as normal search.

For spoken queries followed by "answer", Hands-freewill make the use of Wolfram Alpha API and provide the most appropriate answer. Wolfram Alpha is used to make straight up to point answers.

We will create a database for storing reminders and alarms. Hands-free will record reminders to the database while creation and then access it at the desired time to remind about the specific note.

The reminders will be of two types- Normal text reminders and voice reminders.

The user interface will constitute of an interactive UI which will appease the user.

Technology Used

We use Python programming language in our project. For speech recognition we have used Microsoft's Speech Recognition API. The application works best under a strong internet connection.

Technical Terms

Speech Recognition Engine - Speech Recognition Engines ("SRE"s) are made up of the following components: Language Model or Grammar - Language Models contain a very large list of words and their probability of occurrence in a given sequence. They are used in dictation applications.

Speech Synthesizer - Speech synthesis is the artificial production of human speech. A computer system used for this purpose is called a speech computer or speech synthesizer, and can be implemented in software or hardware products.

1.2 PROBLEM STATEMENT

- We want all of our software releases to go to production seamlessly, without defects,for the creation of a software which interacts with the user and lessens the time spent on doing little day to day tasks. The development has to be managed so that every team member is aware and informed of the outcomes and status.

- The time spent in doing day to day tasks on a desktop constitutes of certain steps to be followed which constitute of input to be given from keyboard or mouse which are comparatively slow than our speech as the input . For each small task there is a lot of wastage of time doing steps which could have been prevented. The time can easily be saved by using user's speech to instruct the computer what to do.

- We will create an application that will respond to users voice input and shorten day to day tasks.

1.3 MOTIVATION

Our motivation for creating this application are modern AIs like Siri, Cortana and Google Now. Siri - Siri is the name of Apple's personal digital assistant. It's basically voice control that talks back to you, that understands relationships and context, and with a personality straight out of Pixar.

Cortana - Cortana is an intelligent personal assistant created by Microsoft for Windows 10, Windows 10 Mobile, Windows Phone 8.1 (where it now supersedes Bing Mobile),Microsoft Band, Xbox One, iOS and Android.

Google Now - Google Now is an intelligent personal assistant developed by Google. Google Now, including Now cards, voice search and commands, is available in the Google-apps for Android and iOS.

Chapter 2- FEASIBILITY STUDY

This study aims to paint a clear enough image of the potential challenges and benefits of the project so we are able to make a decision about the next steps. We therefore try to present answers to the following questions in this report:

1. Overall Application Feasibility
2. Is it possible to develop the application?
3. Scope of the application in the market
4. Determining whether the application idea is a new concept or an old concept
5. High Competition and Low competition to this project
6. Will the project be economically feasible?

IDENTIFICATION AND EXPLORATION OF BUSINESS SCENARIOS

Throughout the software industry there is a wide requirement of smart virtual assistants. With technology getting smarter**.** From well-known voice-powered AIs such as Apple's Siri to upstarts like Viv, the goal is to quicken the actions you already take on your phone and other devices. As more than 1.25 billion PCs use Windows today, the scope of such an application as a product is huge.

IS IT FEASIBLE TO DEVELOP THE APPLICATION?

With Speech Recognition on Python with the System.Speech library it is feasible to create windows applications that might very well respond to sound.

COMPETETION

- High competition from AI's like Cortana by Microsoft, Google Now by Google and Siri by Apple
- Low competition apps like Tazti and TalkTyper.

WILL THE PROJECT BE ECONOMICALLY FEASIBLE?

Economic evaluation is a vital part of investment appraisal, dealing with factors that can be quantified, measured, and compared in monetary terms . The results of an economic evaluation are considered with other aspects to make the project investment decision as the proper investment appraisal helps to ensure that the right project is undertaken in a manner that gives it the best chances of success. As much of the software required for the development of this project is free, the project is very much feasible economically.

OVERALL APPEAL & TARGET AUDIENCE

The idea of an application that can talk to you and help you manage your daily tasks is very appealing and exciting. The target audience for this app are normal everyday users plus it will be beneficial for people with disabilities.

DISTINCTION FROM COMPETITORS

We stand out against our competetitors specifically with the voice reminders feature. This feature is highly appealing. As an example if a user wants to convey a message to his/her family member but they have to leave their home, so they can record a message and set a time to play it so that the other person gets the message in time. This feature makes us stand out against our competetitors.

We also have a catchy name for our application which is short and easy to remember.

Chapter 3- SYSTEM REQUIREMENTS

3.1 FUNCTIONAL REQUIREMENTS

1. Reminders

User can set reminders for doing day to day tasks like taking medicine on time, setting time for important meetings, for remembering birthdays and marriage anniversary dates, for setting alarm,etc.

2. Basic Windows Functions

User can also perform basic windows function like opening, closing any application such as MS Word , MS Excel,Paint , Word-pad , Notepad , Camera etc.

We can also perform power operations like shut down and sleep.

3. Music

User can also play song stored in his/her computer/laptop.

4. Voice Recording/Reminders

User can record his/her voice and use it as a reminder to play it at a specific time and can be used as a voice note or just to record a specific sound.

3.2 NON-FUNCTIONAL REQUIREMENTS

1. Portable.-Web Application so portable across any platform.
2. Accessibility.:-Can be accessible only by single user.
3. Reliability.-Perform well in any situation.
4. Performance.-Provides quick responses for any action.
5. Availability:-Available all the time when system is on.

Chapter 4- FACILITIES REQUIRED FOR THE PROPOSED WORK

Hardware required for the development of the project:

- A personal computer
- RAM – 1 GB or more
- Atleast 250 MB hard disk space for installation
- A microphone
- Speakers
- An active Internet Connection

Software required for the development of the project

- PyCharm Community Edition 2017
- Python 2.7 and above
- A Windows OS – Windows 7, Vista, Windows 8, Windows 8.1 or Windows 10

Chapter 5- INNOVATIVENESS AND USEFULNESS

A simple, straightforward reminder with a human touch to remind you of your unavoidable chores such as saying “Happy birthday to your loving wife”.

Simply speak your personal message, set the time and date, be reminded in your voice.It works as your personal assistant and ensures that you remember everything and forget nothing with your own voice 'to-do' list.

Simple, easy and quick usable sound recorder and reminder. Do you need to make quick note and you haven't a pencil and a paper? Are you doing something important and it is necessary to record something important? And do you want to remind it later? Recalled that you need to go shopping? Do not want to drag a List? Record yourself and set a reminder to the time you shop. The app will remind you what to buy.You travel with your child and you do not want to forget? Record at the beginning of the trip and set a reminder for an hour you are supposed to arrive. Our Hands-free will help you!

Basic characteristics:

- Quick and easy recording sounds and voice memos (notes) and playing it back
- You can set number of time message you can repeat.
- Simple and friendly operating (handling)
- Renaming your records
- Multiple reminds supported clearly record-list and remind-list
- Adding picture or photo to the record

Chapter 6- BIBLIOGRAPHY

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