Vision Statement

Team name: Team Voice**++**
Project name: InvocaBot (subject to change)
Members: Petros Khachatrian (lead), Chris Atanasian, Julio Garcia, Belsin Barkhosir, Sheng Zheng

Background

In the Information Age, technology has made discovering knowledge possible by a touch of the fingertips. But what if we want to access this information by just talking? Although we live in a technologically advanced society, there are limitations that we have yet to overcome. One of these limitations can be found in voice recognition products, such as Siri or Google Now. While these applications are modern and successful, they lack a certain capability. They do not perpetually listen for queries at any given point in time, let alone from the user during phone calls. This is where InvocaBot comes in.

Project Description

InvocaBot is a hands-free agent for mobile devices that actively listens for a keyphrase made during a phone call. Upon a hearing a keyphrase, it executes the given voice command. It receives the user's voice commands through Google's voice-recognition API and our own software written in JRuby. InvocaBot will be able to aid the user by implementing the use of various services provided by the mobile device it is installed on. A key feature of InvocaBot is that it is always listening; that is, there is no need to activate it through a keypress. This makes the base voice-command features of your phone extra helpful and streamlines your phone services while being on a call.

Motivation

Voice recognition capabilities have been improving with the advent of smartphones. With these improvements, we have seen ways to utilize smartphones with merely voice commands. As of now, the closest existing solution for hands-free access to a phone's services is Apple's Siri. Siri is a personal assistant that needs to be put into a "listening mode" via the home button in order for it to start taking voice commands. However, Siri's drawback is that it cannot be used in the middle of a phone conversation. InvocaBot solves this by doing just that: giving the user access to their phone's services in the middle of a phone call, without even a push of the button.

Uses/Functionality

The uses of InvocaBot are plentiful. It is similar to having a personal assistant during a phone call that will do whatever its user commands. This basically will be anything Siri can do, including, but not limited to, taking a note, recording audio, setting a reminder, retrieving directions to a location, conducting a Google search, and more.

A simple use case would be if the user were to say: “InvocaBot! Take a note.” The keyword “InvocaBot” triggers the agent to start paying attention to what the user says next. Whatever comes after the trigger will be treated as a command and executed. Then the user can continue with his/her conversation normally.

The idea would be that the commands could range from being as simple as setting an alarm, to as elaborate as pulling movie-times off the internet.

Process Methodology

Our group will run our processes via the Scrum methodology. At the beginning of each sprint cycle, we will have a backlog meeting to determine the features/tasks that we wish to complete in the sprint cycle. In order to do so, we will rank the tasks based on importance (and also time estimate), and then distribute the tasks amongst our team members. For our first sprint, we will attempt assign group members the tasks that they feel most comfortable with. We will analyze our burn-down chart at the end of the sprint, and if we are ahead of schedule, we may take on tasks that we are not familiar with in order to expand our understanding of different concept.

After the tasks have been distributed, we will ensure that our project is on track by having a daily standup meeting over Google Hangouts. Our standup meetings will consist of having each team member discuss the progress that they have made on their tasks, any problems encountered, as well as what the focus will be for the day. Based on the tasks assigned from the backlog meeting, we will also keep track of tasks that each team member has not started, tasks that are in progress, and tasks that are completed. This is known as the Agile Development Method.

At the end of the cycle, we will have a sprint review meeting so that we can discuss what went well, what didn’t go well, and what we would like to improve for the next sprint cycle. This process will aid in maximizing our throughput and time efficiency.

Goal

The goal of our project is to allow for easier multitasking during a phone call over a cell phone. The existing personal assistant, Siri, which exists on iOS devices does not support this functionality. Our project will enable this functionality, which will allow the user to access a plethora of their smartphone’s features. Although this may sound simple, our group needs to identify a way to implement this feature without chewing up the user’s smartphone battery. Our mentors at Invoca are experienced with phone-conversation software, so with some thought and deliberation, this goal can be achieved.