CS317 Envera Virtual Agent Requirements
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Executive summary:

We will be using Amazon Web Services in order to develop an automated virtual agent, for Envera Health, to work inside of their phone calls. The virtual agent will use voice recognition software to translate what the caller is asking to a readable text, and then use machine learning algorithms to understand the specific need of the caller. The virtual agent will use text-to-speech software to finally answer the caller's query and help the caller with any other needs. This automated agent will be able to schedule appointments with doctors as well as answer simple health questions.

Introduction:

Phone calls having menus that require callers to use can't serve the needs of every caller while having actual people to answer caller's questions costs money and creates waiting lines on phone calls. Our purpose is to remove as much human interaction as we can from people calling about health services without sacrificing the flexibility of a human. Envera Health is a company that takes calls for doctors and schedules appointments for said doctors. Our scope is to replace as much of a human caller with an automated agent that can answer questions and schedule appointments.

Discussion:

We plan to do this by creating a program that will use voice recognition software to translate what the caller is saying to a readable text. Then we will use machine learning to analyze that text and understand what the caller wants. Finally a text to speech device will

answer the caller's question or walk them through creating an appointment. Some of the questions could include "What doctors are in my area?" or "What times is doctor X available?".

Resources

One important factor in having a successful project is having a mentor. The mentor will help guide us to the right direction in completing the project. The mentor has expectations that we have to achieve in a certain time frame. To achieve the expectation, we have to keep in touch with our mentor via email and have everyone meet with the mentor every week. During the meeting, we will discuss what has to be done, time constraints, and how we will go about completing these use cases.

Having a computer with a text editor is essential to the success of the project. One facility that we may need is a computer lab, in the event that we do not have access to our computer. We also need an account with Amazon Web Service. With the access of a computer, we are able to set up an account with Amazon Web Service and distribute the account information with the teammates. The data that is needed is a database of doctors' availability and location(s) in order to effectively schedule appointments. A bot is needed, so that we can set up a conversation flow. Amazon Lex provides a bot and we are able to construct a conversation flow. To test the conversation flow, we are going to need a phone. With the phone we are able to call the Amazon call center and it will allow us to test the conversation flow that we created.

Cost:

We will be developing the prototype with Amazon Web Services. To keep the expenses to a minimum, we will be using a free trial. The free trial expires in 12 months, which is enough time to develop and finish a prototype. If the trial of Amazon Web Services do not provide all of the services or storage that is needed, we will be paying for more features and storage in Amazon

Web Services. The services that we are using that are not free are Amazon Relational Database Service which cost depending on which type of database we are using and how long it will be in the cloud. Another service is Amazon Connect and the price depends on how many times we are calling their number and how long we are connected with the number. Amazon offers a pay-as-you-go method where it allows the user to only pay for what is used. This method helps us remain agile and helps us adapt to any changes due to project's need without overspending.

The approach we are using in completing the project is agile development. Everyone is going to be assigned a different task every week to complete. By the end of the week, we are going to meet up and discuss what we have finished. Our mentor will also be helping us stay on track and review what we have done as a group. By the end of fall semester, we are expecting to have a working prototype to demonstrate.

Conclusion:

We want to make calling about health services more efficient and cost-effective. In order to obtain this goal, we are going to program an automated bot to handle phone calls in a more flexible manner than menu-based call bots would be able to. This virtual agent should be able to schedule appointments and answer questions just by listening to the caller's voice and responding accordingly. We should be able to achieve this by using a combination of Amazon Web Services and machine learning algorithms.