

HciBot

Project Work Written Report

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Group Members:

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Our project, HciBot is a chatbot app that can answer some questions about Hwa Chong Institution.(e.g. Who founded HCI?)

We did this because we found out from open houses that Primary school students, when they come into Hwa Chong in Secondary One, do not know much about the school. Hence, we want to design a digital talking robot to answer some questions about the school so that the new Secondary 1 students can get to know the school better.

This can be used at open houses or the beginning of next year, which is the year Hwa Chong celebrates its 100th anniversary. This project can help parents and primary 6 students who are new to Hwa Chong. This also helps to lighten the load on councilors who act as ushers in big events like open house.

Many parents who are new to the school are also puzzled on some information about the school and some directories. Since 2 of our group members are Councillors/ICIT, they were supposed to help out with the if they had any queries about the school. Our solution to this problem is a smart bot that can answer the parents queries about the school. Not only would this allow the parents to get to know the school better, it also helps to make the lives of some of the councillors easier who are in charged of showing the parents around the school. Chatbots are very important in our daily lives as they make our lives more convenient as asking a question would take less time than surfing the internet for the answer to the question, for instance.

“I do not fear computers, I fear the lack of them” ~ Isaac Asimov

This means that artificial intelligence is becoming more important in our lives. As technology advances, the need of artificial intelligence increases. Artificial intelligence is able to do things humans cannot, for example doing calculations for big numbers. This is will be needed more in the future. Also, artificial intelligence can solve a lot of problems faster and do things more efficiently than simple computer programmes.

The purpose of a chatbot is to connect artificial intelligence and customer services to help people. It is also a computer program designed to simulate conversation with human users, especially over the Internet. In this case, it is to help parents and primary 6 students who are new to Hwa Chong to find out more about Hwa Chong.

Tools used: Swift 4 (Programming Language) and Xcode (Programming App)

We used Swift to program voice recognition as it is easy to learn compared to other languages. We also found it an easier programming language to use.

Members role and job distributions:

Jaden: Coding of the smartbot

Joseph: Coding of the smartbot

Zhi Xin: Aesthetics of the robot

Keane: Coding of the smartbot and aesthetics

d. Project timeline

Deadline	Activity
T2W1	Reading up and completing Literature Review
T2W2	Preparing for Proposal Evaluation.
T2W3	Proposal Evaluation and reading up (Continue)
T2W4- T2W10	Doing Swift coding and testing of code

June Holidays	(1) Testing of code and ways to improve the robot (2) Writing of Project Report
T3W1 & T3W2	(1) Preparation for Mid-Term Evaluation. (2) Writing of Project Report.
T3W3	Mid-Term Evaluation

T3W4-T3W7	(1) Final Testing of robot. (2) Writing and Finalising of Written Report (3) Preparation for Final Evaluation
T3W8	Final Evaluation

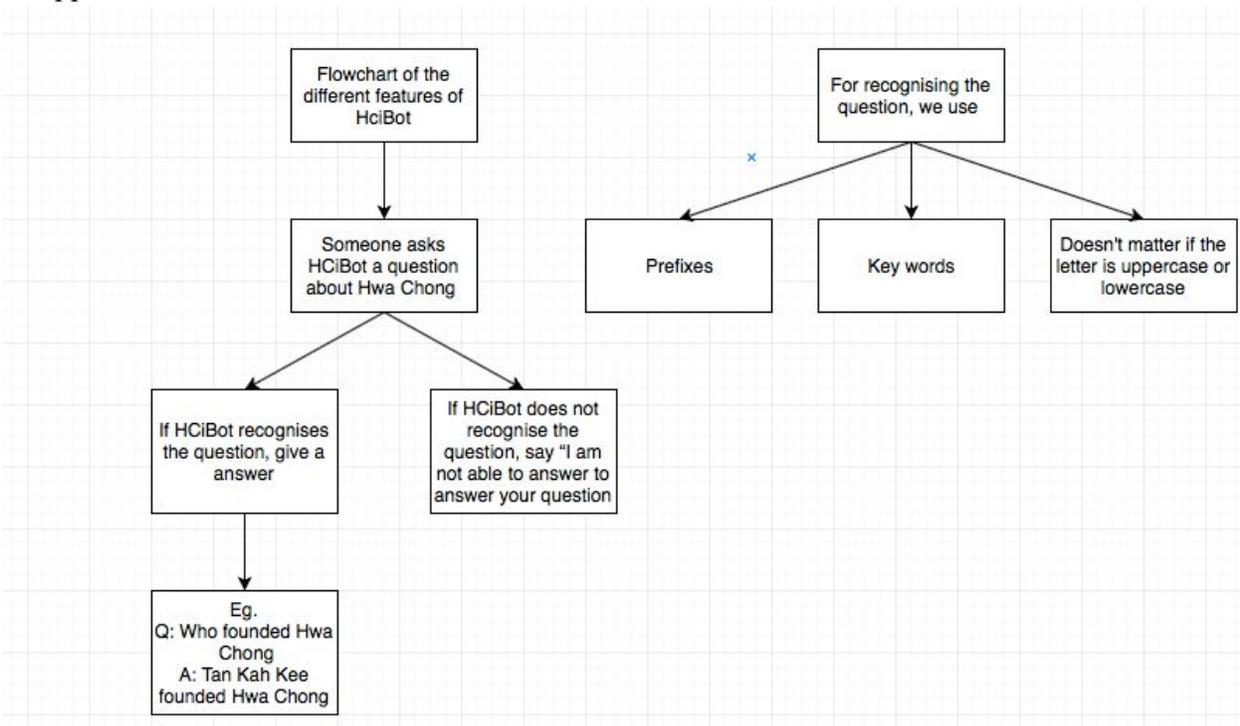
Flowchart:

Someone asks HCiBot a question about Hwa Chong

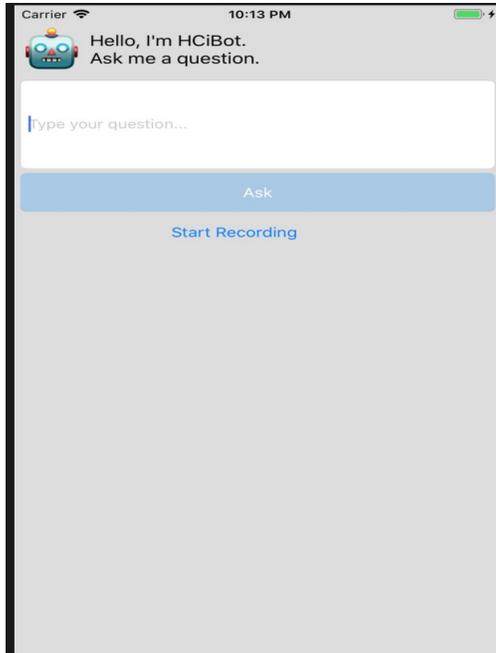
If HCiBot recognises the question, give a answer

If HCiBot does not recognise the question, say "I am not able to answer your question

For recognising the question, we use prefixes and key words. Also, it doesn't matter if the letter is uppercase or lowercase.



Screenshot of app screen (all features are included in the screen):



The person can either type their question into the box that says “Type your question...” or he can use the start recording button to say his question. He can also use both. The ask button is to ask the question and the bot will either answer “I do not understand your question”, if the question is not in the code or answer with an answer.

Possible extensions:

We can extend the project by setting up a database where it can store questions the student asked whenever the robot cannot answer a question. Then we can see the questions stored and know what kind of questions students ask, so we can try to answer the questions. This helps the robot to be able to answer the questions of more students and be more helpful.

Along the way, we faced many difficulties in the process of coding. For example, when we try to run the simulator, many errors popped up, which were difficult to resolve, especially when joining speech recognition with the question answerer together. We needed to delete and change many different lines of codes before the simulator could run successfully. For example, when transferring the code from one project to another, an error or two might pop up, which would take quite a while to solve.

We learnt along the way that coding is a difficult process, where we can face many unexpected errors. However, with perseverance, these problems can be solved. We also learnt that we needed to work together in other to resolve all of these errors.

Resources:

N, J. (n.d.). A Beginner's Guide to SiriKit in Swift. Retrieved July 29, 2018, from <https://www.appcoda.com/sirikit-introduction/>

Edrisian, S. (n.d.). Building a Speech-to-Text App Using Speech Framework in iOS 10.

Retrieved July 29, 2018, from <https://www.appcoda.com/siri-speech-framework/>

(2017, September 06). 13 Question Bot - Intro to App Development with Swift. Retrieved July 29, 2018, from <https://www.youtube.com/watch?v=vfm5hFeweNw>

The End