# Overview

The purpose of this project is to improve a chatbot that simulates an online conversation one might have with Batman.

It is enhanced using 3 APIs, described below.

# Using this code

Import all files into Eclipse, and run BatterBotDriver.java (simply loading the project should be sufficient). There should be 8 packages in total, including the default (where the top-level files are). The GUI will start; however, the console should be viewed at the same time- it is an easy way to ensure that the user and bot are ‘in sync’- that is to say, the speech-to-text part of this program will print “I’m listening” when it is gathering microphone input. It will also notify when it is finished listening, and will also ask the user for manual input if Google fails to respond properly.

The speech-to-text feature only overrides the entered text when the API returns something. Otherwise, the program works like it did in Assignment 3; simply press ‘enter’ to proceed with the conversation.

The other readme file contains instructions to invoke the various APIs- “I have a question” and “Bye/Quit” for the YAnswers API, and certain specific keywords for the Wikipedia API (such as “Joker”).

My GitHub repository can be found here: <https://github.com/bbelanger7/threeten/>

# New features

1. Wikipedia search.

The bot already has a list of villains and heroes. When the user brings one up in the conversation, the bot will search Wikipedia for more in-depth information than was previously possible.

Sample:

User: Who is the Joker

Bot: The Joker is a fictional character, a comic book supervillain appearing in DC Comics publications. The character was created by Jerry Robinson, Bill Finger and Bob Kane, and first appeared in Batman #1 (Spring 1940). Credit for the character's creation is disputed; Kane and Robinson claimed responsibility for the Joker's design, acknowledging Finger's writing contribution. Although the Joker was planned to be killed off during his initial appearance, he was spared by editorial intervention and became the archenemy of superhero Batman.

In his comic-book appearances, the Joker is portrayed as a criminal mastermind. Introduced as a psychopath with a warped, sadistic sense of humor, the character became a goofy prankster in the late 1950s in response to Comics Code Authority regulation before returning to his darker roots during the early 1970s. As Batman's nemesis, the Joker has been part of many of the superhero's defining stories (including the paralysis of Batman's ally, Batgirl, and the murder of Jason Todd, Batman's ward and the second Robin). The Joker has a number of origin stories during his seven decades in publication. The most common has him falling into a tank of chemical waste which bleaches his skin white, turns his hair green and his lips bright red; the resulting disfigurement drives him insane. The antithesis of Batman, the Joker is considered by critics his perfect adversary.

One of the most iconic characters in popular culture, the Joker has been cited as a great comic-book villain. He appears in a variety of merchandise, such as clothing and collectable items, real-world structures (such as theme park attractions) and references in a number of media. The Joker has been Batman's adversary in live-action and animated incarnations, including the 1960s Batman television series (played by Cesar Romero) and in film by Jack Nicholson in 1989's Batman and Heath Ledger in 2008's The Dark Knight (earning Ledger a posthumous Academy Award for Best Supporting Actor). Mark Hamill, Brent Spiner, Michael Emerson and others have voiced the animated character.

1. Yahoo Answers lookup

The bot could already answer basic questions, but nothing more advanced. With a certain key phrase, however, the bot will shift into a mode where anything the user says will be used to query Yahoo Answers- ostensibly through Batman’s vast information gathering systems (it’d hard to be the world’s greatest detective otherwise, of course). It is possible to shift back to regular conversation with the keywords ‘quit’ or ‘exit’.

User: I have a question

Bot: You’ve put me into Question Mode. What’s up?

User: how do you eat spaghetti

Bot: Yes, I agree, eating spaghetti in a restaurant can be a nightmare if table manners have been deeply ingrained, but personally, I always say that if I've paid for the food then I'm going to enjoy it, in spite of what people might think of my eating technique.

One way of eating spaghetti without slurping it everywhere, and still getting a good mouthful, is to take a large spoon and a fork; twist the spaghetti around the fork, using the spoon to stop the spaghetti unravelling and falling off before you put it in your mouth.

Anything else?

User: quit

Bot: Ok, let's get back to the matter at hand.

1. Speech to text recognition

This new feature provides a more seamless conversation with the bot. While typing is still one of the most efficient ways to communicate, speech recognition adds an entirely new dimension to ‘talking’ with the bot. The system records from a users’ microphone, and provides a chance to correct the returned text before it is sent to the bot for further processing. It works in all situations for all modes of conversation.

# Limitations

-The bot is still affected by its pre-programmed repertoire of responses.

-Apart from the console and code, there is no way to figure out how long the microphone recorder will run for (currently set to 4 seconds). There isn’t currently a way to re-try speech recognition, nor is there a way to set its timing on the fly.