**ECE 4564 Project 1 Report - Team 13**

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Project Overview:

Our design choices for this project were limited by our knowledge of network applications, so we chose the most basic implementations wherever possible. We used TweePy to interface with Twitter, IBM Watson to create the audio files, omxplayer to play the audio, and WolframAlpha to answer the questions. We used TCP for our socket connections, Fernet for the encryptions of our keys and the message payload, md5 for the hashed checksum, and json for the message formatting.

We were able to implement the project and achieve full functionality. One inconvenience is that our codes must be run in the order Server -> Bridge -> Client, and we could improve this my letting them be started in any given order.

ReadMe File:

Our project consists of a 3-part system that will capture a question from a tweet, speak the question, search WolframAlpha for the answer, speak the answer, and return the answer to the client.

To operate our system, first run the server code using the command "python server.py -p <SERVER_PORT> -b <BACKLOG_SIZE> -z <SOCKET_SIZE>"
Select a server port greater than 1000, set the backlog size to 5, and the socket size to 1024.

Second, run the bridge code using the command "python bridge.py -svr-p <SERVER_PORT> -svr <SERVER_IP_ADDRESS> -p <BRIDGE_PORT> -b <BACKLOG_SIZE> -z <SOCKET_SIZE>"
Select the same server port that was used in the server code, and put the server IP address as the IP for the server pi. Set the bridge port to a value greater than 1000, and different than the Server_Port. Set the backlog size to 1 and the socket size to 1024.

Third, run the client code using the command "python client.py -brg <BRIDGE_IP> -p <BRIDGE_PORT> -z <SOCKET_SIZE> -t "<HASHTAG>"
Put the IP address for the bridge, and select the same port number that was used for initializing the bridge. Set the socket size to 1024 and put the appropriate hashtag in quotes.

Finally, tweet using the appropriate hashtag and the system will perform a cycle (capturing the tweet, saying the question, answering it, saying the response, and returning the answer)