Team Number: Jackson-Mid 1
School Name: Jackson Middle School
Area of Science: Engineering and Computer Science
Project Title: The Gears Are Turing

What is the project about?

The problem the team wants to investigate is whether a conversational machine can deceive a human. In this, the team hopes to construct a Python program that can mimic a teenager's texting speech pattern to the extent of being able to carry out a conversation.

How are you/do you plan to solve this problem computationally?

The team will create the conversational program using Python, as this allows us to speak to the computer and for it to communicate and respond with us, and it has complicated functions that can provide the artificial intelligence. The team will be using this as opposed to Netlogo, due to the fact that Netlogo is primarily reserved for emulations.The team is planning to monitor the texting mannerisms of teens to incorporate them into our program, thus eliminating confusion of the program due to abbreviations and slang utilized by teens. The following is a graph constructed by a group investigating the effectiveness of texting between nurses and patients in a medical situation.

Table 2

Instances of informal language in texting interactions.

Informal language	Nurse (n=72) n (%)	Participant (n=78) n (%)
Contraction	52 (72)	27 (35)
Abbreviation	14 (19)	19 (24)
Emoticons	0 (0)	10 (13)
Text talk	2 (3)	13 (17)
Multiple punctuations	4 (6)	0 (0)
Informal words	0 (0)	9 (11)

What progress have you made up to this point?

The team has improved our research, code, and work ethic. In this, the team has found better resources to use for our project. Research-wise, the team has studied other conversational machines such as the popular and clever artificial intelligence known as ELIZA[2]. ELIZA was known as the artificial intelligence that took the role of a therapist and would, in a way, reflect the conversation onto the other participant. ELIZA would do so by exercising the ability to ask questions which would distract the participant from realizing any flaws in the program. The team is using this information to design a strategy to deceive a human. ELIZA is also made more deceptive by passing the Turing Test, invented by Alan

Turing. He wrote a research paper in 1950 proposing that a simple imitation game in which a judge would decide which participant typing messages to them is a machine, would be effective in assessing AI intelligence[3].Since the kickoff, the team has been hard at work trying to grasp the basic concepts of this new programming language (Python) and move away from repetitive "if" statements by finding a suitable Python function. From this, the team was able to draft array programs based on "trigger words" in the user inputs. The team has been getting help from Neil Haagensen, lead technician at *Adelante's Back in Use,* who is helping us improve our programing skills in this new language and in creating higher functions. The team has also found many online Python manuals[4] and AI building guides[5], which the team will use as a base for our program.Even with the rough beginning, the team has been able to persevere and work towards solving the problem, and hope to soon perfect our design.

What results are you expecting?

The team is anticipating a very unique and complexified final result. The team is expecting to create a computational machine that should be able to deceive a human with effective and abbreviated conversation. Deceiving a human this way is similar to the Turing Test, invented by Alan Turing (see research section). The team's program will not, of course, be able to fully fool a human, as they do not have the resources and expertise to do so. The team is going for a smooth user interface as flaws can frustrate and confuse the user[6].

The following is a conceptual diagram for the rules and format for the code which the team feels is an essential resource for building our program

Team Members
- Munia Omer
- Reyanna Fromme
- Isabella Montoya
- Savannah Phelps

Sponsoring Teacher
- Karen Glennon

Mentors

- Patty Meyer
- Neil Haagensen

Appendix:

1: *Texting Teens in Transition: The Use of Text Messages in Clinical Intervention Research* by JMIR Mhealth Uhealth Team
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4260009/#!po=0.347222

2: *The Turing test: Can a computer pass for a human? - Alex Gendler*
https://www.youtube.com/watch?v=3wLqsRLvV-c&feature=em-share_video_user

3: *The Alan Turing Internet Scrapbook* by Andrew Hodges
http://www.turing.org.uk/scrapbook/test.html

4: *Python -Tutorial* by Tuorialspoint
https://www.tutorialspoint.com/python/index.htm

5: *AI and Python: Developing a Conversational Interface using Python* by Amy Iris
http://www.slideshare.net/amyiris/ai-and-python-developing-a-conversational-interface-using-python

6: *Great chatbot building – the ultimate cheat sheet* by Recast.AI https://blog.recast.ai/great-chatbot-building/