Group Name: FB90 (Flyers by 90)

Group Member(s): Ryan Berry (rpberry2)

Group Captain: Ryan Berry

Topic: Text to Music: Combining Sentiment Analysis with Sonic Pi

Description: This project will explore the relationship between written text and music. Given a text input, the goal is to produce a musical output based on various interfacing parameters. These parameters, which will be mined from the text input, may include: positive/negative sentiment, fact/opinion sentiment, word length distribution, and POS-tagging.

Once the parameters are derived, a "musical output" will be generated. The musical output will actually take on the form of a coding language/tool called Sonic Pi (https://sonic-pi.net/). Sonic Pi, which is a code-based music creation and performance tool, provides a powerful interface for generating music – think Python meets GarageBand.

Upon completion of this project, a user will be able to navigate to a JavaScript-based webpage, input one or more sentences into a text box, and receive a block of code which can be copied/pasted into Sonic Pi for listening. On the server side, a Python-based, Flask API will receive the text input, derive the interfacing parameters using Python NLP libraries, then generate and respond with executable Sonic Pi code.

Success of this project can be measured by how unique and relevant the musical beats are in conjunction with the text input. This is an empirical analysis, for which the user will have to decide how well the generated beats represent the input text. E.g. does the sentence, "I love you" produce a distinct and meaningful beat compared to the sentence "I hate you"?

Programming Languages: Python, JavaScript, Sonic Pi

Workload Justification:

1. Front-end: 5 hrs
   a. Webpage development: 5 hrs
2. Back-end: 19+ hrs
   a. API communication: 3 hrs
   b. Parameter generation: 6 hrs
   c. Sonic Pi code generation 10+ hrs