Final Project Status Update

* Updated Project Description:

This program will create homophonic music based on information given to the computer

from either the user or randomly generated by the computer. There will be two different sections: one where the user inputs all the information the computer needs to create the music (file name, key, tempo, instruments, etc.) and one where the computer will input the information itself using random number generators. The computer will use fitness functions, scoring and functions to lower the amount of dissonance (instability between notes) to create the best melody it can after randomly choosing a bass function (ostinato, walking or chords). When the computer is finished creating the music, it will export four files: a .mid file with the music, a text file with the score, a text file with the evolution of the rhythms and a text file with the evolution of the melody.

* + Out of scope:
    - This will not be a music creation program where you can input your own notes.
    - Won’t allow user input in what type of bass goes in the left hand.
    - The program will only be developing and playing music that is homophonic (a melody being played over an accompaniment) not any other type of music
  + In scope:
    - Will allow user to input information for a piece of music
    - Will allow the computer to input the information itself to create its own music.
    - A type of music developing AI system.
    - User will be given a printed score of the left hand and the right hand.
    - The default instrument for the AI system is the piano however the user can choose specific instruments for the melody and accompaniment.
  + Functional requirements:
    - Creating a midi file
    - Asking user for input
    - Computer-inputted information
    - Computer creating the music based off of notation and theory it already knows
    - Prints out a score along with the midi file
* A list of assumptions:
  + The user has a very basic knowledge of music notation and the fundamentals of a piece of music (tempo, key signature, time signature, notes, etc).
  + They can read music and understand that the computer is creating the music correctly.
  + The user has a computer which lets the code create a midi file and to listen to it.
  + The user has a text editor so the program can output the evolution files and the score.
* Sample System Interaction:

The system will start up and will prompt the user if they would like to input the information or for the computer to randomly assign that information. If it’s the former then the program will prompt the user for basic pieces of information, for example: file name, tempo, key signature, time signature, and instruments. If it’s the latter then the computer will randomly decide what information it will input and the piece will be named after that information where each piece of information is separated by colons. Afterwards, no matter if the user or computer inputs the information the computer will randomly decide what type of bass to implement. When finished the computer will take that information and start creating the music. After this, it will output the midi file and the score which can be listened to/viewed when the user wants to. The computer the user has the system on should be able to view the midi in some media player and the score in some text editor.

* Finished
  + Creating a midi file
    - Approximate amount of hours: 20
  + Asking user for input
    - Approximate amount of hours: 1
  + Computer randomly creates numbers for the input
    - Approximate amount of hours: 1
  + Program outputs homophonic piano music
    - Approximate amount of hours: 20+
  + Outputs a score:
    - Approximate amount of hours: 3
  + Outputs the evolution of the rhythm and melody
    - Approximate amount of hours: 1