# Assignment 2, Accompaniment Generation Report

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## Requirements

- python 3.10 and further

- pip to install additional libraries

## How to run a program

You need to run a python source code (you may require to install some additional libraries, such as music21), then you need to follow steps that are described in the interface (copy music file in the same folder with the source code and write in the program the name of this file with the extension e.g. input1.mid), further you can have a cup of coffee while your beautiful music is being processing.

## Key detection algorithm

In this program we extract key from the input file by using music21 library.

## Resulting keys

Detected keys for the files that were given in the task are D#m, F, and E#m, for files input1.mid, input2.mid, and input3.mid.

## Algorithm flow

To identify the quality of the generated melody we use the knowledge about consonant chords. All our melodies are represented in the code as the sequences of the triads of chords that sounds good or not with the initial melody. So we use the formula to understand whether this or another chord are consonants with the note in melody or not, and based on that we build our fitness function.