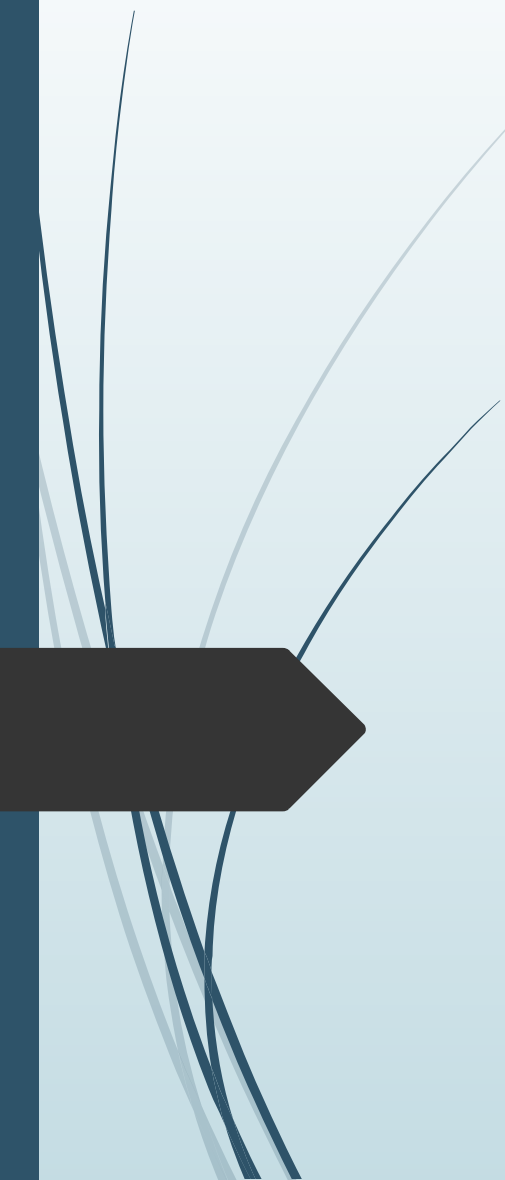


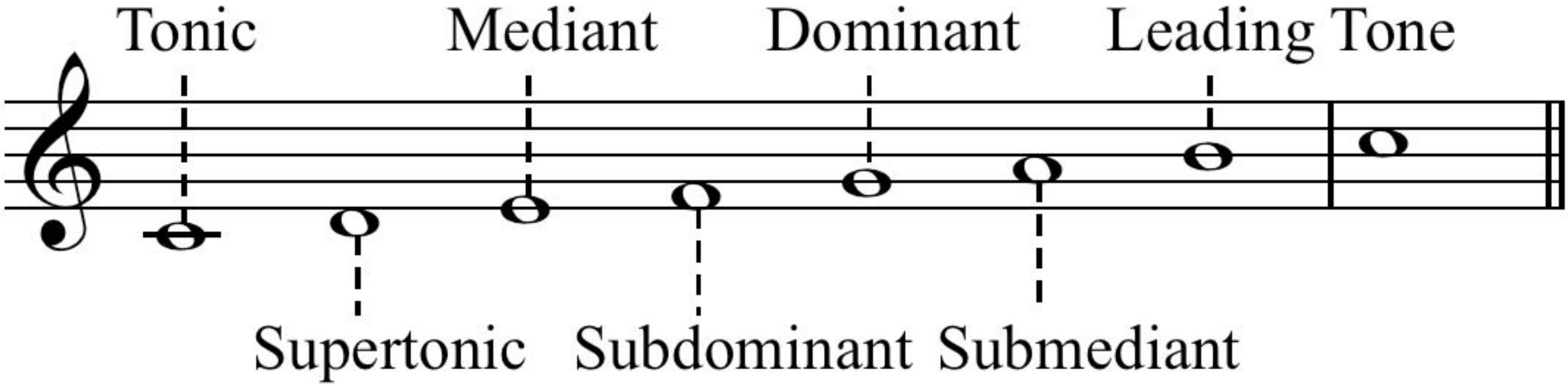
Introduction to Artificial Intelligence

Week 8

Music Generation

Scale Degree

- ***Scale degree*** refers to the position of a particular note on a scale relative to the tonic, the first and main note of the scale from which each octave is assumed to begin. Degrees are useful for indicating the size of intervals and chords, and whether they are major or minor



Exercise

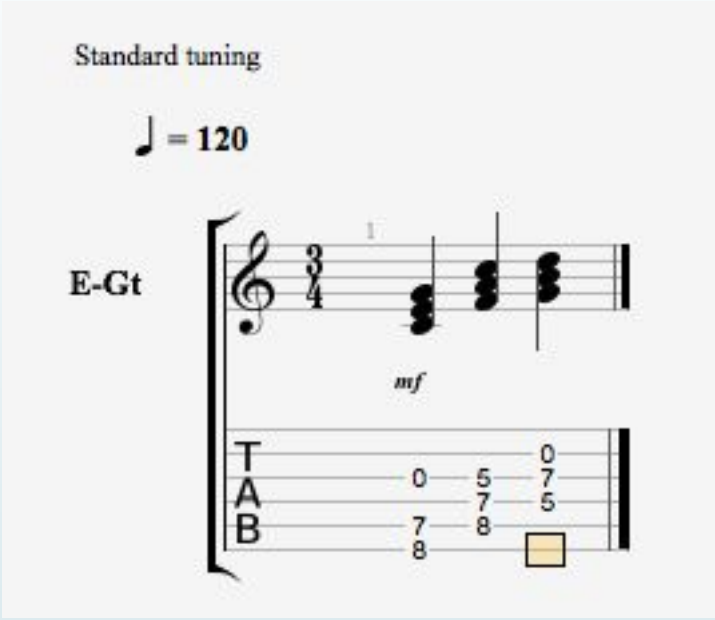
- Use evolutionary algorithm to generate sequence of tonic, subdominant and dominant triads for C major in MIDI format. Suppose that possible MIDI note levels are in the range [60;90]. All generated chords should begin in the same octave.

Recommendations

- You can use any programming language. Some languages allow to use special musical libraries. For Java JFugue or JMusic can be used for MIDI generation, Python is also popular in this field.

Answer

- Output may look like this



- And sound like this

- MIDI values for tonic chord: 60, 64, 67 or 72, 76, 79
- MIDI values for subdominant chord: 65, 69, 72 or 77, 81, 84
- MIDI values for dominant chord: 67, 71, 74 or 79, 83, 86