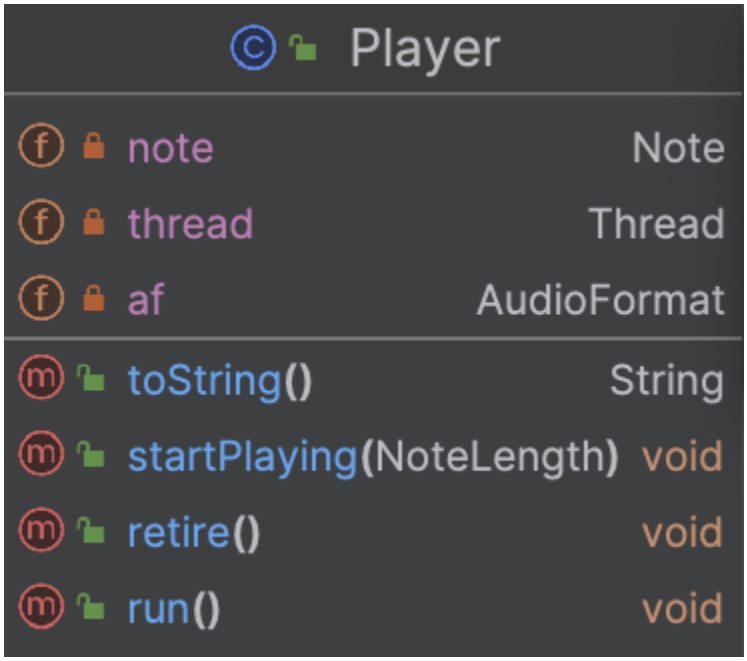
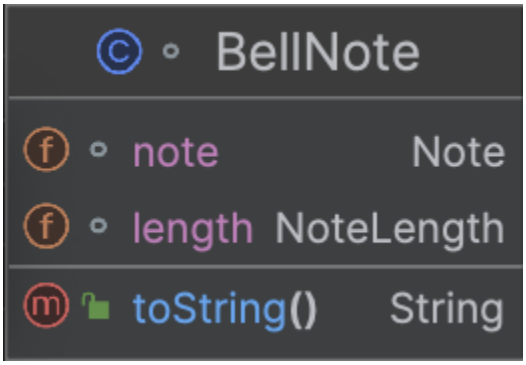
Hank Rugg

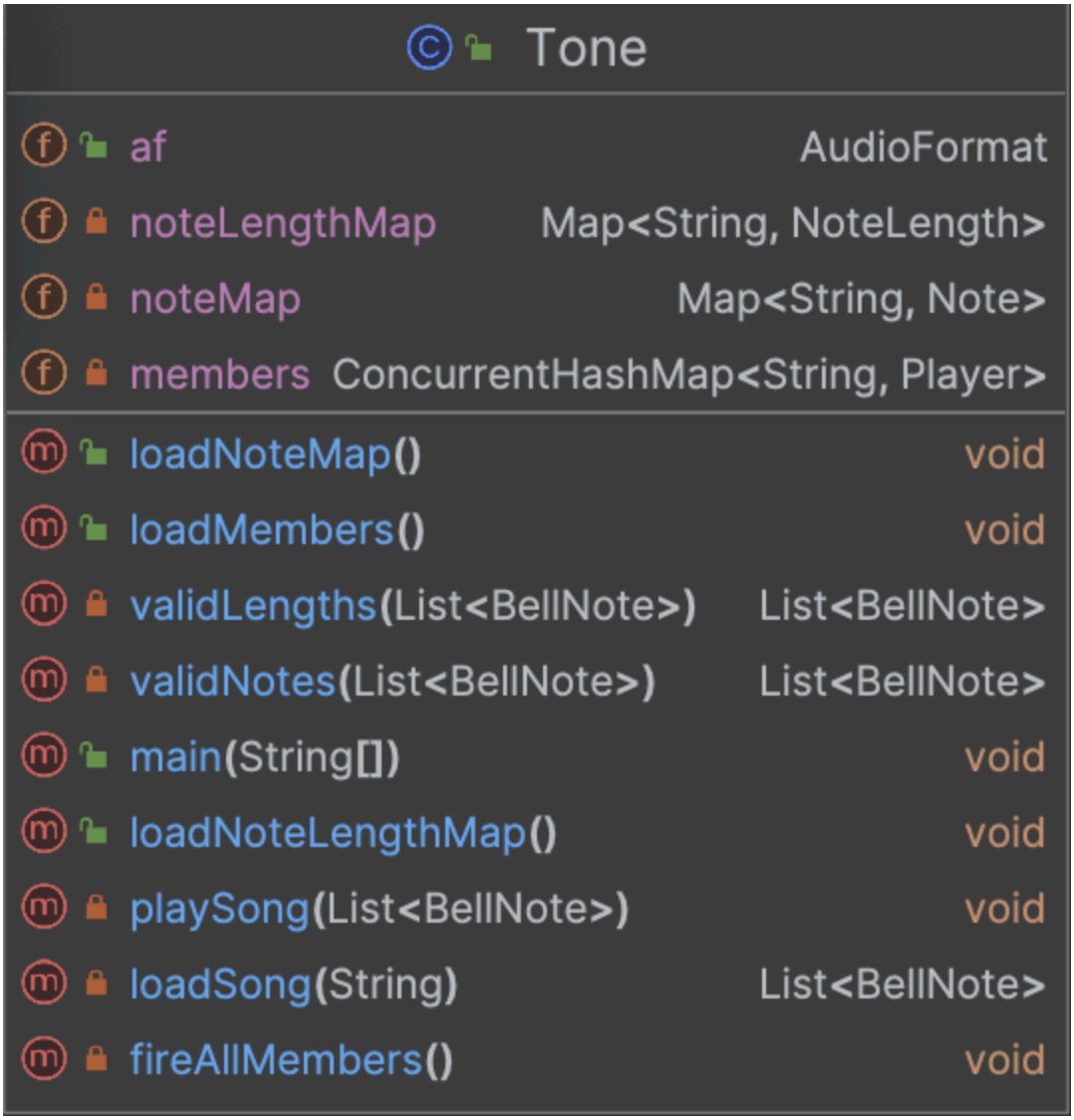
Bell Choir External Documentation

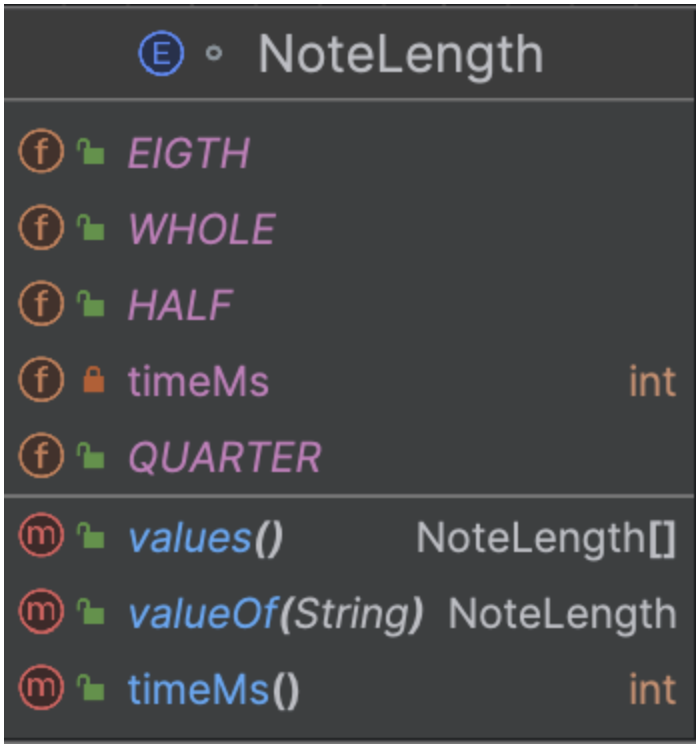
Meets Requirements: The BellChoir project is a Java application that allows users to load and play songs using predefined musical notes. It provides functionality for loading songs from text files, playing them using audio playback, and handling various. Each thread is assigned a note that is then told to play at times corresponding to the song provided.

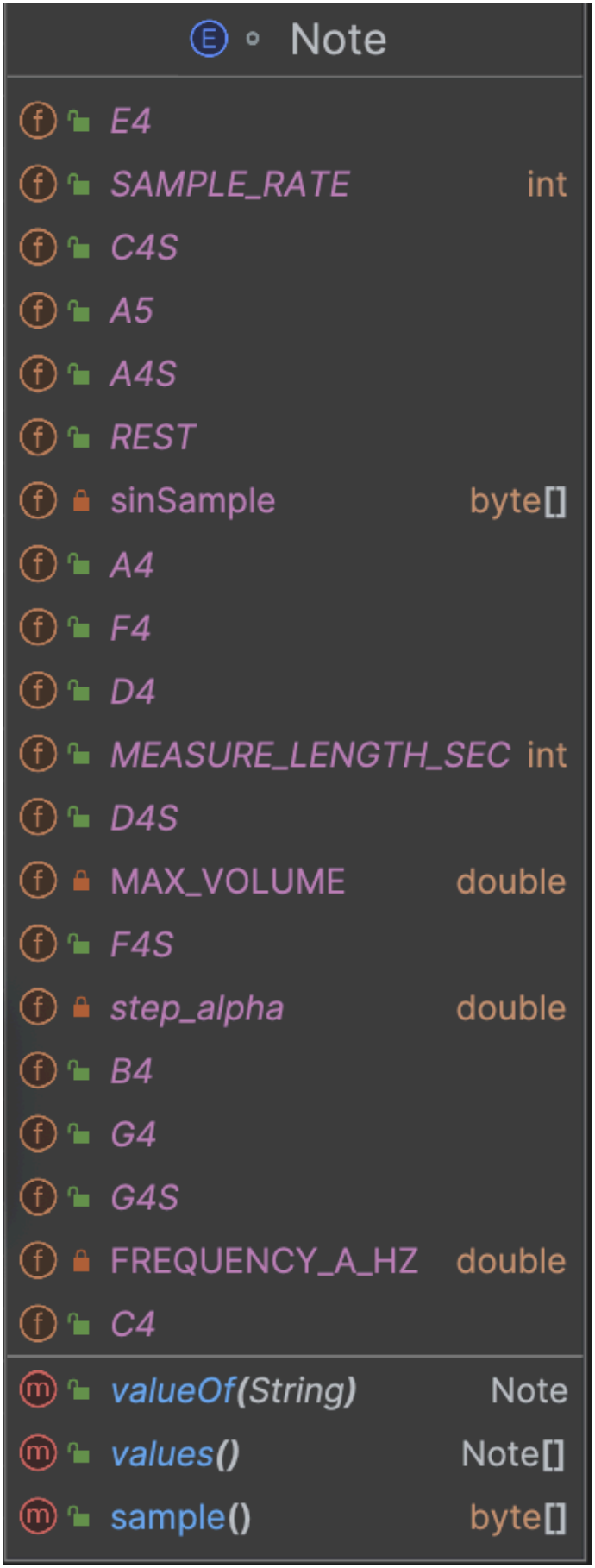
Challenges Faced: The biggest challenge faced was making each thread play at the time it is supposed to and not at all times. This was overcome by using synchronization on the start playing method which allows only one thread to access that method at a time.

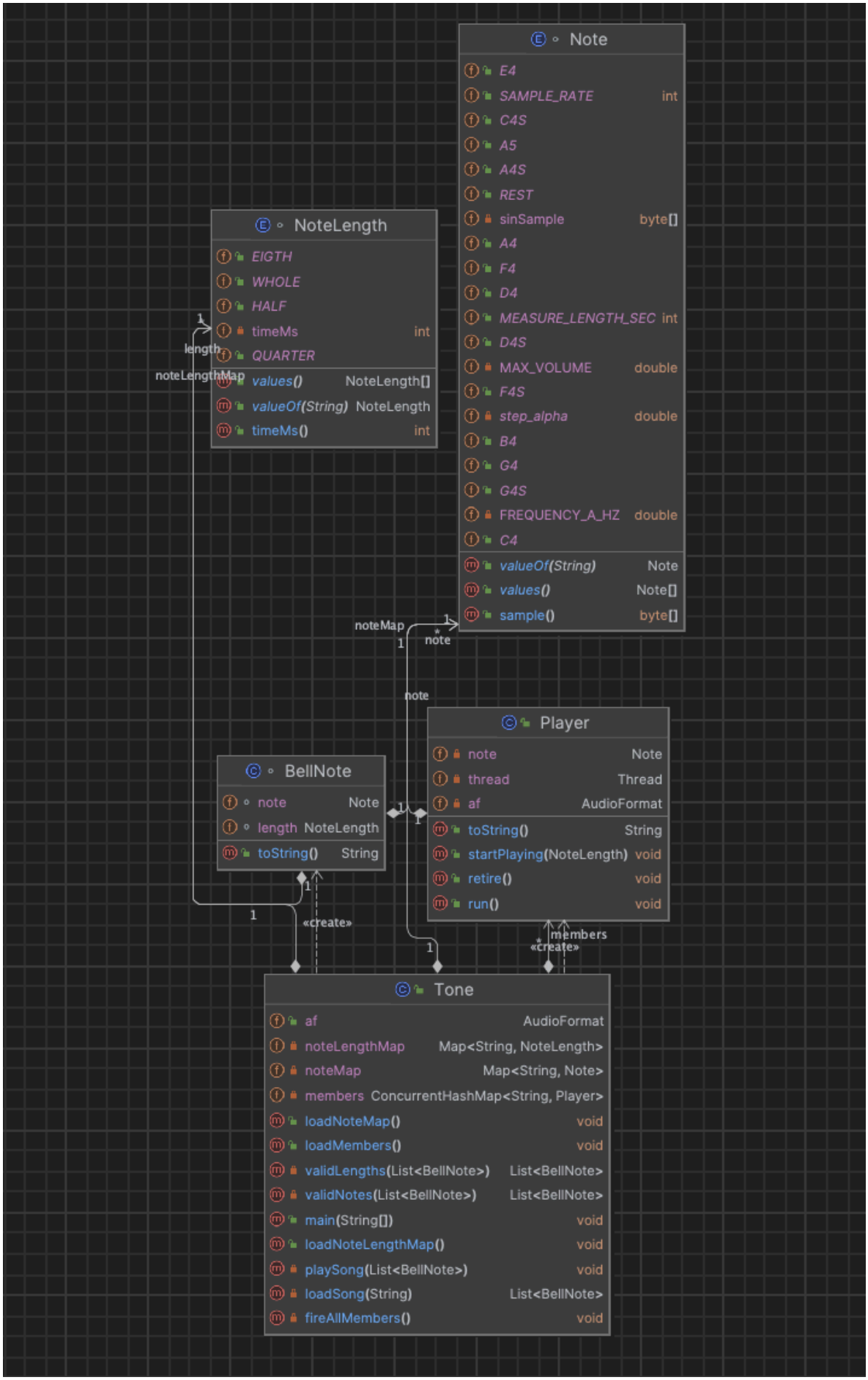





Tone
af AudioFormat
noteLengthMap Map<String, NoteLength>
noteMap Map<String, Note>
members ConcurrentHashMap<String, Player>
loadNoteMap() void
loadMembers() void
validLengths(List<BellNote>) List<BellNote>
validNotes(List<BellNote>) List<BellNote>
main(String[]) void
loadNoteLengthMap() void
playSong(List<BellNote>) void
loadSong(String) List<BellNote>
fireAllMembers() void


NoteLength
EIGTH
WHOLE
HALF
timeMs int
QUARTER
values() NoteLength[]
valueOf(String) NoteLength
timeMs() int


Note
E4
SAMPLE_RATE int
C4S
A5
A4S
REST
sinSample byte[]
A4
F4
D4
MEASURE_LENGTH_SEC int
D4S
MAX_VOLUME double
F4S
step_alpha double
B4
G4
G4S
FREQUENCY_A_HZ double
C4
valueOf(String) Note
values() Note[]
sample() byte[]


Note
E4
SAMPLE_RATE int
C4S
A5
A4S
REST
sinSample byte[]
A4
F4
D4
MEASURE_LENGTH_SEC int
D4S
MAX_VOLUME double
F4S
step_alpha double
B4
G4
G4S
FREQUENCY_A_HZ double
C4
valueOf(String) Note
values() Note[]
sample() byte[]
NoteLength
EIGTH
WHOLE
HALF
timeMs int
QUARTER
values() NoteLength[]
valueOf(String) NoteLength
timeMs() int
length
noteLengthMap
noteMap
note
BellNote
note Note
length NoteLength
toString() String
Player
note Note
thread Thread
af AudioFormat
toString() String
startPlaying(NoteLength) void
retire() void
run() void
«create»
members
Tone
af AudioFormat
noteLengthMap Map<String, NoteLength>
noteMap Map<String, Note>
members ConcurrentHashMap<String, Player>
loadNoteMap() void
loadMembers() void
validLengths(List<BellNote>) List<BellNote>
validNotes(List<BellNote>) List<BellNote>
main(String[]) void
loadNoteLengthMap() void
playSong(List<BellNote>) void
loadSong(String) List<BellNote>
fireAllMembers() void