Requirements

# Non-Functional Requirements

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| **No.** | **Requirement** | **User Story/Stories** |
| **1.0** | The system should be able to open a stream to interpret incoming audio data. | 1. *As a musician, I want to be able to record myself playing so I can have the sheet music automatically transcribed for me.* |
| **2.0** | The system should be able to store a stream of sound data as appropriate for internal processing. | 1. *As a musician, I want to be able to record myself playing so I can have the sheet music automatically transcribed for me.* 2. *As a musician, I would like the system to accurately understand the notes I’m playing so they can be transcribed correctly.* |
| **3.0** | The system should be able to analyse sound data by distinguishing individual note fundamentals from identified frequencies. | 1. *As a musician, I would like the system to accurately understand the notes I’m playing so they can be transcribed correctly.* |
| **4.0** | The system should be able to identify the correct pitch for (monophonic) notes played on a standard piano. | 1. *As a musician, I would like the system to accurately understand the notes I’m playing so they can be transcribed correctly.* |
| **5.0** | The system should be able to distinguish the length and duration of individual notes. | 1. *As a musician, I would like the system to accurately understand the notes I’m playing so they can be transcribed correctly.* |
| **6.0** | The system should be able to translate identified notes into a MIDI file format. | 1. *As a musician, I want to be able to see my transcribed sheet music in common notation software so I can use it in the future and edit it if I need to.* |
| **7.0** | The system should provide a simplistic GUI to allow the user to input details (key signature/tempo/time signature). | 1. *As a musician, I want to be able to tell the system what tempo, time signature and key signature I’m playing in so I can be sure the sheet music will be accurate.* |

# Functional Requirements

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| **No.** | **Requirement** | **User Story/Stories** |
| **8.0** | The system should allow the user to commence and stop recording. | 1. *As a musician, I want to be able to choose to start and stop recording so that I know when to begin and stop playing.* |
| **9.0** | The system should allow the user to specify the time signature, key signature and tempo they intend to play at. | 1. *As a musician, I want to be able to tell the system what tempo, time signature and key signature I’m playing in so I can be sure the sheet music will be accurate.* |
| **10.0** | The system should be able to generate a file from the analysed sound data that can be imported directly to popular notation software, such as MuseScore or Sibelius. | 1. *As a musician, I want to be able to see my transcribed sheet music in common notation software so I can use it in the future and edit it if I need to.* |
| **11.0** | The system should be able to allow the user to specify where they would like their outputted MIDI file. | 1. *As a musician, I would like to be able to specify where I can store the system’s output so I can access the results easily.* |