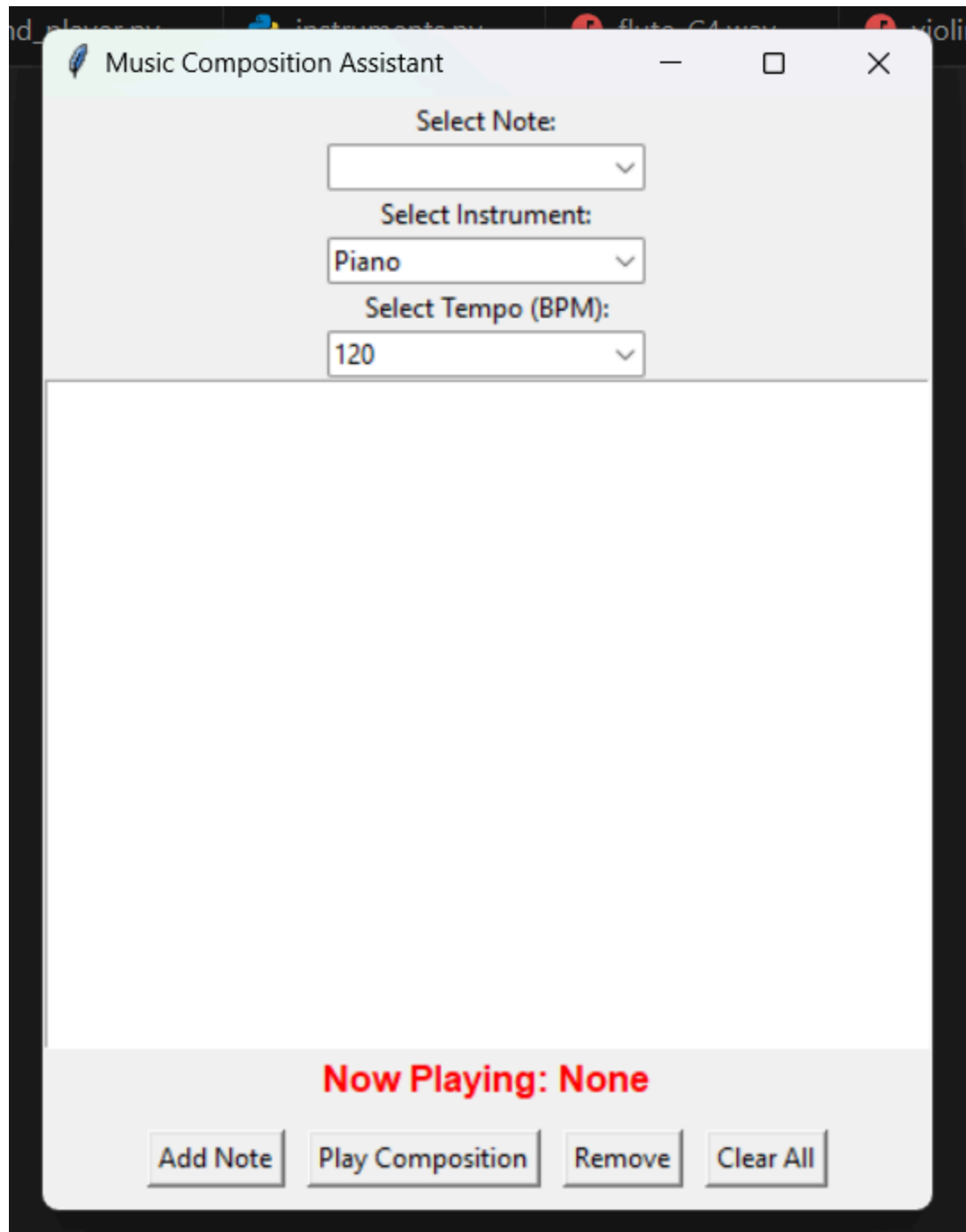Balajadia, Kent Russel G.

3-BSCS-1

Intelligent System

MUSIC COMPOSER APPLICATION

Features:

🎼 Music Composition

- Users can select musical notes (C4, D4, etc.) and assign them to an instrument.
- Composition stores the sequence of notes with corresponding instruments.
- Notes can be added, removed, or cleared from the composition.

🎹 Instrument Selection

- Users can choose from multiple instruments:
  - Piano
  - Guitar
  - Violin
  - Flute
  - Trumpet

🎵 Sound Playback

- Plays individual notes using pygame's sound system.
- Uses resampling techniques to adjust sound frequencies for different notes.
- Can play the full composition at a user-defined tempo (BPM).

🎛 GUI (Graphical User Interface)

- Tkinter-based UI for easy interaction.
- Drop-down menus for note selection, instrument selection, and tempo setting.
- Listbox to display the composition and highlight currently playing notes.
- Buttons to add, play, remove, and clear notes.

💾 File Management

- Users can save compositions to a file.

- Load and restore previous compositions from saved files.

🎶 Advanced Sound Processing

- Uses `pygame.sndarray` and `numpy` for resampling and modifying pitch.
- Each instrument has its own sound file (e.g., `piano_C4.wav`).
- Supports breath control (for wind instruments) and strumming (for string instruments).