**ABSTRACT**

**ON**

***Interactive MIDI Musical Keyboard: Simplified Music Creation using Python***

*Submitted to*

**DEPARTMENT**

**of**

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**ABSTRACT**

**INTRODUCTION:**

The project aims to develop a user-friendly musical keyboard system using Python, where each key corresponds to a specific musical note. The focus is on simplicity and interactivity, allowing users to effortlessly create music. The system incorporates error handling and refinement techniques for a seamless user experience.

**Existing System:**

Current systems include DAWs, online virtual pianos, educational software, and gaming keyboards with music modes. They face limitations such as:

1. Limited customizability

2. Complexity for beginners

3. Lack of seamless error handling

4. Dependency on specific software

5. Limited integration potential.

**Proposed System:**

The proposed system uses Python with MIDI libraries like mido or python-rtmidi and sound synthesis libraries like FluidSynth or pygame. Each key on the keyboard is mapped to a MIDI note, triggering the corresponding musical sound. The user interacts with a piano-like GUI created with Tkinter. Error handling is implemented, and user feedback refines the interface.

**Advantages Over Existing Systems:**

1. Simplicity and User-Friendly Design
2. Error Handling for Seamless Experience
3. Customizability and Sound Libraries
4. Open-Source and Community Collaboration
5. Integration Potential