

# Use Case Models and Use Case Descriptions

## Use Case Models

### Piano Keyboard Input

Use Case model:



### Use Case Descriptions:

Play Keyboard:

- Use Case ID: 1
- Relevant User Story IDs: 1,2
- Actors: User
- Preconditions: None
- Post-conditions: None
- Exceptions handled: None

### Steps:

#### *User Actions*

#### *System Responses*

- User plays notes on the piano - System plays the corresponding sounds for the notes

**View Note:**

- Use Case ID: 2
- Relevant User Story IDs: 31

- Actors: User
- Preconditions: User Plays Piano
- Post-conditions: None
- Exceptions handled: None

**Steps:**

**### User Actions**

**### System Responses**

- User plays notes on the Piano - System plays the corresponding sounds for the notes
- User views notes as they play - System displays each note as it is played

**View Chord:**

- Use Case ID: 3
- Relevant User Story IDs: 1, 4
- Actors: User
- Preconditions: User Plays Piano, notes played form a valid chord
- Post-conditions: None
- Exceptions handled: If the notes aren't a chord, nothing is displayed

**Steps:**

**### User Actions**

**### System Responses**

- User plays notes on the Piano - System plays the corresponding sounds for the notes
- User views chords as they play - System displays the chord name

**View Chord Progression:**

- Use Case ID: 4
- Relevant User Story IDs: 28, 30
- Actors: User
- Preconditions: User Plays Piano, notes played form valid chord
- Post-conditions: None
- Exceptions handled: If the notes aren't a chord, nothing is displayed

**Steps:**

**### User Actions**

**### System Responses**

- User plays notes on the Piano - System plays the corresponding sounds for the notes
- User views notes as they play - System displays chord progression suggestion

**Change Synth Sound:**

- Use Case ID: 5
- Relevant User Story IDs: 9, 22
- Actors: User
- Preconditions: None

- Post-conditions: None
- Exceptions handled: None

**Steps:**

**### User Actions**

**### System Responses**

- User changes Synth sound selection - System changes the sound profile that is played by piano

**Change octave:**

- Use Case ID: 6
- Relevant User Story IDs: 17
- Actors: User
- Preconditions: None
- Post-conditions: None
- Exceptions handled: None

**Steps:**

**### User Actions**

**### System Responses**

- User changes octave - System changes the octave that is played by piano

**Change input method:**

- Use Case ID: 7
- Relevant User Story IDs: 7, 31
- Actors: User
- Preconditions: In order for the Midi input to be selected, a Midi device must be set up
- Post-conditions: None
- Exceptions handled: If no Midi device is set up, the system must prompt the user to set one up, or leave the input on 'keyboard'

**Steps:**

**### User Actions**

**### System Responses**

- User changes from Keyboard to MIDI or MIDI to keyboard input

- System accepts piano input only from the selected input

**Choose Chord Progression Feel:**

- Use Case ID: 8
- Relevant User Story IDs: 16
- Actors: User
- Preconditions: None
- Post-conditions: None
- Exceptions handled: None

### Steps:

#### ### User Actions

- User chooses desired chord progression feel

#### ### System Responses

- System prioritizes the user's desired feel when suggesting chord progressions

### Setup Midi device:

- Use Case ID: 9
- Relevant User Story IDs: 7, 31
- Actors: User
- Preconditions:
- Post-conditions: Input can be changed to Midi
- Exceptions handled: If no Midi device can be detected for setup, the system must present an error to the user

### Steps:

#### ### User Actions

- User sets up Midi device

#### ### System Responses

- System attempts to detect Midi device
  - System sets up detected Midi device
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## Playback Interface

### Use Case model:



### Use Case Descriptions:

#### Select Chord:

- Use Case ID: 10

- Relevant User Story IDs: 8
- Actors: User
- Preconditions: None.
- Post-conditions: None.
- Exceptions handled: None

**Steps:**

| ### User Actions | ### System Responses                    |
|------------------|-----------------------------------------|
| - Select chord   | - Switch playback to the selected chord |

***Select Chord Progression:***

- Use Case ID: 11
- Relevant User Story IDs: 8
- Actors: User
- Preconditions: None.
- Post-conditions: None.
- Exceptions handled: None

**Steps:**

| ### User Actions           | ### System Responses                                |
|----------------------------|-----------------------------------------------------|
| - Select chord progression | - Switch playback to the selected chord progression |

***Change playback speed:***

- Use Case ID: 12
- Relevant User Story IDs: 8
- Actors: User
- Preconditions: None.
- Post-conditions: None.
- Exceptions handled: None

**Steps:**

| ### User Actions                      | ### System Responses                                                                                              |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| - Increase or decrease playback speed | - If playing: Modulate playback speed based on input<br>- If paused, update speed to be used when playback starts |

***Change Playback View:***

- Use Case ID: 13
- Relevant User Story IDs: 8
- Actors: User
- Preconditions: None.

- Post-conditions: None.
- Exceptions handled: None

**Steps:**

**### User Actions**

- Select Fretboard, Ledger, or Piano Roll view

**### System Responses**

- System changes current playback view to the one that the user selected

***Toggle Playback:***

- Use Case ID: 13
- Relevant User Story IDs: 8
- Actors: User
- Preconditions: None.
- Post-conditions: None.
- Exceptions handled: The user has not selected a chord or chord progression, the system will play a default C major chord.

**Steps:**

**### User Actions**

- Toggle the play/pause button

**### System Responses**

- If the system was already playing, stop  
- If the system was not playing, start playback