# Music Synthesizer With FPAAs

Members:

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#### **Potential High-Level Approach**



# MIDI Conversion Using Assembly

Status Byte		Data Byte 1	Data Byte 2
1001	1111	00111100	01111111
Note	MIDI Channel 16	Note Number 60 (C3)	Note Velocity 127

**MIDI** Data Format

## Alternative to using Assembly for MIDI Conversion



#### **Sources of MIDI Generation**



#### **MIDI Keyboard**



#### **Android Application**

#### **Project Demo Idea**



#### Music Synthesizer (Subtractive)



#### **Transistor Level Diagrams**



Voltage-Controlled Amplifier

#### **FPAA Programming Interface**





#### Macro-Block Generation

## **Current Progress**

- Started Marco-Block Generation for VCO, VCA, and VCF.
  - Having compilation issues with XCOS / RASP Tools
- Finished ASDR Marco-Block Generation and have begun testing voltage input values.



## **Proposed Timeline**

