

Symphonic Harmonics

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Motivation

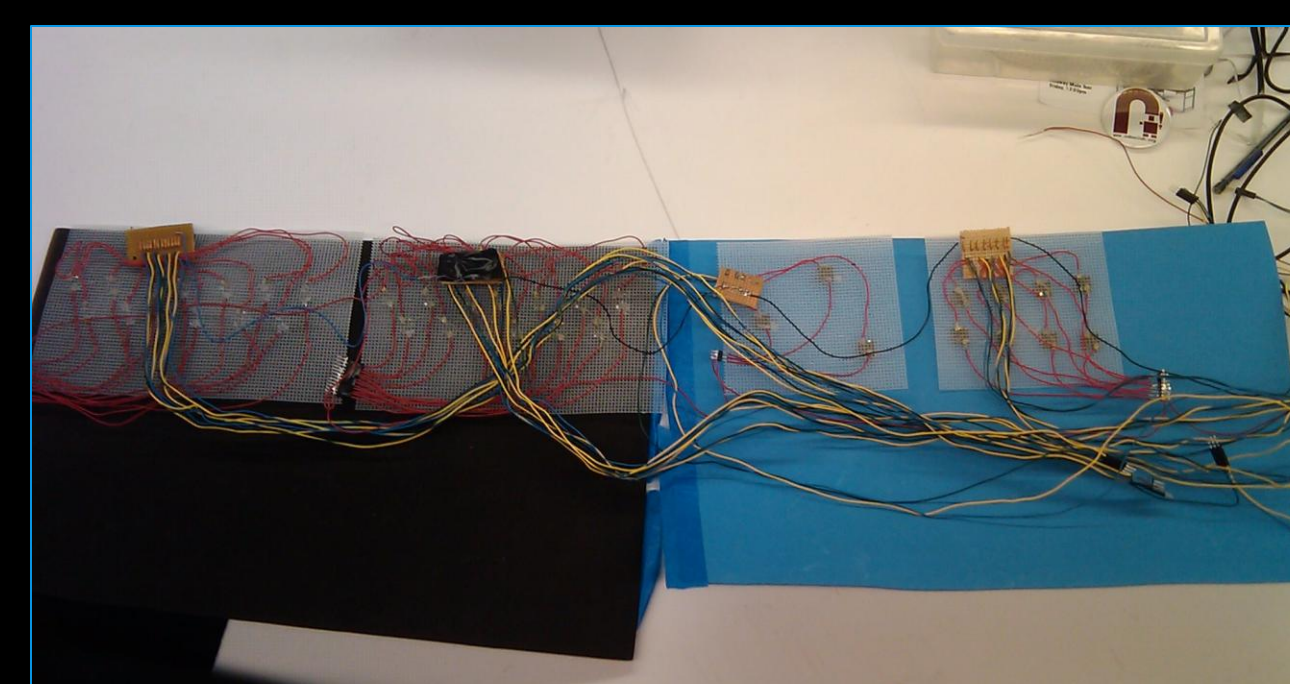
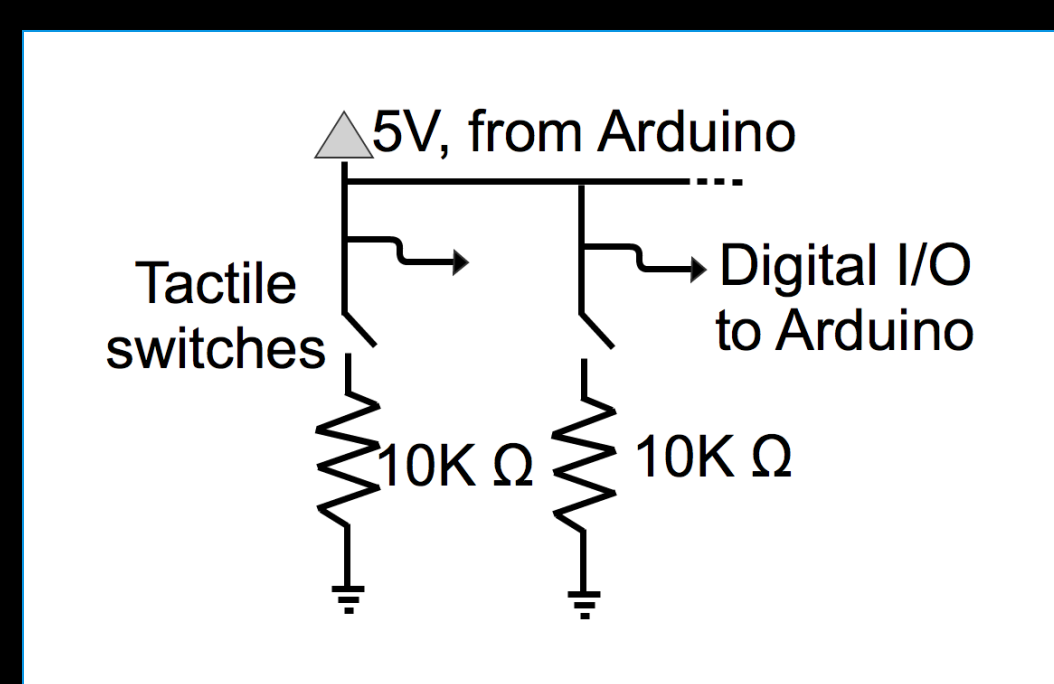
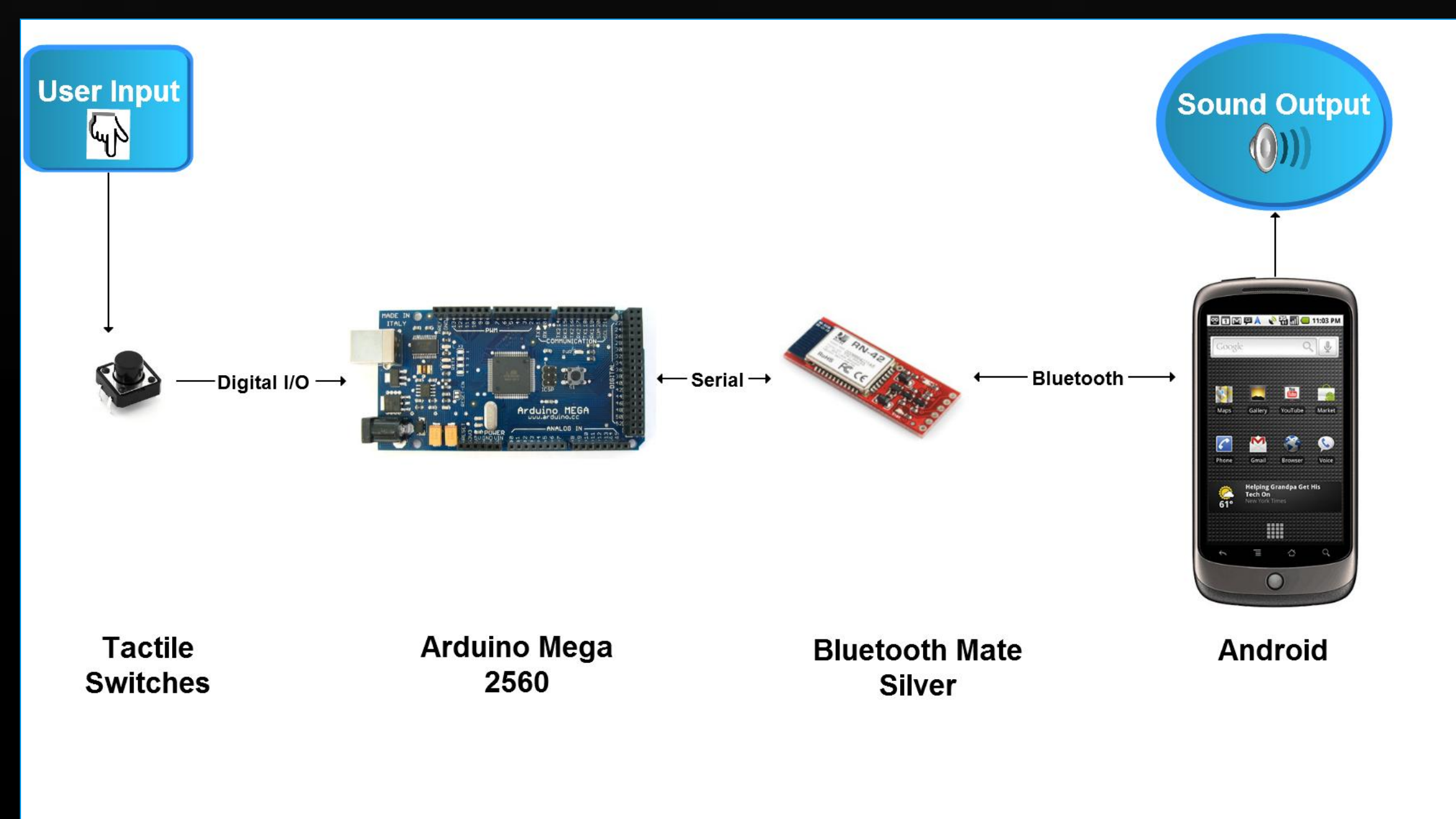
- # Objective: To make a portable, flexible, music keyboard that interfaces with Android for playback and visual display and incorporates sounds from a variety of instruments.
- # Requirements:
 - # Lightweight and flexible design
 - # Shall provide at least 3 types of musical instruments, with capability to add more
 - # Allows users to playback and record compositions

Development Environment

- # Hardware
 - # Google Nexus One
 - # Arduino Mega 2560
 - # Bluetooth Mate Silver
 - # Tactile switches
- # Software
 - # Java, Android SDK
 - # C, Arduino IDE



Architecture



Results

- # Includes 5 instruments, with 79 sounds
- # Play as many keys as desired concurrently
- # Record and playback up to 3 previously saved songs
- # Keyboard can be folded in half for easy transportation

Action	Avg. Time (ms)
Starting application	1061
Loading sound file	167
Establishing connection	3894
Receiving packet	40

