INNOVATIVE PROJECT LAB

TITLE: PAPER PIANO USING ARDUINO

Team members:

1. Joyson Samuel P [190701084]
2. Harish Rajaa M [190701063]

ABSTRACT:

This model will replace the existing musical instrument system with a more cost efficient, compact and innovative model. The cost of a piano or keyboard, musical instrument is between the range of twenty thousand INR (20,000 rupees) to one lakh INR (1,00,000 rupees). Music enthusiasts who wish to learn keyboard but have very less budget can use this model. The cost to build this model is under Five Thousand INR (5000 rupees). The model works using an Arduino, a drawn keyboard using charcoal pencil, a paper, and a speaker. The price of a keyboard/piano is very high. A drawing pencil can be used as a capacitive sensor. The sensor and your body form a closed circuit which act as a capacitor. Generally a musical keyboard consist of five octaves, Our model has a single octave which consist of black and white keys. The feature to send input signal without any sensors makes this project unique and innovative.

LITERATURE SURVEY:

S.NO	TITLE OF THE PAPER	AUTHORS AND YEAR	PROBLEMS ADDRESSED BY THE PAPER	METHODOLOGY USED	LIMITATION OF THE SYSTEM
1)	Electronic Piano Keyboard with present songs	Lindsay Fox Year: 2016	To access a menu that allows you to play preset songs	The piano key switches are connected using a resistor. The resistors are placed in sequential order, connecting each switch to power. C4,D4,E4,F4,G4,A4 &B4 keys are made using switches.	Cannot input manually only preset songs can be played.
2)	Arduino Keyboard	Gabriele Scordamagal i Year: 2017	To create a functioning keyboard with editable keys	Here buttons are used as keys and the Arduino board can be recoded to change the key tones	Cost of building this model is tough
3)	Mini Piano	Rahul Khanna D Year: 2018	Each button is placed in the breadboard to form a mini piano	The buttons are placed in the breadboard and the Arduino is coded to respond to the input	Recoding is not possible since the buttons are fixed
4)	Multi-Octave Portable Capacitive Touch Piano	Sridhar Rajagopal Year: 2019	Multiple octaves are present in this model thus increasing the tone range	Capacitive sensor is the main part in building this model. The presence of multiple octaves increases the tone range	Very expensive and complicated to build.
5)	Touch Sensing Piano	Jeremy Sow Year: 2018	For each touch input the corresponding output sound should be detected	Here capacitive sensor is used here along with electric paint to detect the input.	The cost of electric paint is very high

ARCHITECTURE DIAGRAM: