Summer Project - Electronic Piano

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1 Task 2- Finding frequencies of the notes C4 to C6 of a piano and making a piano for the notes C4 to G4 (8 notes only)

Since, the piano we are making contains 25 push-buttons, our first work is to find out the frequency values of the notes C4 to C6.

From the Analog values that we have noted in the Task 1, the lower limits and upper limits for each push button have been finalised to be:

$$Resistor\ Value = \frac{\sum_{n=0}^{n=n-1} Resistor \times Analog\ Value}{1023 - Analog\ Value}$$

Analog Value	Resistor Value	$\sum_{n=0}^{i=n-1} Resistor$	Lower Limit	Upper Limit
0	2000 (initiation)	0	0	50
93	200	2000	51	150
236	400	2200	151	300
421	800	2600	301	450
614	1600	3400	451	650
773	3200	5000	651	800
883	6400	8200	801	900
948	12800	14600	901	960
984	25600	27400	961	1000

(It's better for all of us to use the above mentioned lower and upper limits since it maintains uniformity in the final design. But if you want to use the values you have obtained, there is

no restriction from our side)

The next work is to use the frequencies of C4 to G4 to build the piano with 8 notes initially. Modify the present design you have made by connecting a peizobuzzer to one of the digital pins and write suitable code such that it works like a real piano.

You can understand how to use the buzzer by referring the link below.
https://www.arduino.cc/reference/en/language/functions/advanced-io/tone/