CHILLAR MACHINE

Objective

This machine will cater to the needs of people facing trouble in finding change for higher denomination currency notes.

Description

This machine will dispense change in return to the money inserted in it. The user can choose any combination of smaller denomination notes in the form of which he/she wants the change. The interface (front part) of the machine will consist of an LCD panel which will display instructions (one at a time) to use the machine, multiple seven segment displays (each of which will correspond to a specific denomination), a numeric keypad, a ‘Reset’ button, an ‘Enter’ button, a timer and some indicator leds.

LCD Panel: This panel will display all the instructions for the user. All possible feedbacks will also be displayed to make it more user-friendly.

The Keypad: The keypad will have 12 keys out of which 10 will be labelled from **0 to 9**, one will be a **‘Delete’** key and the last one will be an **‘Enter’** key. Every numeric input by the user will be through this keypad only. The user will input values in the following sequence. First, he/she will input the amount of money that he/she has inserted. Then, enter must be pressed. Next, the LCD panel will ask him/her to input the first denomination in which he/she wants the change (e.g. **50 Rs**). Then, enter must be pressed. Next, he/she will have to input the number of notes of the denomination that he/she had chosen in the previous input (e.g. **3 notes** of 50 Rs). Then, the next input will indicate the next denomination in which the change is needed, and so on. Finally, the separate **‘Enter’** button should be pressed.

Seven Segment Displays: The seven segment displays will be distributed among all the denominations, and will display the number of notes of each denomination, that the user wants. There will be a total of 1 denominations numbered from 1 to 7 for **10 Rs to 2000 Rs**, so there will be 14 seven segment displays in total (**2** for each denomination). Two more of these will be used to display the counter.

Counter: A counter counting down from **59 to 0** will be used to display the time the user has to enter all the details. If the details are not completely input within the given minute, the machine will **reset**, and the inserted note will be dispensed out.

Enter Button: After all the inputs have been fed to the machine, this separate **‘Enter’** button must be pressed.

Reset Button: If case the user messes up with the inputs, this reset button can be pressed to **undo everything.**

LEDs: LEDs will be used to indicate the denominations selected by the user through the keypad.
At some other places also, LEDs may be used.

List of Components

1. LCD Panel
2. Altera Board
3. 14 Seven Segment Displays
4. LEDs
5. Numeric Keypad
6. Connecting Wires
7. A few separate Push buttons
8. Breadboard
9. Arduino (Specifics will be decided later)
10. Motor and Misc. hardware
11. Miscellaneous

Tentative Timeline

Circuit and internal mechanism designing - By 25nd Oct 2019
VHDL and Arduino coding - By 7-8th Nov 2019
Integration of everything - By 25th Nov 2019