

Advanced BMI Calculator with under and overweight alerts

The project aims at developing a BMI (Body Mass Index) calculator which plays a major role in alerting the risk of diseases due to overweight. The proposed system not only shows the calculated value through LCD display but also, alerts through buzzer regarding over and under weights.

BMI stands for “**Body Mass Index**,” a ratio between weight and height. BMI is a standard “tool” for helping you judge your body weight and the amount of body fat you have. Carrying excess body fat, not muscle, puts you at greater risk for health problems such as heart disease, cancer, diabetes and stroke.

The Controlling device of the whole system is a Microcontroller. The data from the load cell and ultrasonic sensor are processed to calculate the BMI. The calculated BMI is displayed on to a LCD. Also, the Microcontroller continuously monitors the BMI value and judges whether the person is overweight or under weight and alerts through Buzzer. To perform the above mentioned intelligent task, intelligent program written using embedded ‘C’ is loaded into it.

The objectives of the project include:

1. Very accurate measurement of height and weight to avoid BMI calculation errors.
2. Alerts through buzzer, in case of overweight or under weight.

The project provides scope for learning the following technologies:

1. Load cell characteristics and amplifier designing.
2. Interfacing load cell to Microcontroller.
3. Ultrasonic sensor characteristics.
4. Embedded ‘C’ programming.
5. Advantages and Disadvantages related to BMI.

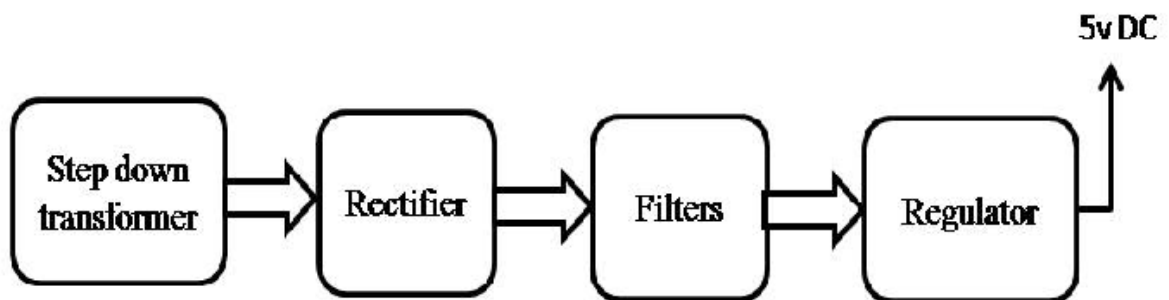
The major building blocks of this project are:

1. Regulated Power Supply.
2. Microcontroller
3. Load cell with Amplifier.
4. Ultrasonic sensor.
5. Buzzer with driver
6. LCD with driver.
7. Crystal oscillator.
8. LED indicators.

Software's used:

1. PIC-C compiler for Embedded C programming.
2. PIC kit 2 programmer for dumping code into Micro controller.
3. Express SCH for Circuit design.
4. Proteus for hardware simulation.

Regulated power supply:



Block Diagram:

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