ABSTRACT

This project presents an automated dimension measurement system which provides users such as designers and estimators certain options when it comes to measurement. This project gives mobility and accuracy. This project uses a PIC microcontroller (16F876A) as its main unit and uses a PARALLAX PING Sensor to acquire measurement. The system is programmed using C language. This sensor is an ultra sonic base module. It sends a pulse and waits for a responds it then measures the time of flight, converting it to readable distance value. It also provides the ability to elevate up and down with its elevation system thus being able to avoid obstacle that come their way. It also averages up the measurements taken thus increasing the accuracy of the system, an essential quality to a measurement system. It is also able to relocate via remote control. Thus, users would not need to reposition the system manually but control it from a distance, thus enabling multiple measurements to be taken from different point. The system is also able to measure the two basic dimensions of a room, the height and the width with a movable servo motor at the sensor.

The system moves as controlled by the user, when at the point of measurement the sensor is triggered and the sensor sends a pulse and waits for the respond pulse. After that the time of flight is measured and the output is shown on the LCD panel. If obstacles were to be present the elevation system would be activated by the user. The change of measurement dimension can be made by pressing the remote and it will move to the dimension of choice. The user also has the choice of angle.

This project was completed successfully and the aims and objectives were completed but with certain limitations.