**AUTOMATED SYSTEM FOR CHOOSING SOLDIER IN ARMY**

In our project we check the standards of Palestinian National Forces:

1. Height

Due to Palestinian national forces the solder`s height mustn`t be less than 170 cm.

2. Weight: this item depends on the height of the person.

3. color blindness due to ashehara test.

4. Flat foot

This is a very important item for any person, because due to Palestinian standards one can`t get involved into any military section if he/she has a very little degree of flat foot.

**Height measurement**

This part of the project discusses the system used in height measurement using ultrasonic sensor (LV-MaxSonar-EZ0 high performance range finder).

* Ultrasonic sensors: generate high frequency sound waves and evaluate the echo which is received back by the sensor. Sensors calculate the time interval between sending the signal and receiving the echo to determine the distance to an object.

**Weight measurement**

This part discusses systems used in weight measurement. It can be performed using one of the strain gauge systems:

* Strain gauge system is a device used to measure the strain of an object. The most common type of strain gage consists of an insulating flexible backing which supports a metallic foil pattern. The gages attached to the object by a suitable adhesive, such as cyanoacrylate . As the object is deformed, the foil is deformed, causing its electrical resistance to change. This resistance change, usually measured using a Wheatstone bridge, is related to the strain by the quantity known as the gage factor.

**Flat foot measurement**

This part discus the system used to measure the flat foot using a combination of limit switches. Flat feet (also called pesplanus or fallen arches) is a formal reference to a medical condition in which the arch of the foot collapses, with the entire sole of the foot coming into complete or near-complete contact with the ground. In some individuals (an estimated 20–30% of the general population) the arch simply never develops in one foot (unilaterally) or both feet (bilaterally).

Many medical professionals can diagnose a flat foot by examining the patient standing or just looking at them. On going up onto tip toe the deformity will correct when this is a flexible flat foot in a child with lax joints. Such correction is not seen in the adult with a rigid flat foot.

**Color blindness**

Color blindness or color vision deficiency is the inability or decreased ability to see color, or perceive color differences, under lighting conditions when color vision is not normally impaired. "Color blind" is a term of art; there is no actual blindness but there is a fault in the development of either or both sets of retinal cones that perceive color in light and transmit that information to the optic nerve.

**Ishihara color test**, which consists of a series of pictures of colored spots,this test often used to diagnose red–green color deficiencies. A figure (usually one or more **Arabic digits**) is embedded in the picture as a number of spots in a slightly different color, and can be seen with normal color vision, but not with a particular color defect.

**Overall software of the project**

Software contains:

* Data base and interface with serial port.
* Wight scale code.
* Ultrasonic code.
* Flat foot code.
* Keypad code.