Task 3: Hardware Specification

Below are a list of hardware specification for the Blood Pressure monitoring device.

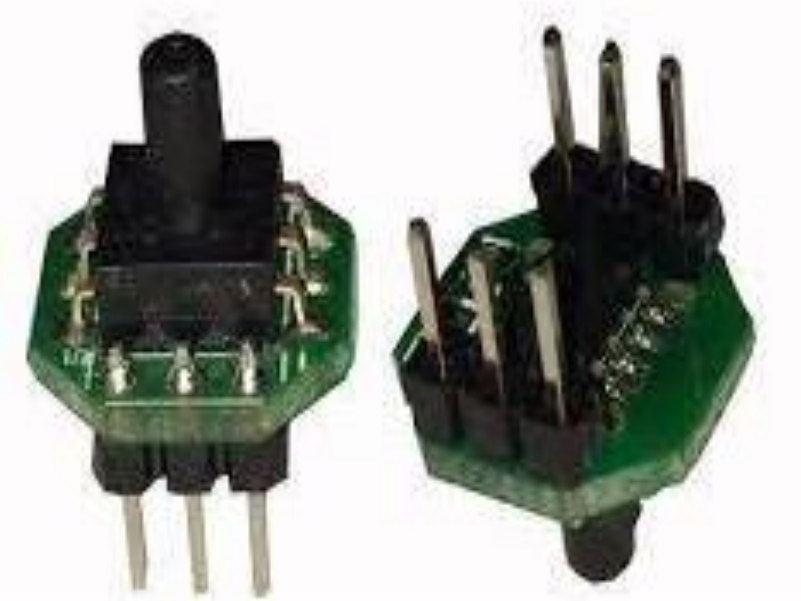
- **Microcontroller** – a microcomputer on a single integrated circuit containing a processor, memory, and programmable input/output peripherals. PIC 16F877A is one of the most advanced microcontrollers. This controller is widely used for experimental and modern applications because of its low price, high quality, and ease of availability.

Fig.1 – Pic Microcontroller

- **Inflatable arm cuff with Pressure sensor** – This component has direct contact with the patient. It is fastened around the upper arm and has a mounted pressure sensor responsible for reading the blood pressure.

Fig.2 Arm cuff with pressure sensor

- **Pressure Sensor–** The figure below shows a typical blood pressure sensor. It is usually installed in the cuff strap so cannot be seen in an every use of the system. It measures systolic and diastolic pressure utilizing the oscillometric method.



- **Air pump with valve –** this is essential for inflating the arm cuff and valve releases the air from the cuff at a regulated amount.

Fig.3 – Pressure pump

- **LCD display screen/User interface – T**he LCD screen is responsible for display processed information from the information read from the patient. The User Interface which is attached to the LCD in most cases allows the user to operate the device with the necessary instruction to carry out.

Fig.4 – LCD/UI

- **Audio speaker –** This basically provides notifications. One very important notification is the alarm function. This serves as an alert if the patient's reading does not fall within the acceptable range.

Fig.5 - Speaker

- **Power source -** This is usually a battery source to power the entire system. A rechargeable battery source is ideal.

Fig.6 - Battery