E-Safe

TEAM:

- Alem Abreha
- Chidi Okafor
- Ashritha Rasa
- Akshay Reddy
- Rajiv Gautham

Overall Status

- **<u>Acquired the following components:</u>**
  - PIR Sensor
  - LCD
  - LEDs
  - Standalone 5-Pad Capacitive Touch Sensor

- **<u>Ordered the following components :</u>**
  - Relay
  - Capacitive Touch Boosterpack (**Plan B**)

- Codes for all the individual components are finished.
- Interfacing of individual components (**PIR Sensor, LEDs** with MSP430 is done)
- Interfacing of LEDs with PIR sensor is done

- **<u>Still need to integrate</u>**
  - LCD , Relay and Capacitive touch sensor.
  - Overall Integration is to be done

LEDs

- **Type**: LED - Basic Red 3mm
- **Hardware Interface** : LEDs interfaced with MSP430 GPIO. They are programmed to light up when the sensors input is high
- Initially thought of using RGB LEDs. However we finally chose the single color LEDs because it fits the objective of the project.
- **Progress with the component**: acquired, tested.
  When motion is sensed with PIR sensor, The LEDs are lit
- **Challenges**: N/A
- **Next Step**: Each LED should be programmed to light up when the input of the Capacitive touch sensor beside it is high.

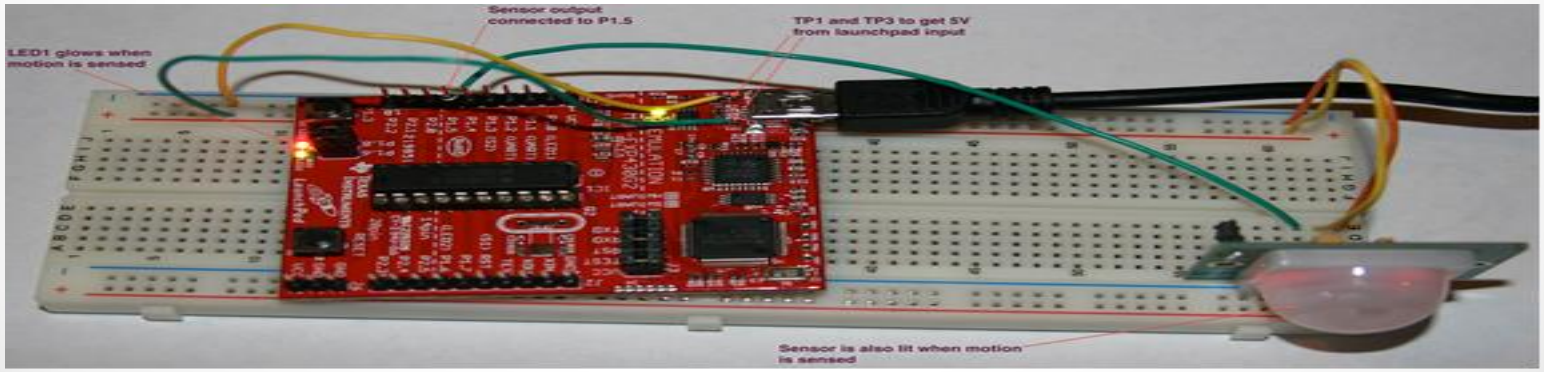
PIR Sensor

- **Progress with component**: acquired, tested.
  Covered the IR sensor with a transparent tape to reduce the detection range from 15 meters now to few inches.

- **Challenges** : N/A

- P0 is output pin with PIR signaling; HIGH = movement/LOW = no movement

- Hardware interface of component used



Capacitive Touch Sensors

Name and type of component: Standalone 5-Pad Capacitive Touch Sensor AT42QT1070

Hardware interface of component:
Standalone 5-Pad Capacitive Touch Sensor Breakout - AT42QT1070

Progress with component: Acquired and integrating with MSP430

Challenges: Finding material to create capacitive touch pads.

Relay

- It is used to turn the lock on or off depending upon the signal obtained from MSP430.
- **Name and type of component :** Solid State Relay ,VO1263AAC
- **Hardware Interface**: Transistor, Diode, Resistor
- **Progress**: Ordered
- **Challenges**: N/A
- **Next Step**: Interfacing with MSP430

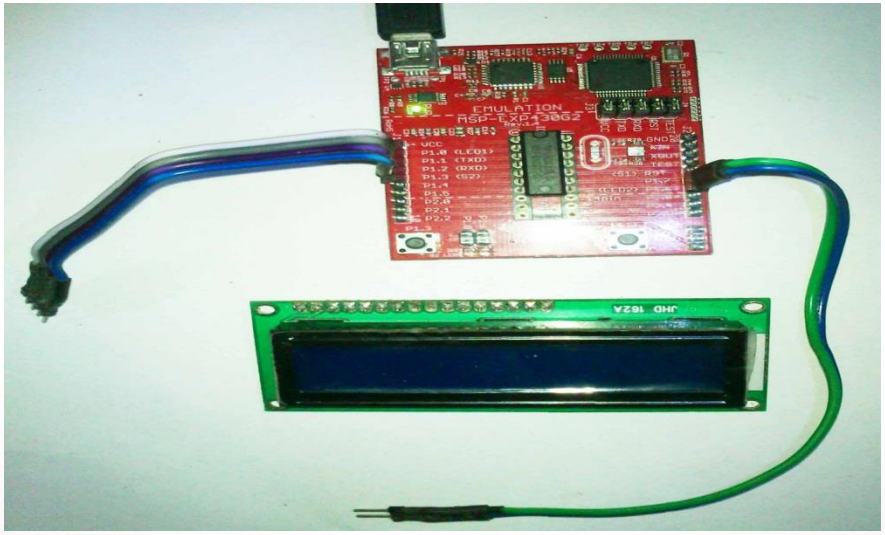
LCD

- It is used to display the status of the system. For ex: the attempt being done, if it is successful or an error has occurred.

- **Progress**: Acquired.
  The code and interfacing preparation is finished.

- **Challenges**: to display the attempt number at appropriate time.

- **Next step**: to interface and to run the program.



Project Status

- **Task division amongst team members.**

- **Chidi Okafo :** User interface developer. I will develop the user input device and interface it with the MSP430
- **Alem Abreha :** Interfacing IR sensor that will wakeup the safe from Low power mode when hand motion is detected
- **Akshay Reddy :** Manages the Power Consumption for each Interfacing device. And interfacing the relay with MSP430.
- **Rajiv Gautham** : Interfacing LEDs with PIR sensor and Capacitive Touch sensors. Responsible for documentation and presentation
- **Ashritha Rasa :** Display interfacing with MSP430 using a 16*2 LCD

- **Plan B**

- Use of **Capacitive Touch BoosterPack** as a plugin board for MSP430 launchpad instead of using individual capacitive touch sensors and LEDs
- Replace capacitive touch sensors and LCD with a Analog Resistive Touch Panel.