PICKPOCKET SECURITY SYSTEM

A SECURE SYSTEM TO PREVENT PICK-POCKETING

Problem Statement:

Pickpocketing has been a wide-spread problem throughout the entire world. In Bangladesh there happens at least 9 thefts per 100,000 people which is very agitating (source here).

So, we created a very low-cost security device which will alert the user if someone tries to pick-pocket their wallet or other valuable stuff.

Description:

The product consists of a single PCB containing IR reflective sensor, buzzer, and a microcontroller which can trigger if someone pulls the moneybag out of the pocket without consent and create a huge sound indicating theft.

It can also be attached to smartphone and be put into the pocket because of its slim design.
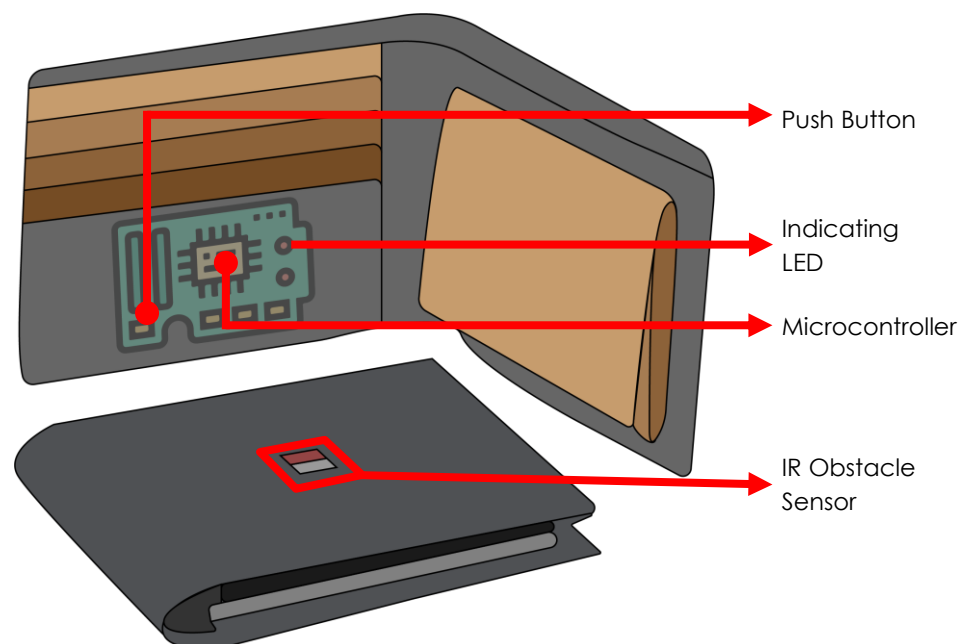

Push Button

Indicating LED

Microcontroller

IR Obstacle Sensor

Image 1.1: System view inside of a moneybag

Product View:

Power Switch

Micro-controller

LED for Status Indications

Push Button for Locking & Functions

Buzzer for Alarm

USB for Charging

Image 1.2: PCB Front View
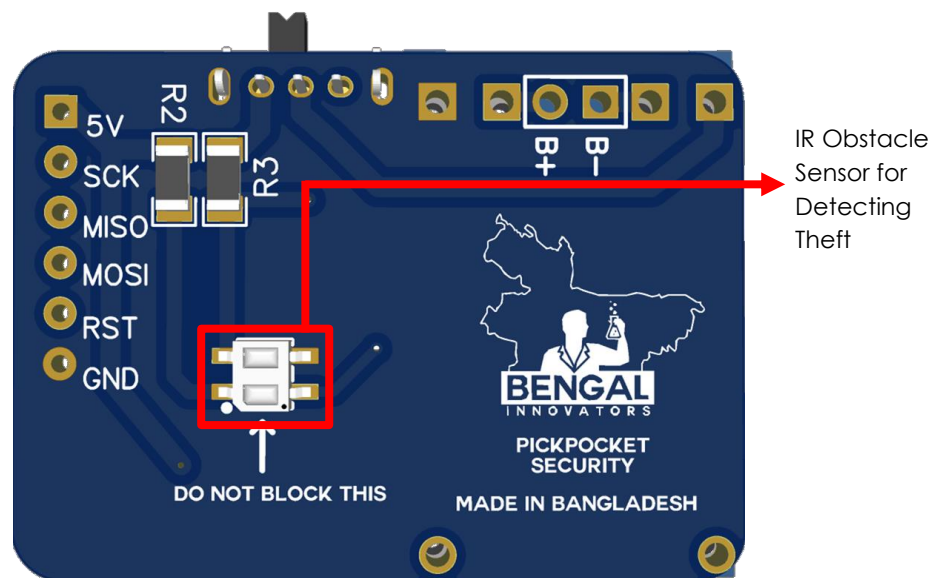

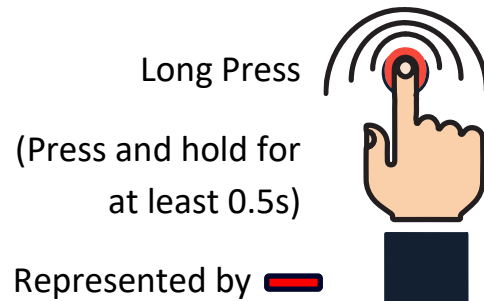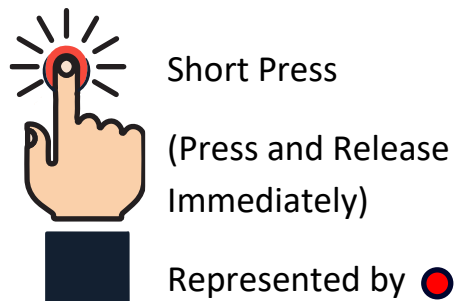IR Obstacle Sensor for Detecting Theft
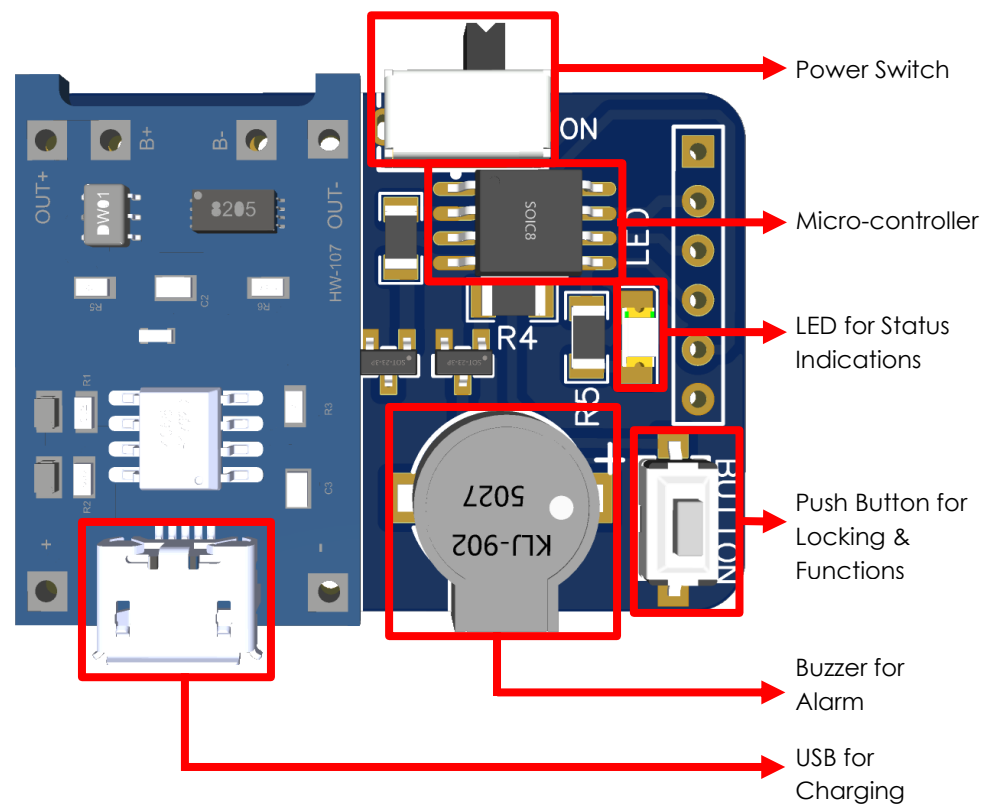
Image 1.3: PCB Back View

Working Principle:

In this product there is a single push button for activating the system and setting your password. First, let's see the way to press this button:

Short Press

(Press and Release Immediately)

Represented by 🔴

Long Press

(Press and hold for at least 0.5s)

Represented by ▬

Now there is three major modes in this device. Each mode has a specific button pressing sequence which are described below:

Modes	Button Pressing Sequence	Feedback
Short Press	🔴	The LED will turn on while you press the button and will turn off as soon as you release it. This will do nothing.
Long Press	▬	The LED will turn on as soon as you press the button but will turn off if you hold it long enough
Power on device	🔴	The device powers on and LED blinks once
Power off device	▬ ▬	This will only work in unlocked state. The device will go into sleep mode and conserve battery. The LED will do long blip twice.
Lock the device	▬ 🔴	LED will blink rapidly for 10 seconds and will lock the device.
Change Password	🔴 ▬ Then Password	This mode will only work if the device is unlocked. The LED will blink twice and then wait for you to input the new password. After successful input, the LED will do a short blip once and then long blink once.
Unlock the device	Input password only	After the device is locked, you can input your password directly to unlock the device. Successful input will make LED do one short blink and one long blink. Wrong password will do the LED three short blinks.

Password Input: The password consists of two digit which can understood from the example below. This the way we can input a password using only one button

🔴 🔴 🔴 ▬ 🔴 🔴 ▬

three taps mean 3   two taps mean 2

Long press to confirm
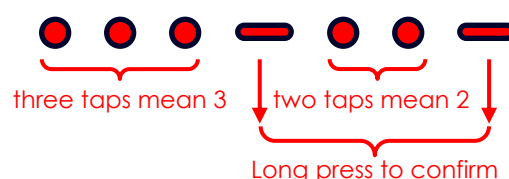
Product Specification:

- **Dimension:** 1inch * 0.8 inch (Main Circuit) and battery

- **Battery Capacity:** 5hr on guard, 72hr on standby (500 mAh)

- **Product Cost:** 1000tk

- **Water Resistance:** No water resistance

Developer Team:

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