1.1) Introduction

The Smart Pigeon Hole is a hardware system that operates by using Arduino Yun mainboard, Temboo account and with Adjustable Infrared Sensor that will inform the user about the mail that arrived in the pigeonhole. When the letters cross the Adjustable Infrared sensor’s alignment, it will send a trigger to the Arduino Yun mainboard. It does operate by sending Short Messaging System (SMS) to inform the user about the arriving mail. This system is more efficient. It’s very useful because this system will send the SMS without any credit charges to the user because this system used Temboo’s API system.
Besides that, it also sends alert if the user’s pigeonhole is full. This system will send a notification to a user to take out the letter. This part will be using a digital sensor that can detect the range in the pigeonhole. All the notification's process was programmed in the Arduino IDE platform, and it will be uploaded to the Arduino Yun mainboard that act as a web server to operate the entire sensor. This might be an interesting device and helpful product.

1.2) Problem Statements

There are the several problems that have been identity in this project. This problem statement will be the core statements in replacing the existing pigeonhole mailbox system which are:

i) Manually checking system.

Every day, the user needs to check at their pigeonhole, either they got mail or not. If the pigeonhole is far from the user than it is difficult to them to check regularly and sometimes they forgot the important mail inside

ii) Waste time.

If the user’s pigeon hole is far from the user place then, it might take a little time to collect their mail. If they are waiting for important mail, they might check the pigeon hole regularly. It is frustrated if they come from the high floor and looking from their mail, but the mail is not there yet.

iii) Inconvenience

If the users forgot the mail inside the pigeonhole, the mail will be there as long as the users remember to check it. It will lead to inconveniency if the mail is an urgent one.
1.3) Objective

The main purpose of the Smart Pigeonhole is to improve the manual checking system to the digital way by sending notification about the mail arrived to the user through a short messaging system. There are several objectives that will be the goal that need to achieve:

- To build a pigeonhole programmed response by using suitable device and software.
- To reduce energy and time use in mailbox checking.
- To give an alert to a user if the pigeonhole is full and informs to collect the mail.

1.4) Scope.

i) The User. (pigeonhole owner)
When using this system, users do not have to check their mail regularly. The checking process will be covered by the system, and the user just has to wait for the notification to arrive.

ii) This project acts as a mail alert only.
This Smart Pigeonhole System is for the mail alerts only. It will not function for parcel detection.

iii) Send a text message to notify the user.
This system will send text messages to a user about the mail arrive, and it is also will send a message to notify a user if their pigeonhole is full. The users still need manually to take the mail from the pigeonhole.