New Generation Smart Home System (TD1b-15)

Student: Chan Wing Yeung Kan Chun Kit
Supervisor's: Dr. Danny Tsang

Project Overview

In recent years, smart home system was spreading quickly with the progress of technology in foreign countries. Users concern most in cost of changing their home into smart home system. However, popularity and level of technology keeps the price of smart home system high.

In this project, we found new way to develop central hubs of smart home system. We chose Raspberry Pi 3, a credit-card sized computer chip with dramatically low cost, to deal with data and executions. We tried to make something similar to products in the market costing a couple of thousand dollars.

Objectives:

This project focuses on the design of central hub, connections between the hub and Internet, and connections between the hub and devices being controlled by the system. The objective of our project is to build a new hub for fundamental needs in a simple smart home system.

Compared with existing products in Hong Kong, the cost of our new hub aims to be lower, while having similar functionalities and compatibility levels.

Methodology

The design of our smart home system mainly consists of a hub, which exchange and translate information between user and items of the system, an application for users to control their smart home system, and also a varies of electric compliances and security system controlled by the user through the above parts.

Controlling process

Firstly, users access to their application in their smart phones by their account and password. They then can control some button in the application. The application was connected with the Hub through internet. It will give responding signals to the Hub and control its GPIO, in order to control devices at users’ home.

Result

This is an overview of our project. With the help of App, we are able to do the followings:

- Switch On/off LED
- Change Speed of Fan
- View Live CCTV