



Smart Home System

As presented by the Opcoders

Opcoder's Member:

Marwa Mohammed Hassan
Vincent Chinedu Obigwe

Abeeb Opeyemi Nureni
Amit Chakma

Charles Arsenal Okere
Miguel Rodriguez Delgado

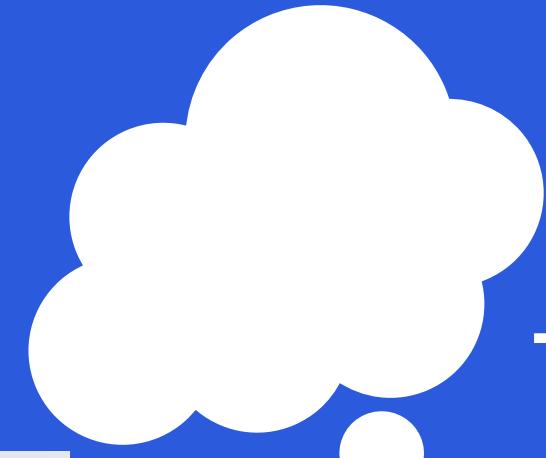
Presentation Outline

Key topics for discussion

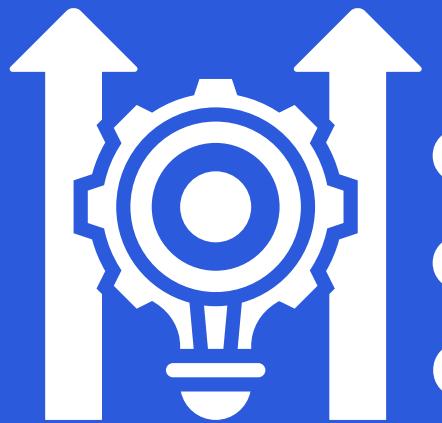
Problem
What is a smart home
Examples
Components of a smart home
Communication protocols
Pros and Cons
Summary







The thought of saving the stress of turning on our smart devices at home at different locations of our home, having control of our home while we are away, check for intruders and so on lead to the development of a smart home.

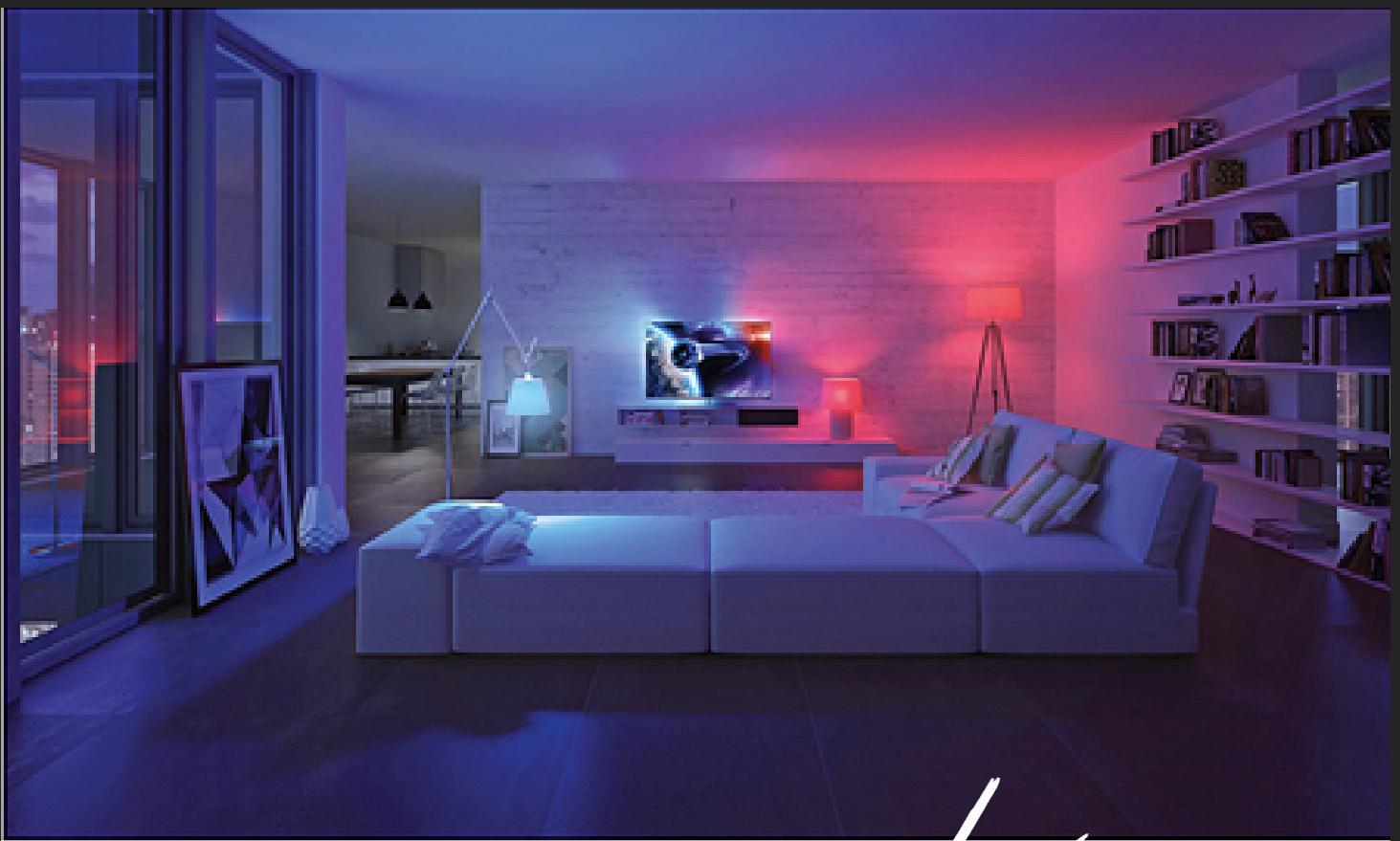


a smart home is the use of smart technology to automate some important tasks and operate the devices at home efficiently and as such the smart devices could be lighting, heating, laundry machines, smart playback devices such as TV, DVD players etc.



Examples of a Smart Home System

Presentations are communication tools that can be used as lectures.



Smart Lighting

Smart
Appliances



Home Security and Safety

HAVC



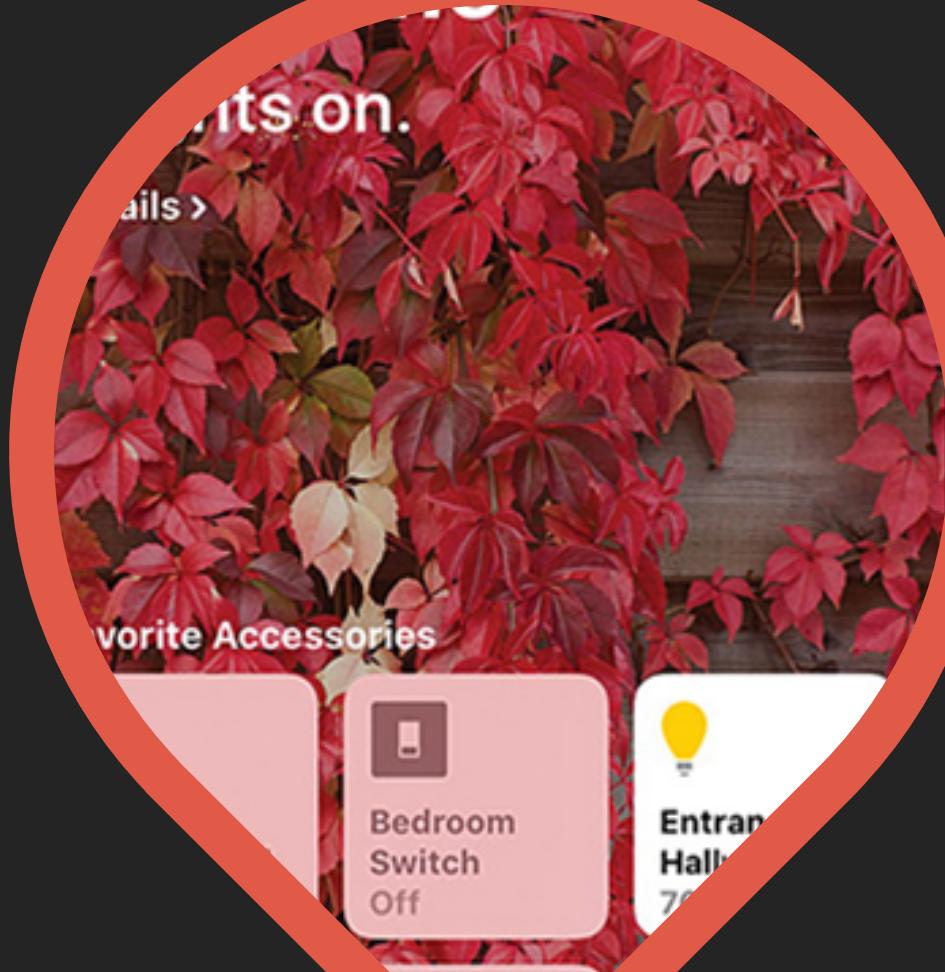
Disability / Elderly

*Smart Home Technology for
persons with disability and
elderly*



Smart

Home Controllers





Components

OF A SMART HOME

ALL SMART HOMES MUST CONTAIN THREE ELEMENTS:

Internal Network

Internal network is the basis of a smart home, and it can be wire, cable and wireless

Intelligent Control

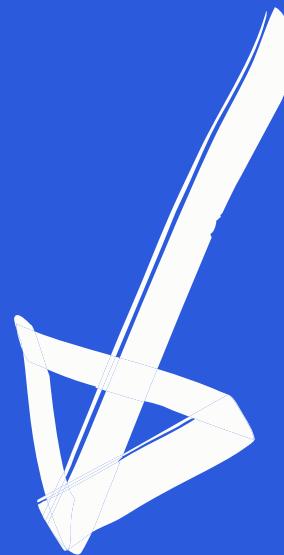
Intelligent control means gateways to manage the systems. It can be dashboard, remote or phone app.

Home Automation

Home automation means products within the homes and links to services and systems outside the home.

Internal Networks

of a Smart Home System



Hardware



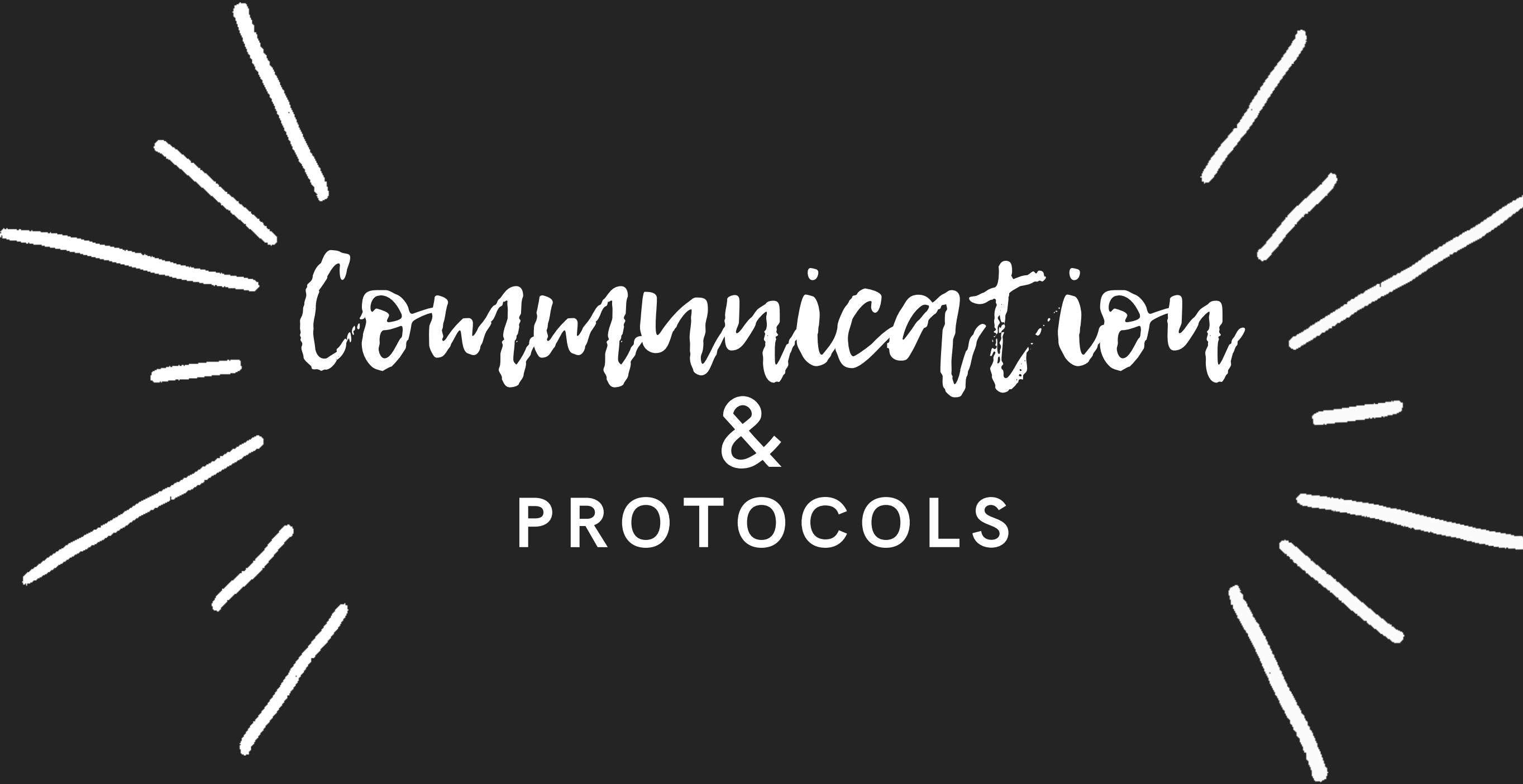
Software

Hardware Components

The hardware components are the physical components of the home system. This includes but not limited to the Micro Controller etc

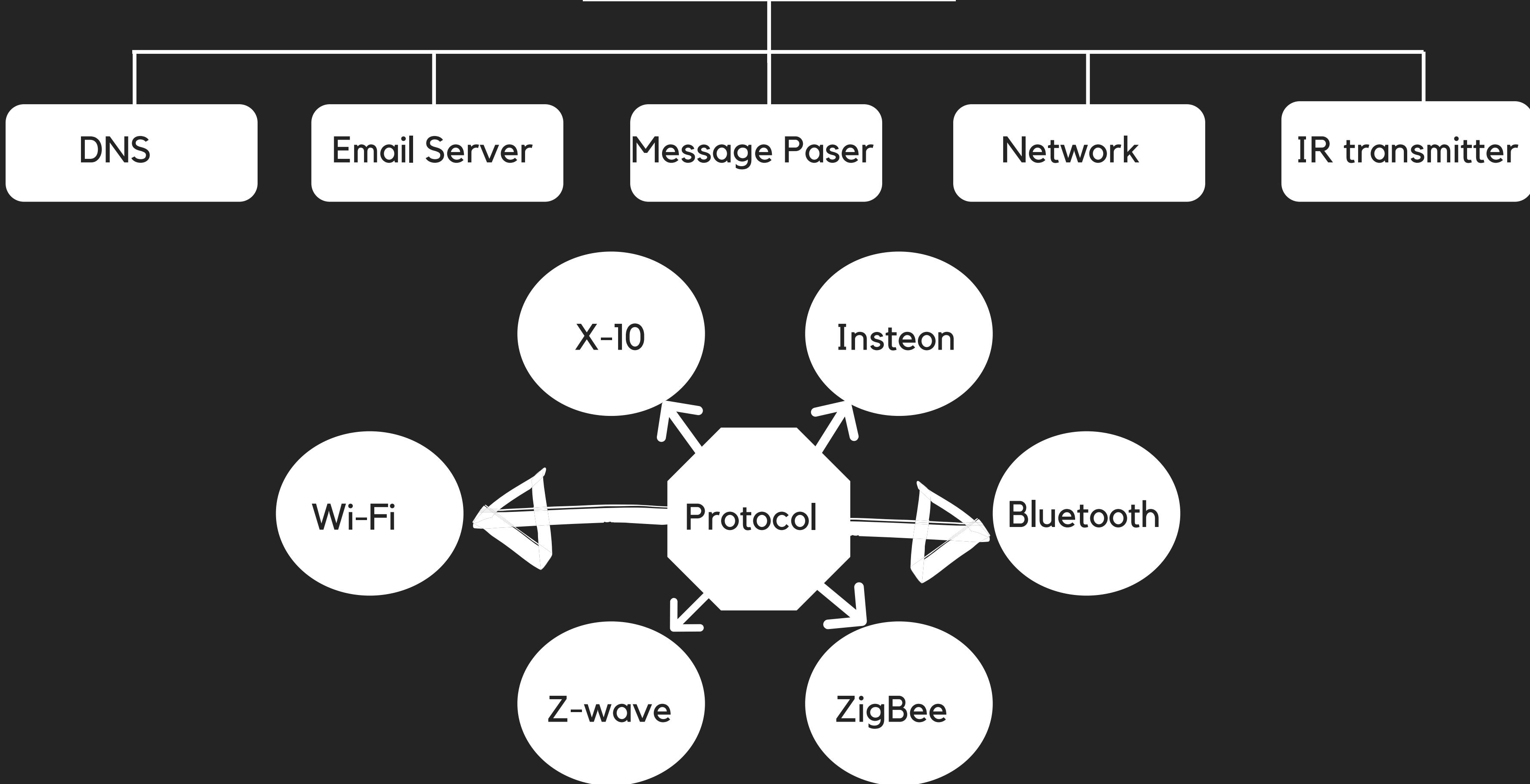
Software Components

The software is the program code that is stored in the micro controller memory and always executed for a task to be carried out.



Communication & PROTOCOLS

Requirements



Arduino - Raspberry Pi Runs over Linux OS

Advantage

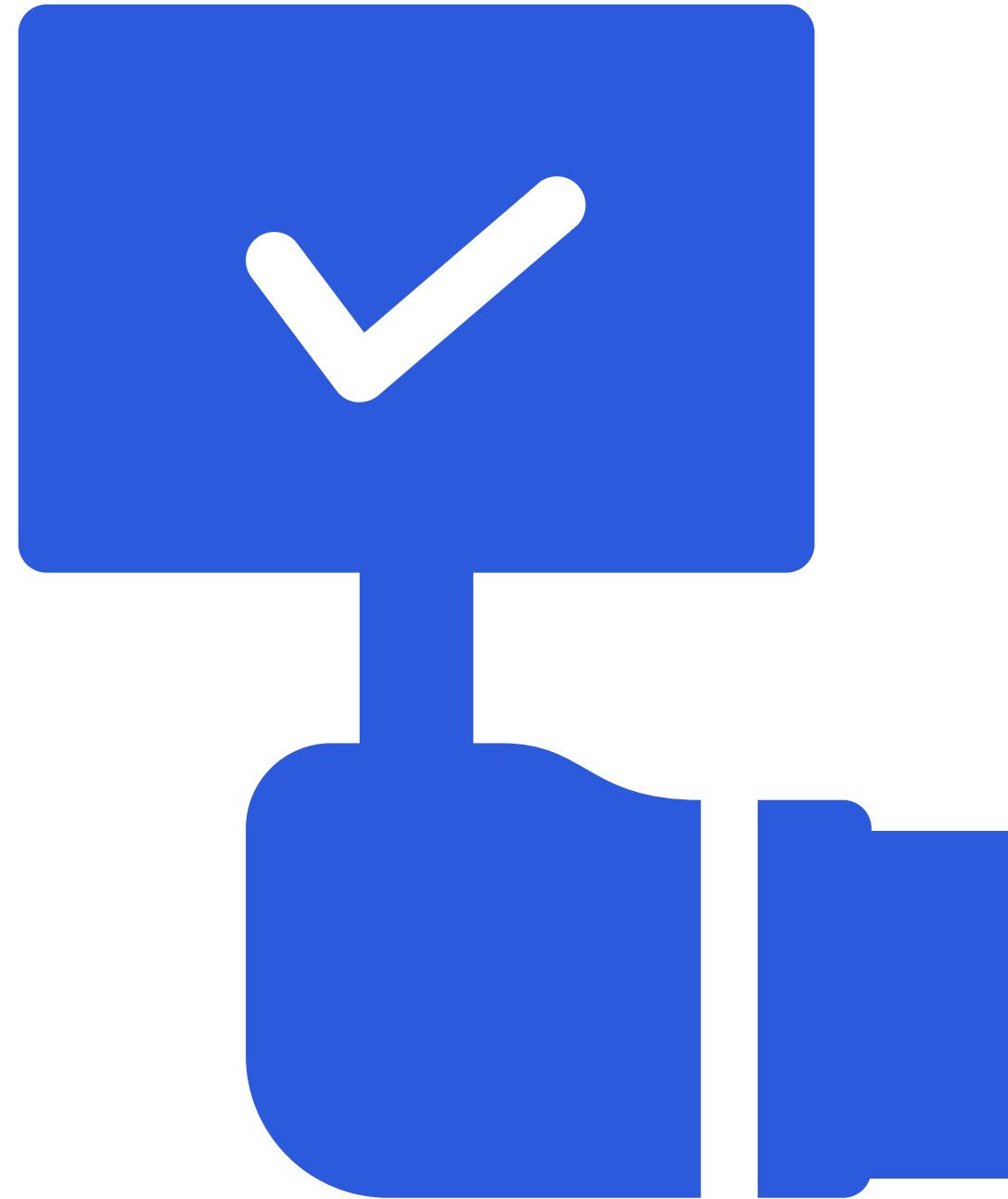
Not very possible for the software to break.

Disadvantage

Linux security is the most vulnerable since Linux provides access to every file in the device.



Pros & Cons OF SMART HOME



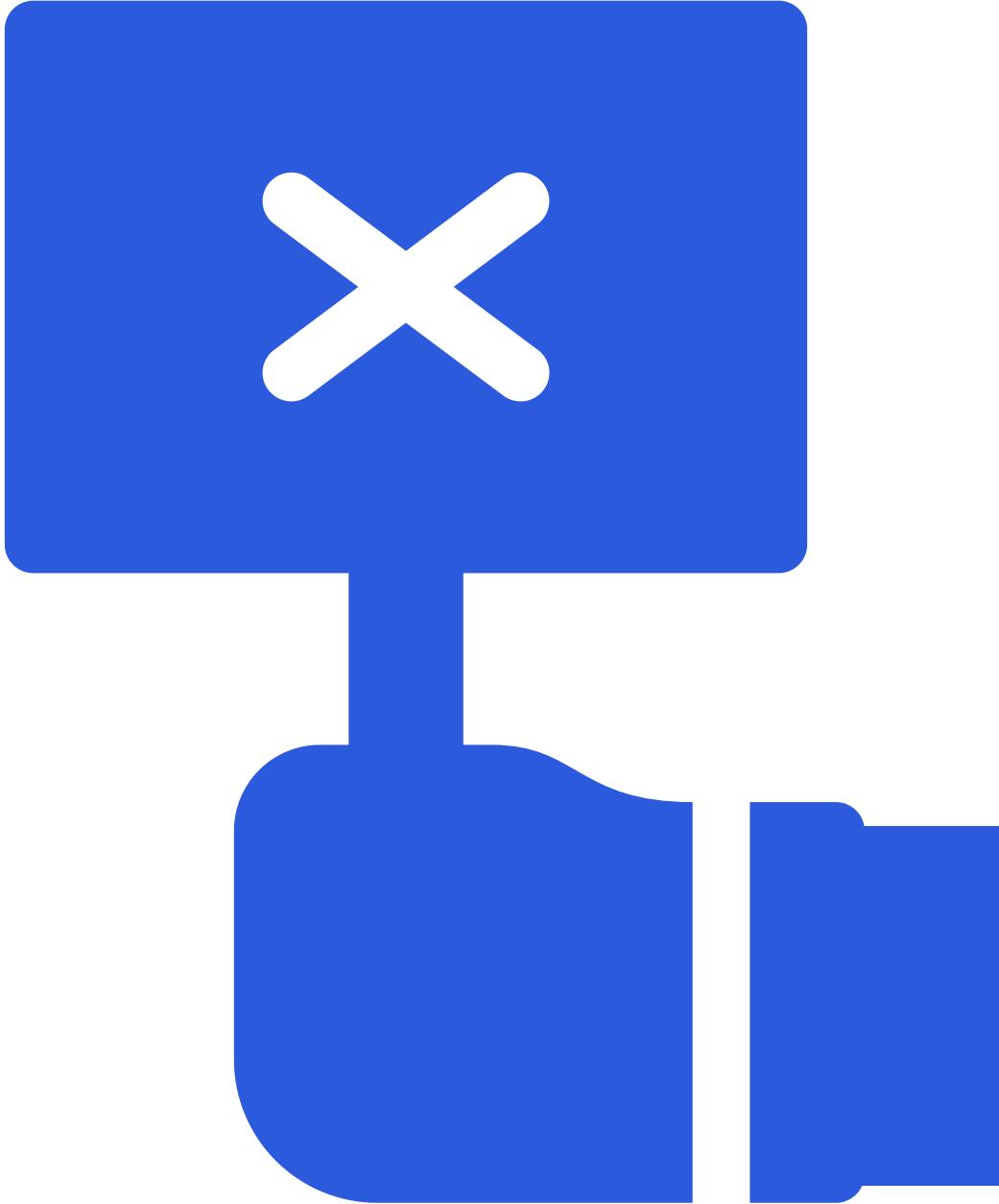
Pros of Smart Home System

Convenience- Controlling your home with a tap on your phone was like a dream. All the devices can be automated and controlled based on needs.

Security- Smart locks, security camera, motion controls and controlling them through your phone or a central system makes home much secure.

Saving energy and money - homes became automated, smart faucets can stop the overflowing water and smart TV knows when you are asleep and turn them off. switching on the light to cleaning the house can be done just from a click and help to cut electricity cost. Now owners can work outside without any worry.

Cons of Smart Home System

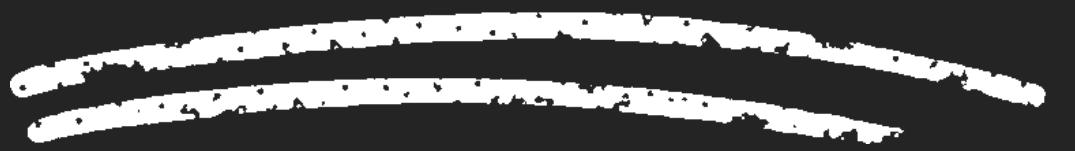


Hacking - Connecting all the devices through internet might lead to hacking. As smart home technologies are still on development and even the hackers are getting smarter.

Cost - Smart home don't come at a cheap price. Accessories are expensive not everyone can afford them.

Misuse by the manufacturers - Company might secretly collect information about you for their efficient advertising.

Summary



In conclusion

Smart home systems are functional systems that
is more recently embeded in all home
appliances. Care should be taken to avoid misuse
and data exposure.

- Obigwe Vincent

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