

Experiment no :- 12

Aim :- Develop a real time application like smart home following requirements: when user enters into house required appliances like fan, light, should be switch on. Appliances should also get controlled remotely by a suitable web interface.

Theory :-

Basics - send emails using python :-

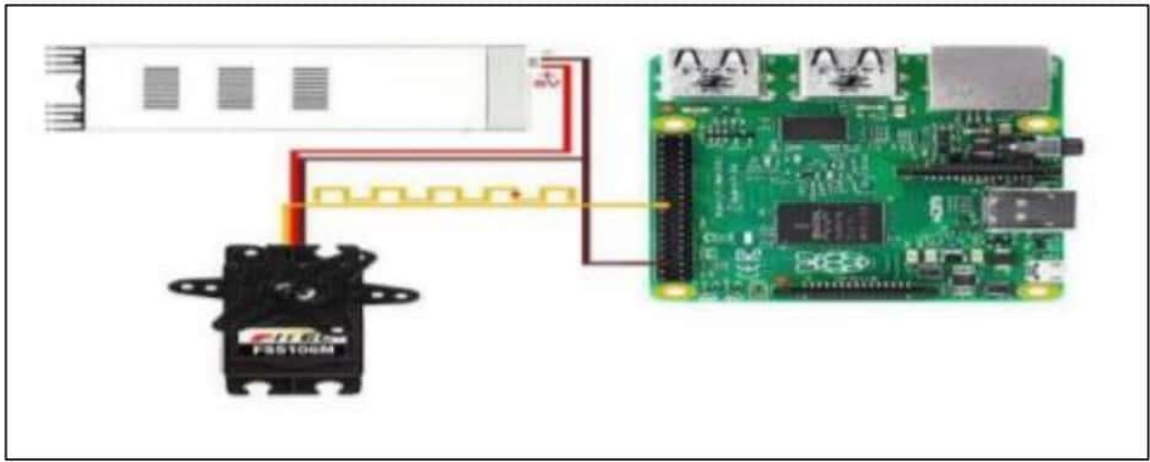
1. smtplib module of python is basically all you need to send simple emails, without any subject line or such additional info.
2. But for real emails, you do need a subject line and lots of info - maybe even pictures and attachments.
3. This is where python's email package comes in. Keep in mind that it is not possible to send an email message using email package alone.

How to send emails :-

1. Set up SMTP server & log into your account.
2. Create MIME multipart message object and load it with appropriate headers for from To, and sub fields.
3. Add your message body.
4. Send message using SMTP server object.

The smtplib :-

1. smtplib module defines SMTP client session object that can be used to send mail to any internet machine with SMTP.
2. SMTP stands for Simple Mail Transfer Protocol. The smtplib modules



is useful for communicating with mail servers to send mail.

3. Sending mail is done with python smtplib using SMTP server

4. Actual usage varies depending on complexity of email and setting of email server, instructions here are based on sending email through Gmail.

Servo motor :-

1. A servo motor is a combination of DC motor, position control system & gears. We will be using SG90 servo motor which is one of the popular & cheapest one.

2. It has mainly 3 wires, one is positive voltage, another is ground and last one is position setting.

3. A servo motor is a combination of DC motor, position control system and gears. SG90 is a 180 degree servo. So with this servo we can position axis from 0-180 degrees.

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Steps :-

1. Create lock/unlock application to control servo motor lock. Change its owner and group as www-data. Location: /var/www/html

2. Write application to read image & send it as email attachment to the user. Location: /home/pi.

3. Write application using HTML-PHP to control the servo motor lock. Location: /var/www/html

Conclusion :-

Thus, we have developed smart application for smart home system.