Experiment No: 12

Aim: Develop a Real time application like Smart house with following requirements. Where user enters into house the required appliances like fan, light should be switched ON. Appliances should also get controlled remotely by a suitable web interface. The objective of this application is student should construct complete Smart application in group.

Theory:

Basic - send emails using Python:

1. The smtplib module of Python is basically all you need to send simple emails, without any subject line or such add'n information.
2. But for real emails, you do need a subject line & lots of information - may be even pictures & attachments.
3. This is where python's email package come in keep in mind that it's not possible to send an email message using the email package alone. You need a combination of both email & smptlib.

How to send emails?

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

The Smtplib:

1. The Smtplib module defines an SMTP client session object that can be used to send mail to any internet machine with an SMTP or ESMTP listener daemon.
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's Smtplib using an SMTP Server.
4. Actual usage varies depending on complexity of the email & settings of the email server, the instruction here are based on sending email through Gmail.

Servo Motor:

1. A Servo Motor is a combination of DC Motor, position control system & gears. Servo have many application in the modern world & with that, they are available in diff shapes & sizes. We will be using Sg90 Servo Motor which is one of the popular & cheapest one. Sg90 is a 180 degree Servo. So with this servo we can position the axis from 0-180 degrees.
2. A Servo Motor Mainly has three wires, one is for positive voltage, another is for ground & last one is for passing position setting. The red wire is connected to power, brown wire is connected to ground & orange wire is connected to signal.

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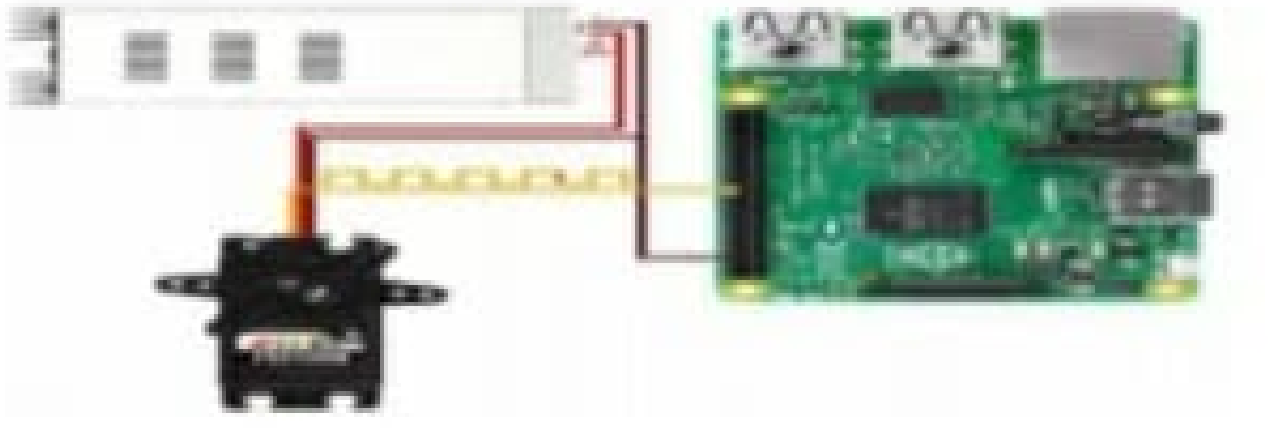

Fig

Steps.

- Create the lock/unlock application to control the servo motor lock. change it's owner & group as www-data location: /var/www/HTML.
- Write the application to read the image & send it as email attachment to the user location: /home/pi.
- 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.