## Practical no: 12

**Title: Develop a Real time application like smart home with following requirements: When 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.**


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Practical 12

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## Aim

Develop a Real time application like smart home with following requirements: When ~~end~~ 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 object of this application is student should construct complete Smart application. in group.

## Theory

Basics - ~~Send~~ Send Emails using Python.

1. The 'smtpib' module of python is basically all you need to send emails, without any subject line or such additional information.
2. But for real emails, you do need a subject line & lots of information - maybe even pictures & attchments
3. This is where Python's email package comes in. Keep in mind that it is not possible to send an email message using the email package alone. You need a combination of both email & smtplib.

## How to send email?

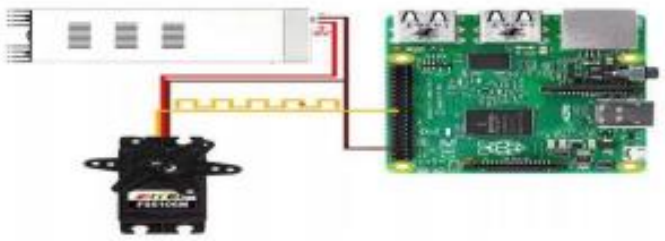
1. Set up the SMTP server and log into your account.
2. Create the MIME Multipart msg. object & load it with appropriate headers for from, To, and Subject fields.
3. Add your message body.
4. Send the message using the SMTP server object.

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

## Servo Motor

1. A servo motor is a combination of DC motor, position control system and gears. Servos have many applications in morden world and with that, they are available in different shapes and sizes. We will be using SG90 servo Motor which is one of the popular and 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 has three wires, one is for positive voltage and another is for ground and last one is for position setting. Red wire is connected to power, Brown wire is connected to ground & orange is connected to signal.



Fig

3. A servo motor is a combination of DC motor, position control system and gears. Servos have many applications in the Morden

Steps

1) Write the application to read the image and send it as email attachment to user.
Location: /home/pi
2) Write an application using HTML-PHP to control the servo motor lock.
Location: /var/www/html.

Conclusion

Thus, we have developed short application for smart Home System.