Project Report

<u>VS Outlook : An Email Client</u>

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1. Introduction

An email client, email reader, or more formally mail user agent (MUA), is a computer program used to access and manage a user's email account. The term can refer to any system capable of accessing the user's email mailbox, regardless of it being a mail user agent, a relaying server, or a human typing on a terminal.

A user's mailbox can be accessed in two dedicated ways. The Post Office Protocol (POP) allows the user to download messages one at a time and only deletes them from the server after they have been successfully saved on local storage. It is possible to leave messages on the server to permit another client to access them.

Alternatively, the Internet Message Access Protocol (IMAP) allows users to keep messages on the server, flagging them as appropriate. IMAP provides folders and sub-folders, which can be shared among different users with possibly different access rights.[1]

2. Features of VS Outlook

VS Outlook provides important features that an email client provides. A good interface and cross-platform support adds to its uses. At the start, the user is asked for the server protocol(POP3,IMAP,SMTP) and the username and password(masked). An important feature of VS Outlook is it checks for internet connection as soon as the user tries to log in. This feature allows it to function in two modes, as follows:

2.1 Online Mode

In online mode, it first checks if the user already has logged in once or not. If not, it creates directories for local storage of mails (inbox & sentmails) particularly for that username. Next, it saves the new mails of inbox from server(along with attachments) and saves them in the user's local storage space. Then at the main window, the list of inbox mails is displayed which includes the mails from the local storage.

At the main window, following buttons are present:

- INBOX – Displays the updated list(from server) of inbox mails along with local storage.
- FORWARD – It allows the selected mail from the list of mails to be forwarded(or first mail by default). An important feature is - it includes the body & subject of the selected mail automatically. Also, as it is pressed, a window pops up to select attachment, if any. CC and BCC are also supported.

- REPLY – It allows to reply to the selected mail. It includes the email address & body of the selected mail automatically. Also, as it is pressed, a window pops up to select attachment, if any. CC and BCC are also supported.
- COMPOSE – It allows to compose and send mails along with attachments. CC and BCC are also supported.
- DISPLAY MAIL – It displays the selected mail in a new window.
- SENT MAILS – It displays the list of sent mails and allows the above functionalities on them.
- EXIT – Exits the program.

2.2 Offline Mode

In offline mode, VS Outlook looks for the saved mails on the local storage of the user and lists them. If not, it simply makes new directories for this username. It can display the saved mails in this mode.

Specifications:

VS email client currently supports POP3(Post Office Protocol) to retrieve emails from the remote server and SMTP(Simple Mail Transfer Protocol) to send mails to the specified email addresses.

3. Implementation Details

VS Outlook has been implemented completely using Python and its modules.

Some important libraries that have been to used are as follows:
- poplib - This module defines a class, `POP3`, which encapsulates a connection to a POP3 server and implements the protocol as defined in **RFC 1725**.[2]
- smtplib - The `smtp` module defines an SMTP client session object that can be used to send mail to any Internet machine and implements the protocol as defined in **RFC 821.**[2]
- email - The `email` package is a library for managing email messages, including MIME and other **RFC 2822**-based message documents. The primary distinguishing feature of the `email` package is that it splits the parsing and generating of email messages from the internal object model representation of email.[2]
- Tkinter - Tkinter is Python's standard GUI (Graphical User Interface) package. It provides support for many modules and has been for the GUI.[2]
- urllib, urllib2 - This module provides a high-level interface for fetching data across the World Wide Web. Used to check internet connection here.[2]

The code is in two files namely vsgui.py and vsoutlook.py. The vsgui.py has the functions for the GUI and vsoutlook has the functions for rest purposes. Some functions for GUI have been derived from a gui library easygui.[3]

Different functions and their uses have been described as follows -
- checknet() : it checks whether the internet is working or not using the urllib library functions by trying to connect to a site.
- ConnectionInfo() : it takes the username, password and server details from the user as soon as VSoutlook is started and creates directories for this username, if not present.
- sendandsave() : it takes as argument various details of the mail to be sent and sends it and saves a copy of the email in ./SENTMAILS/username/ folder folder with name as details of email (including Date-time which makes sure of unique names) and in that folder, the body of the mail is kept in a file named 'body'.
- downloadinbox() : it downloads the mails in inbox from the server and saves them in ./INBOX/username as similar to sendandsave() and along with attachments.
- Home() : it is the central windows' function which controls which function to call and when. Depending upon the last button press, it decides whether to display sent mails or the inbox mails.
- Other functions include functions used for the GUI-
  buttonbox() - it creates a button box as per the arguments passed to it. In our implementation, it includes buttons for above purposes along with the mail lists as radiobuttons to select mails.
  multpasswordbox()- used to create a window which takes input in Entry fields(one line inputs) and the last field(which we use for password is masked with *).
  textbox()- it is used to display text which is passed as an argument to it.
  msgbox()- it simply displays the message argument in a new window.
  mycomposebox()- it displays a new window for the user to enter details of the mail to be sent. It takes as arguments, the different values which have to be shown by default in the email which are passed as arguments.

4. Testing

VSOutlook has been tested and works fine with iitk servers:
- newmailhost.cc.iitk.ac.in – mail retrieval over POP3 protocol.
- smtp.cc.iitk.ac.in – mail sending over SMTP protocol.

5. References:

[1]   Wikipedia : http://en.wikipedia.org/wiki/Email_client
[2]   Python Documentation : http://docs.python.org