

COMP132

Assignment 2

Project Report

JANUARY 21, 2021

KEREM GİRENES
69671



Structures

mail_t

mail_t has the following fields:

- struct user *sender Sender pointer
- char header[3][50] Receiver address, subject, and date.
- char content[300] Mail content
- struct mail *next Pointer to next mail in inbox (Extra Feature)

user_t

user_t has the following fields:

- char address[40] Mail address
- struct mailServer *server Server pointer to the server user belongs
- struct mail *inbox Inbox pointer
- struct user *next Pointer to next user in server

mailServer_t

mailServer_t has the following fields:

- char domain[20] Domain name
- struct user *usersList Users List pointer

Functions

void caesarEncrypt

Method explanation:

This function encrypts the given content with the encryption key.

caesarEncrypt has the following parameters:

- key Encryption key.
- content Content to be encrypted.

void caesarDecrypt

Method explanation:

This function decrypts the given content with the decryption key.

caesarDecrypt has the following parameters:

- key Decryption key.
- content Content to be decrypted.

void sendEmail

Method explanation:

This is the function to construct an email based on user inputs.

sendEmail has the following parameters:

- server1, server2, server3 Servers to go through

void addMail

Method explanation:

Adds the mail to receiver's inbox.

addMail has the following parameters:

- mail Mail pointer to the mail to be added
- receiver User pointer to the owner of the inbox to which the mail will be added

void displayMail

Method explanation:

Displays the decrypted content of the given mail.

displayMail has the following parameters:

- mail Mail to be displayed

void displayLastFive

Method explanation:

Displays the last five mails of the given user.

displayLastFive has the following parameters:

- user User whose 5 mails will be displayed.

void searchKeyword

Method explanation:

This function searches the given keyword among the mail headers of mails in the given user's inbox, and then prints them.

searchKeyword has the following parameters:

- user User whose inbox will be searched through.
- keyword Keyword to be searched in the user's inbox.

void createUser

Method explanation:

Creates user with given address, adds it to server's user linked list.

createUser has the following parameters:

- address Mail address of the user.
- server Server which the user will be added to.

void createServer

Method explanation:

Creates server with given domain name.

createServer has the following parameters:

- server Server pointer.
- domain Domain name of the server.

void addHardCodedMail

Method explanation:

Adds a hard coded mail with given properties to the given user's inbox.

createServer has the following parameters:

- sender Sender of the mail.
- receiver Receiver of the mail.
- subject Subject of the mail.
- date Date of the mail.
- content Content of the mail.
- key Encryption key of the mail.

Main

We first create 3 servers and populate each with 3 users.

Then we add 5 hard coded mails to kgirenes18@ku.edu.tr's mail inbox.

Then we display the last 5 mails in the inbox of kgirenes18@ku.edu.tr.

Then we simulate sending a mail.

Finally we look for a keyword given by user in kgirenes18@ku.edu.tr's mail inbox.

NOTES

In Eclipse, the project builds with no errors and warnings. However, it terminates on run.

In an online c compiler (https://www.onlinegdb.com/online_c_compiler), the code works as intended.