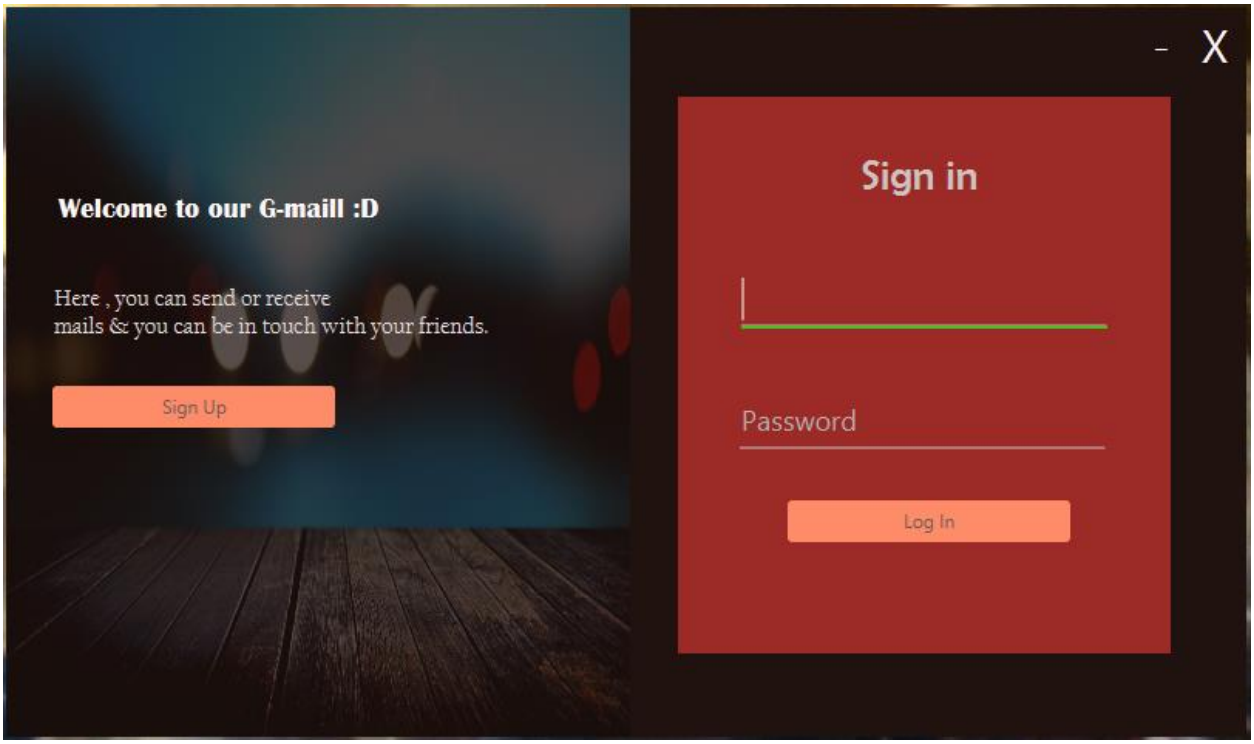
Alexandria University
Faculty of Engineering
Computer and Systems Engineering Department
Data Structure 1

MAIL SERVER



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Arsany Atef (08)

Professor:

Professor Khaled Nagy

TA:

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-Description and features

- We made a mail server like a Gmail which the person could make an account on it and communicate with other people by sending them emails, attachments, images, …..etc.
- The person enters our mail, if he has an account he will sign in, if he has not an account he will sign up and his information will be saved as email, password and his name.
- The first page which will appear to him is a frame that contains all features like send mails or view inbox etc..
- If he wants to send emails he will press on compose to send emails, attachments or images. He enters the email of the person he would send to him, enters subject of the sent mail and upload the mail that he wants to send.

- If there is an error in the name of the receiver’s email it will not sent but will be put in the Drafts.
- If the person who made the account wants to delete emails from his own, he will delete it and it will be put in the trash folders which will be deleted from it after 30 days from putting it in the trash folder.
- If the person who made the email wants to see the sent mails which he sent, he will press on the sent mails to see them.
- The person could sort the emails depending on the priority.
- The person could search on emails.

- Assumptions and bonus parts:

- We assume that all users have one or two accounts and there is all features of any mail app like send mails or receive emails or send attachments.
- When you open the application you are required to enter your email and password and if you don't have an email you should enter sign up button to make a new account.
- We assumed that the user should enter his information so that he could edit it or view them at least.
- Each user will have a file called "data.txt" in folder user, this file contains his data.
- Each user can modify his name and password.
- We assume that the user when Compose a message to any user. he should enter: the mail, subject, data, priority & attachments.
- The user does not insert a subject for his message to will be recorded as " ", and the user does not insert a priority for his message to will be recorded as 0.

- If the user wants to delete a message from his, he should choose the message and delete one by one.
- If the user wants to compose to many users he should split between the name by " , " .
- The user can display the contacts who send to them or receive from them.
- The user can filter the messages by subject or name.
- He can choose one contact from his contacts and send to him immediately.
- We assumed that the user may want to log out from his mail so we provide a Log out Button.

- Data Structure usage:

- We use stack in making quick sort and binary search.
- Priority queue to sort the emails according to their priority.
- Doubly Linked list used for reading from files, displaying on GUI, return from the functions of the quick sort and search.

- Main module of your program:

- **inbox:**

  contain user's received messages.

- **Sent Mails:**

  contain user's sent messages.

- **Compose:**

  Helps user to send emails to other people.

- **Drafts:**

  contain user's wrong messages which had errors.

- **Info:**

  contain user's information.

- **Contacts:**

  contain user's sent and received emails which he communicates with them.

- **Log out:**

  Help user to log out from the mail.

- **Filters:**

  Help the user to filter email depending on subject or name

- Algorithms (Pseudo Code):

- Sign in:

  This function check for right email and pass and give access if that right

  For all mails in the file

  If mail is right

  Check for password

  If password is write

  Go to home page

  Else

  Back to sign in

- Sign up:

  This function makes an account in the mail but

  Firstly take all input from a text field

  Check that all is right

  For all signed emails

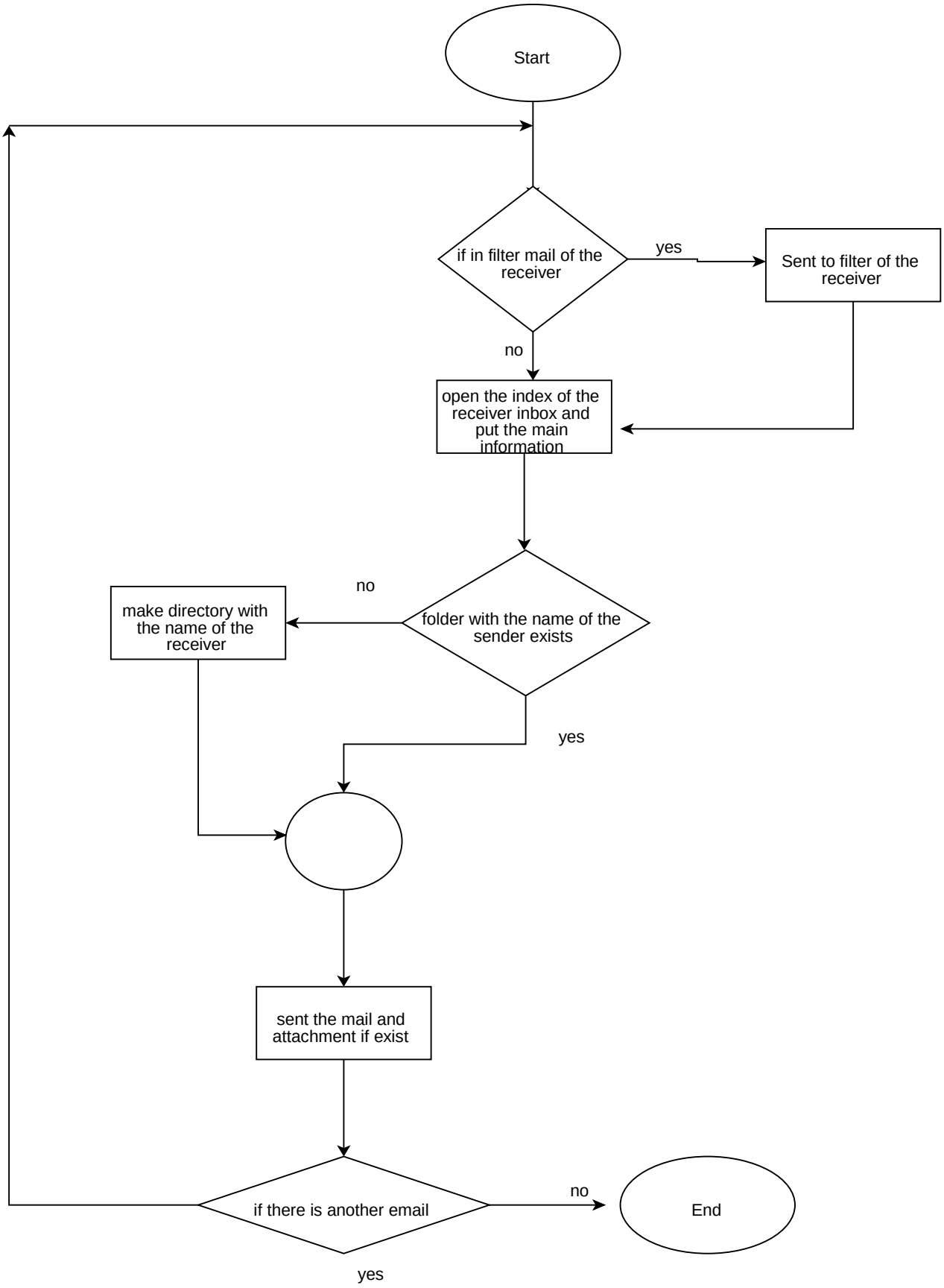
  If this name not exist)

  Make account

  Else

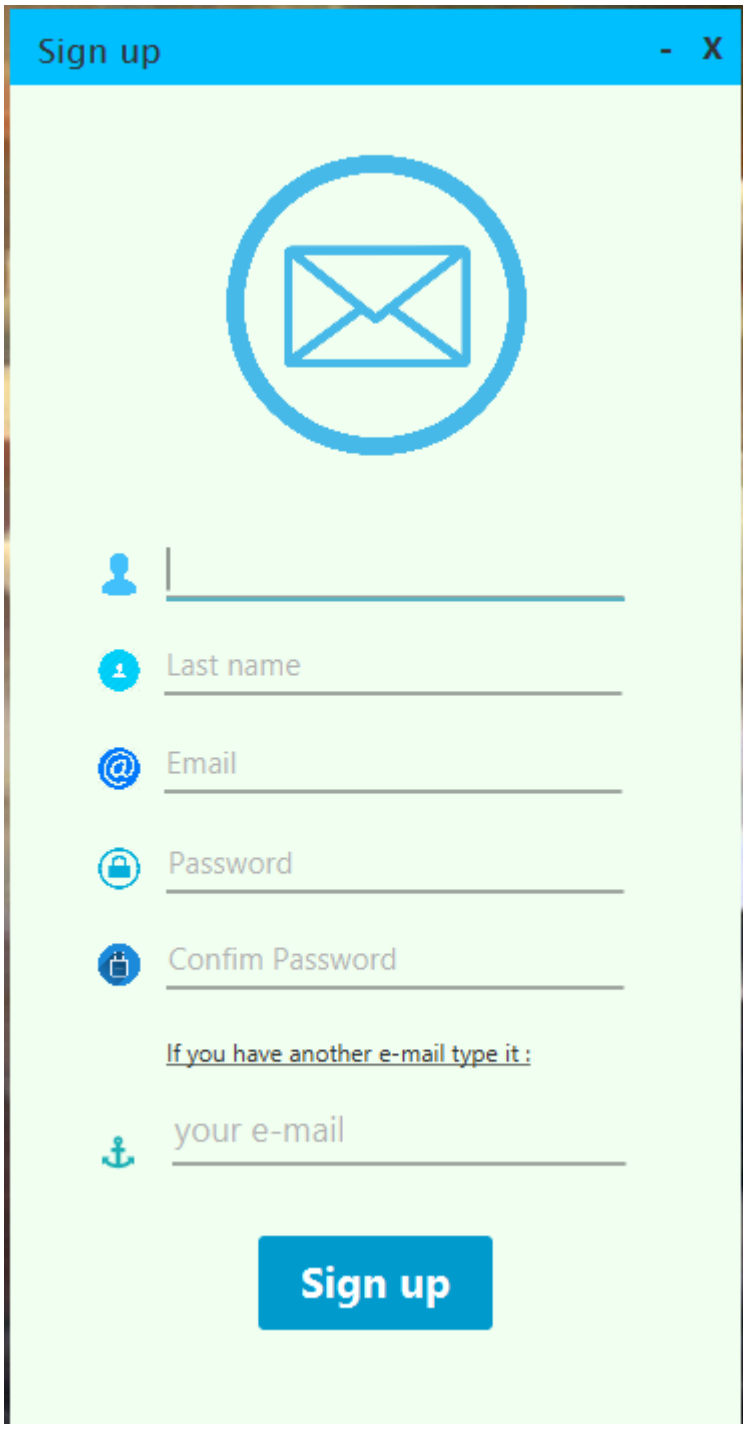
  The account is exist and return to sign in

- Compose:

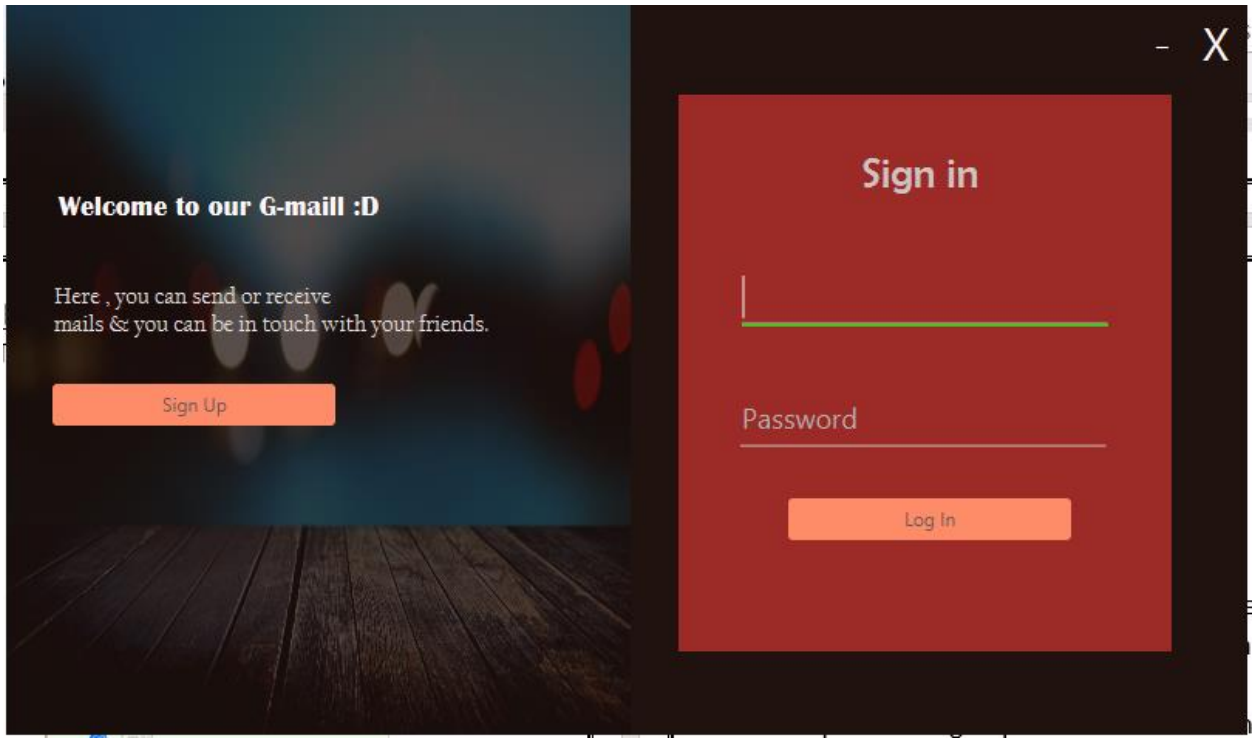

Start
if in filter mail of the receiver
yes
Sent to filter of the receiver
no
open the index of the receiver inbox and put the main information
folder with the name of the sender exists
no
make directory with the name of the receiver
yes
sent the mail and attachment if exist
if there is another email
no
End
yes

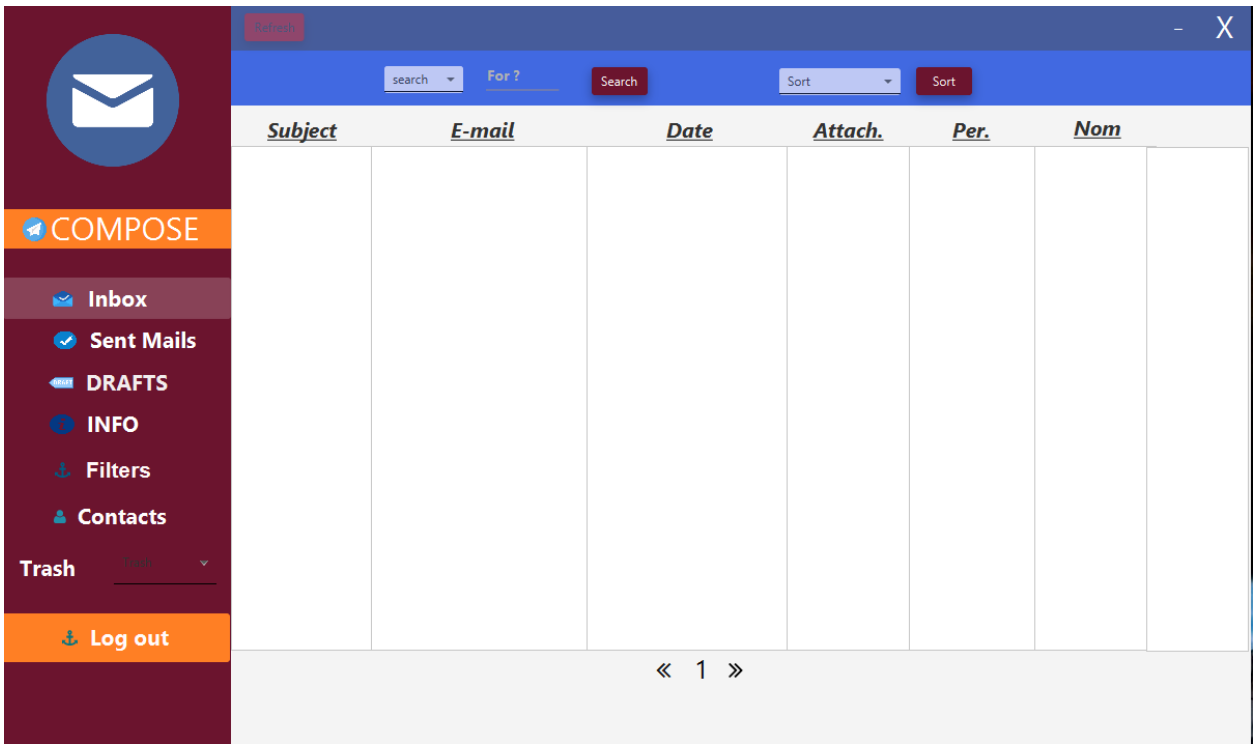
- Sample Runs:

- To sign up

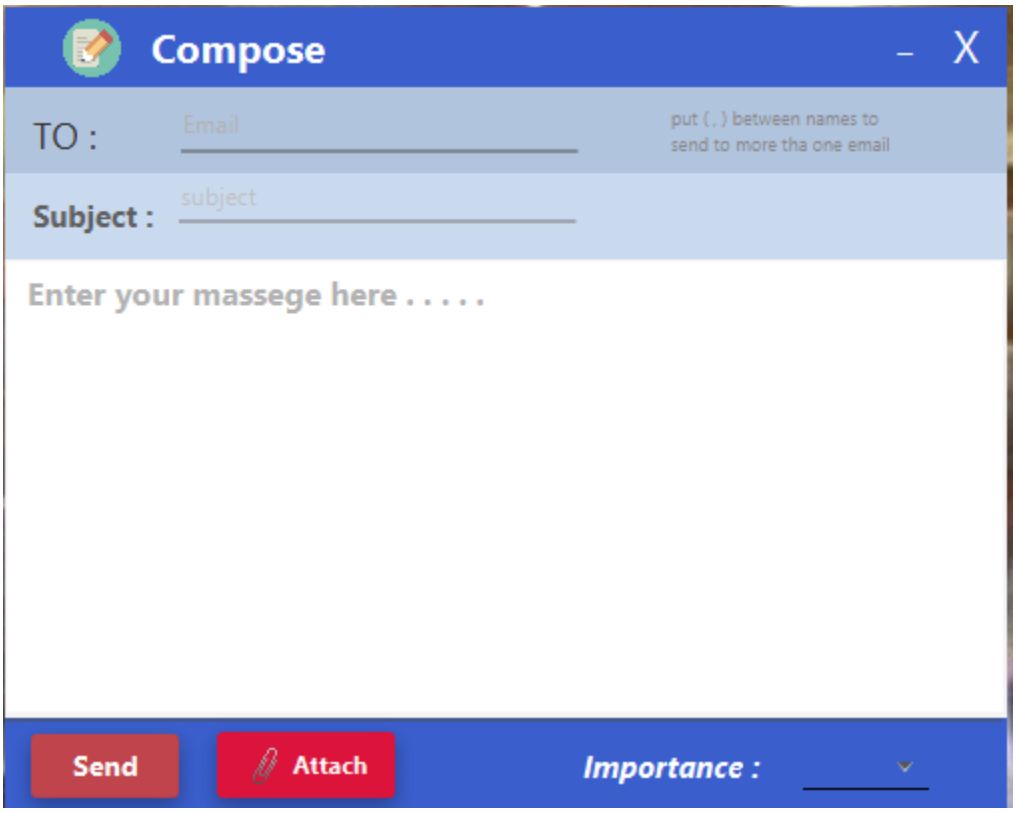


- To sign in

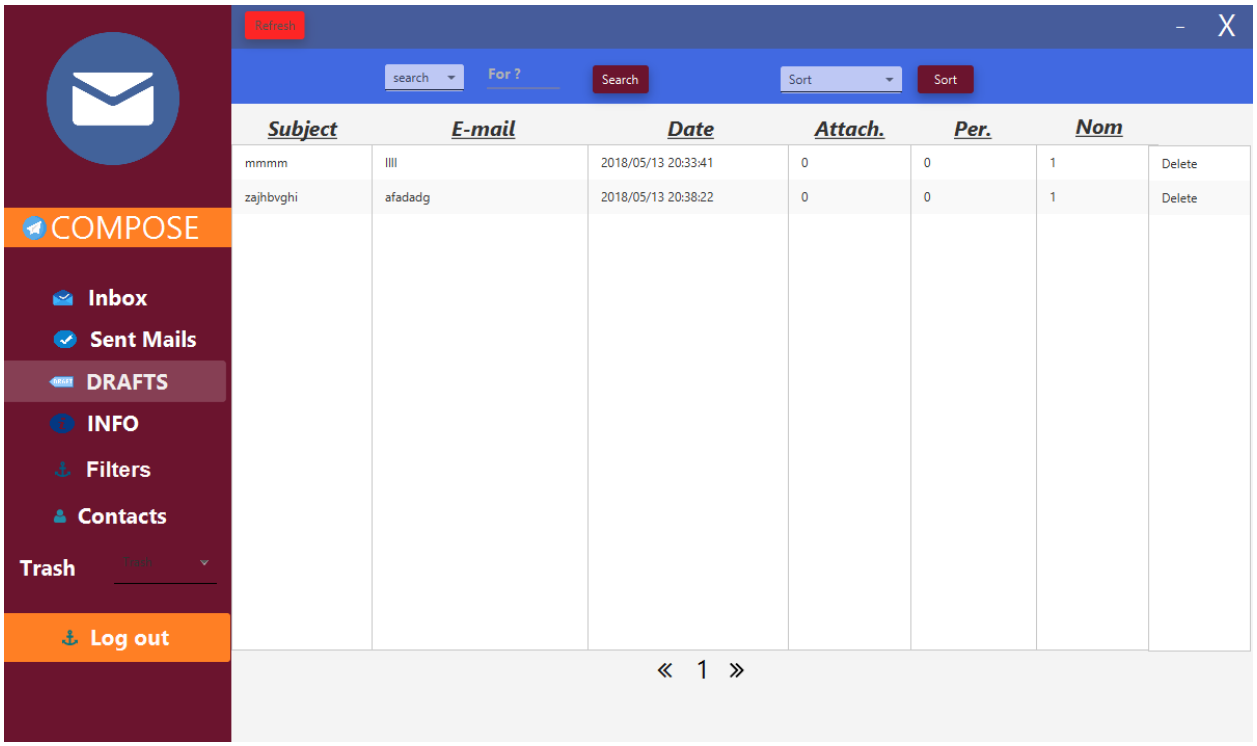

Welcome to our G-maill :D
Here , you can send or receive
mails & you can be in touch with your friends.
Sign Up
Sign in
Password
Log In


Refresh
search
For ?
Search
Sort
Sort
Subject
E-mail
Date
Attach.
Per.
Nom
COMPOSE
Inbox
Sent Mails
DRAFTS
INFO
Filters
Contacts
Trash
Log out
« 1 »

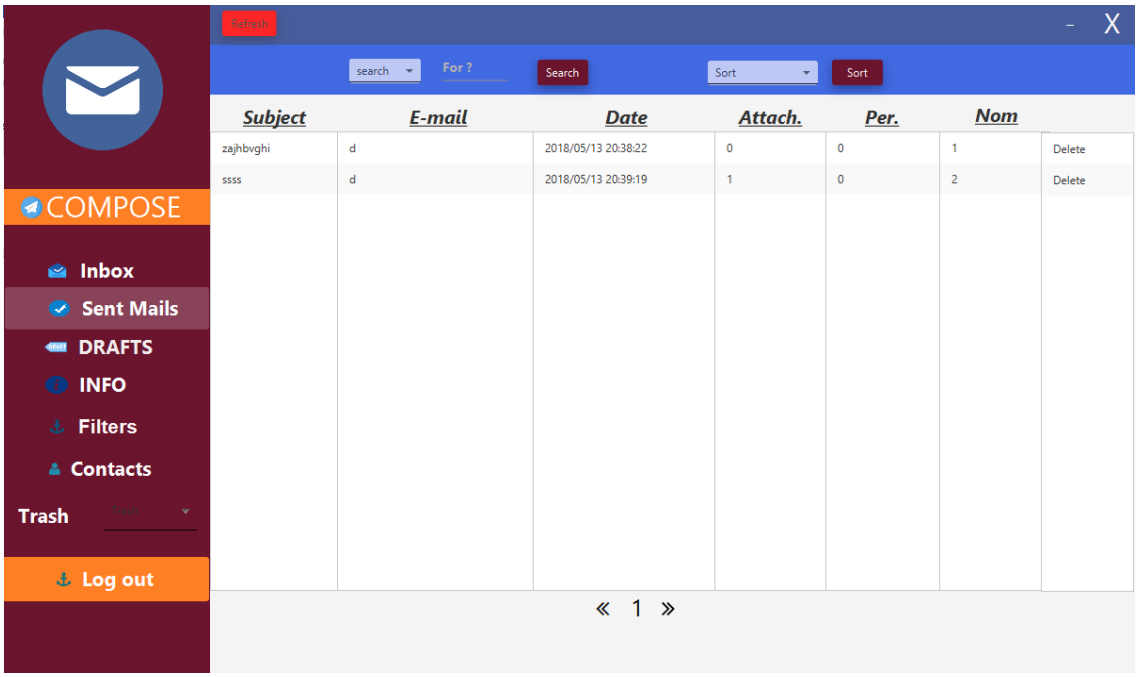
- To compose Emails



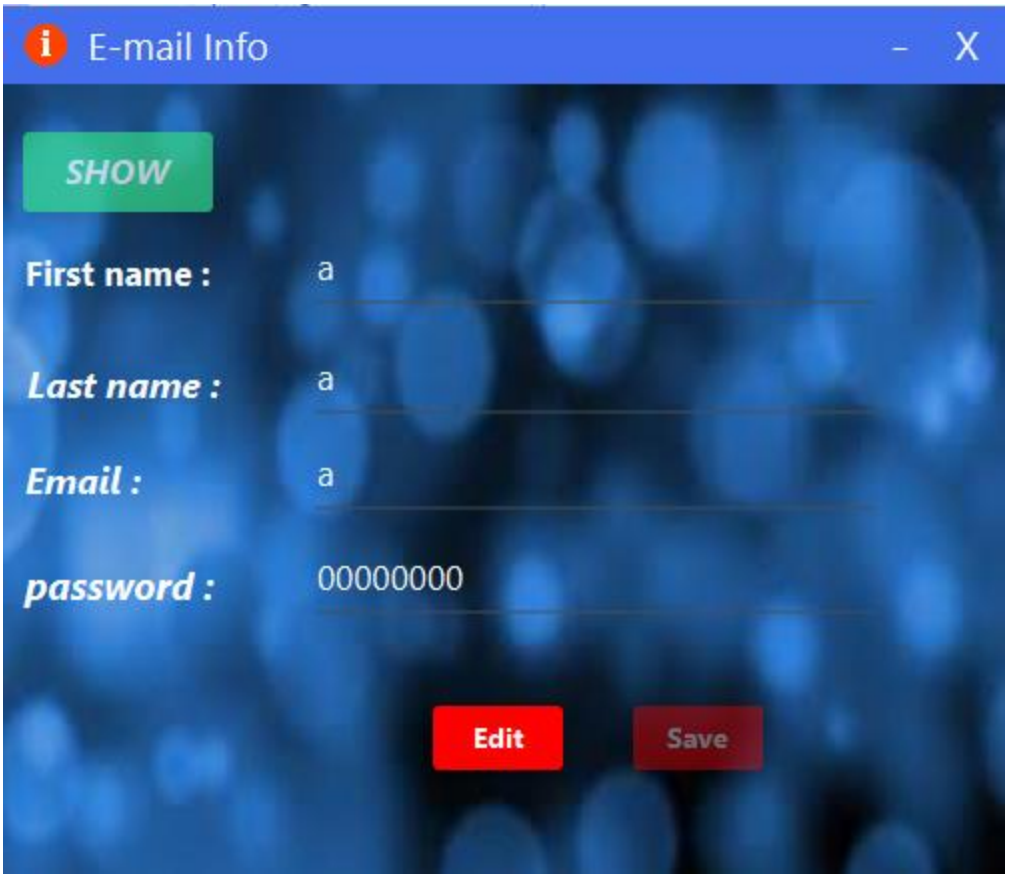
- The Drafts



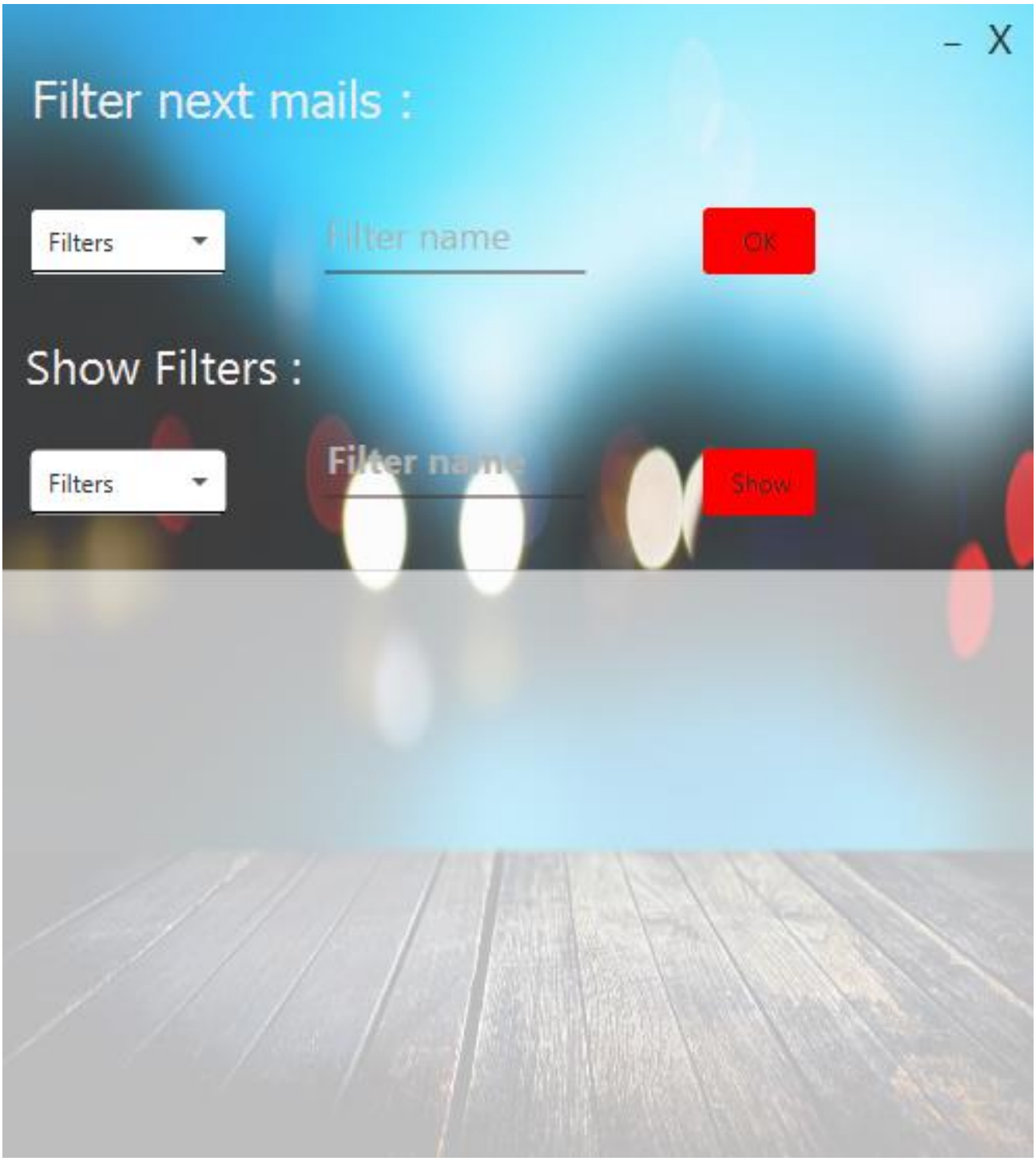
- The Sent Mails



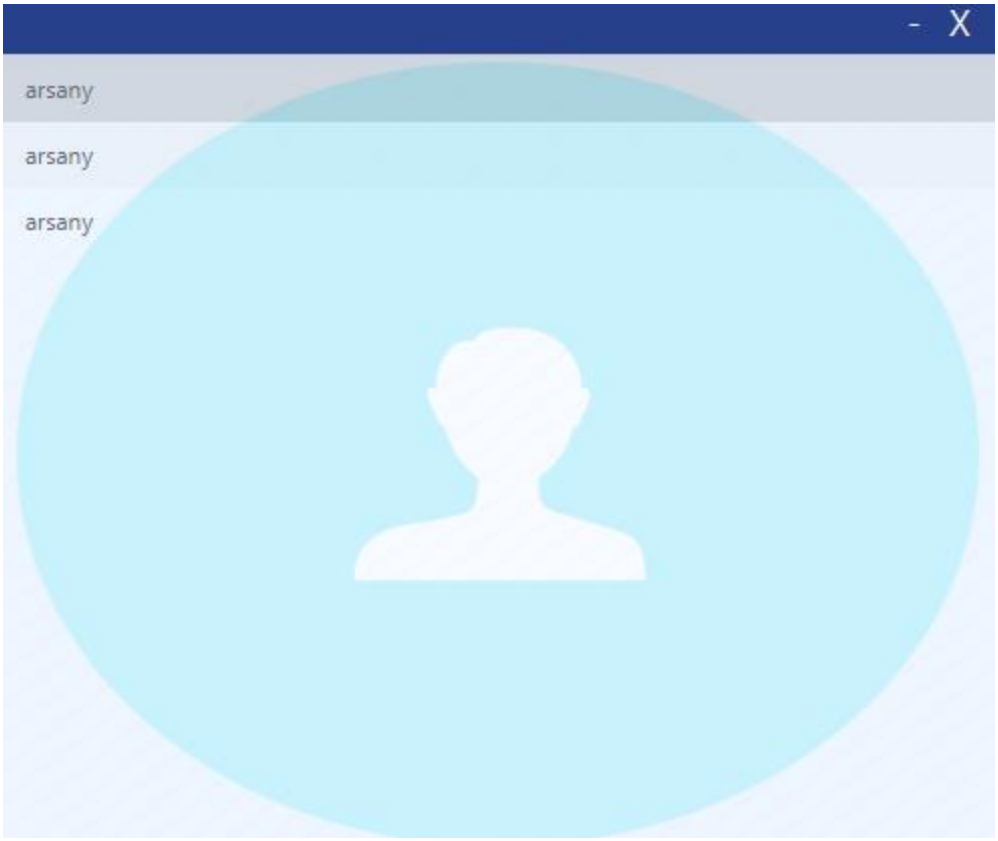
- Info



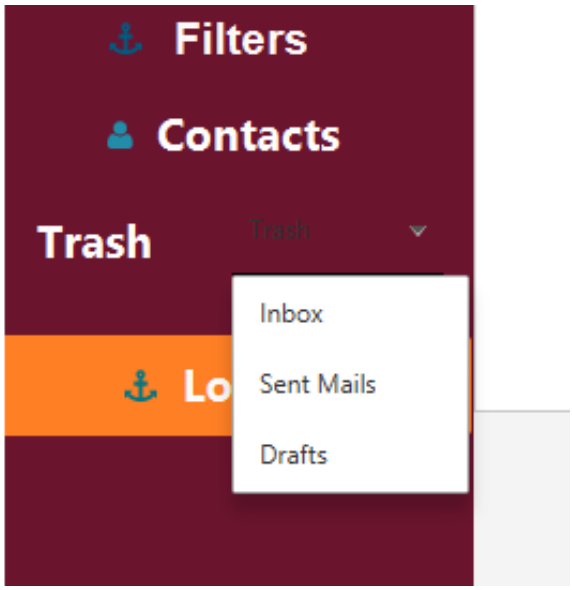
- Filters


Filter next mails :
Filters
Filter name
OK
Show Filters :
Filters
Filter name
Show

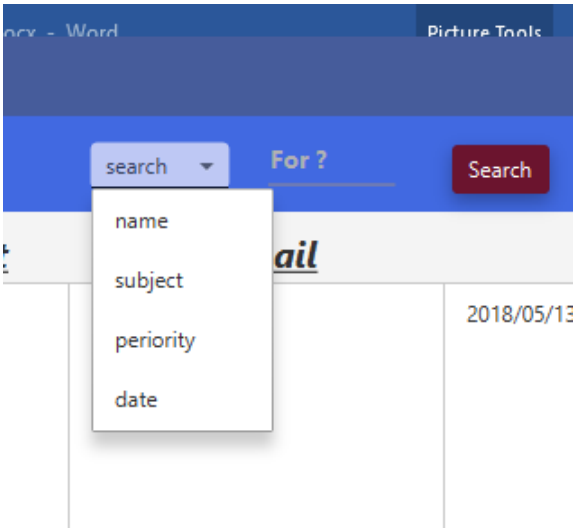
- Contacts



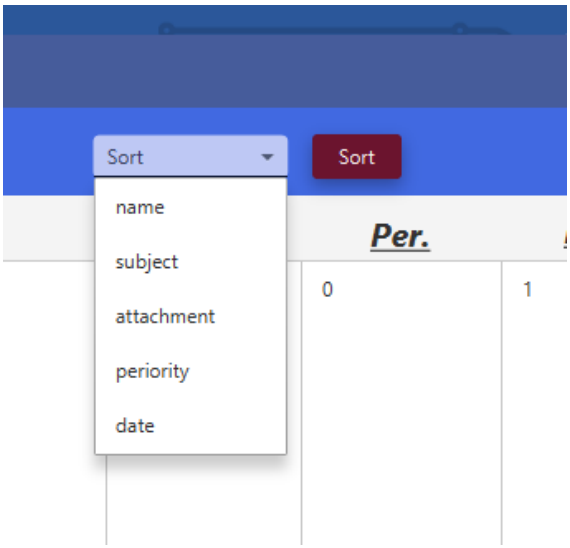
- Trash



- search

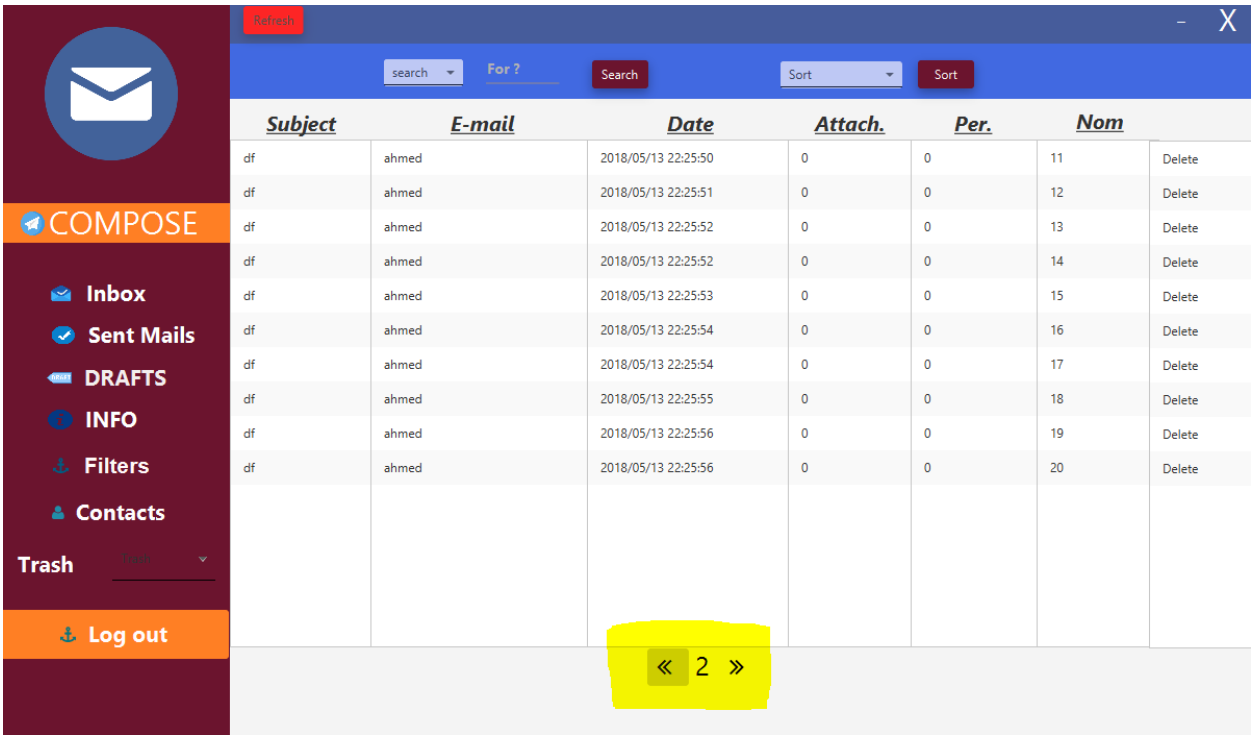


- Sort



- Refresh

- Navigation


Refresh
search
For ?
Search
Sort
Sort
COMPOSE
Inbox
Sent Mails
DRAFTS
INFO
Filters
Contacts
Trash
Log out
Subject
E-mail
Date
Attach.
Per.
Nom
df ahmed 2018/05/13 22:25:50 0 0 11 Delete
df ahmed 2018/05/13 22:25:51 0 0 12 Delete
df ahmed 2018/05/13 22:25:52 0 0 13 Delete
df ahmed 2018/05/13 22:25:52 0 0 14 Delete
df ahmed 2018/05/13 22:25:53 0 0 15 Delete
df ahmed 2018/05/13 22:25:54 0 0 16 Delete
df ahmed 2018/05/13 22:25:54 0 0 17 Delete
df ahmed 2018/05/13 22:25:55 0 0 18 Delete
df ahmed 2018/05/13 22:25:56 0 0 19 Delete
df ahmed 2018/05/13 22:25:56 0 0 20 Delete
« 2 »

- User Manual:

- The user enters the email, if he has an email he will press on sign in to log in his email account, if he has not an email account he will press on sign up to make an account and to login the email account.
- The **Compose, Sent Mails, Info, Log out, Drafts, Trash, Filters and Inbox.** All of these items will appear to the user when he enters the mail
- If he wants to send an email he will press on compose button to send email by entering to whom he would send, subject of the sent email, Data of the email and the email he wants to send (attachment, image, ……etc).
- If the person wants to delete an email he would press on delete button and it will be sent to the trash folder.
- The emails in the trash will be deleted from the account of the user automatically if passed on it 30 days.

- If the user entered wrong email name while sending to another user or there is any error happened while sending email, this email will be sent to the Drafts folder.
- If he wants to edit his information he will press on the Info button and edit his information.
- If he wants to find contacts which he sent to them emails or received from them emails, he will press on contact button and it will appear to him contacts' emails which he sent or received from them emails. If he presses on one of these accounts which appeared to him it will go to the compose to help him to send emails.
- If the user wants to logout from the mail he will press on the Logout button to logout.
- He could move email from the Drafts, Sent Mails, Filters, trash or Inbox to these folders also.
- He could search emails depending on name, subject or date.

- He could sort emails depending on name, subject, date or priority.
- He could refresh the page to have new notifications which happened.