Mail Server

Assignment 8

Description and features

Description

-Our server communicates users by providing sending and receiving emails , it aims to enrich ways of communication . The user is able to do create folders and move emails to it , filter the receiving emails according to subject or sender's name , delete emails. The deleted emails are thrown in the trash if the user want to restore then before 30 days.

Features

-We use JAVAFX in GUI building.

-You can open two account in the same time.

-Selecting profile pic is optional.

-You can view your profile information from *My Profile* button.

-The user can send an email to multi-receiver.

-The user can compose un-send email from draft.

-The user can set the priority of the email in order to sorted the emails according to priority.

-The user can add emails to *Favourite* folder .

-The mail server provide paging feature which view 10 emails per page and backward and forward feature that allow the user to go next and back through the pages of emails.

-The user can add or edit contacts in contacts' list .

User manual

User manual

1.The user choose between two actions

-Signup (to create a new account)

The user has to write his First name , Last name , Gender , Date of birth , Email name, password, select profile picture (optional).

-Sign in (if he already has an account)

The user has to entre his email and password

2.Once the user has account he can :

-Compose emails.

-Save an email to draft before compose it .

-Receive emails.

-Create a new Folders.

-Set filters .

User manual

-Move emails from one folder to another .

-View emails and attachments (if found).

-Rename a created folder.

-Add emails to favorite .

- Add contacts and view them.

- Edit or delete contacts list.

-Delete emails .

- Set priority of emails .

- The user can sign out from *Signout* button.

Data Structure usage

Linked list

Queue

1. Represent the index file of server , others , filter or main folders .

2. Represent the selected emails to move or delete.

3. Binary search: User can search by Subject, Sendre's name , Receiver's name.

4. Attatchment are handled in a linkedlist.

1. Handle sending to multiple receivers ,each node carry one receiver .

Priority queue

Stack

1. **Sort emails according to their priority which set by the user.**

1. **Quick sort** : Sorting emails according to (Default,Subjects,Sender's name , Receiver's name)

Main Module

1. **Search class:**

    contains one functions :

*   **LinkedList BinarySearch(LinkedList R,String x,String type)**

        This function apply binary search on the linkedlist R by type which can be Sendre's name , Receiver's name or Subject and search for a string x .

Main Classes

1. **Mail class:**

   That carry message's content as from , to , text , attachment (if found) ,date and subject

Main Classes

1. **Filter class:**

 contains three functions :

- **Set filter(String newFoldername , String filterName)**

   This function set a filter "filterName" and create a new folder with a "newFoldername ".

- **Filter()**
   This function moves all emails folder with a sender's name match "filtername" to an folder "newFoldername".

- **Filtersub()**
   This function moves all emails folder with a subject's name match "filtername" to an folder "newFoldername".

Main Classes

1. **Contact class:**

Carry user information as First name , last name , Gender , Email name and profile picture .

Main Classes

1. **Priority class:**
   Take priority degree from a user and emails will be sorted according to priority degree using a priority queue.

Algorithms

Pseudo code

Signup function

Convert index file of server to linked list (ls)
Check that the email name is not repeated

Loop from 0 →size of ls
If email name found in ls change flag to 1
End of loop

Check that password contain more than 8 characters and name of email does not contain spaces

If flag = 0
Create user folder and info html file that contain user's information

Write in the index file of server the email name and password

Create the main folders in the user account as Inbox , Sent , Draft ,Trash, Favourite and Others.

End if

Sign in function

Convert index file of server to linked list (ls)
Check that the email name is found

Loop from 0 →size of ls
If email name found in ls change flag to 1
End of loop

Check that password is correct

If password is correct flag to 0

If flag = 0

Go to trash index and check the date of e-mails
Go to check 30 days method
If the 30 days have passed those e-mails will be automatically deleted

Draft-Function

Convert indexServer to e-mail linked list

Put the recievers name in queue

Loop 0 → queue size

Check the validity of the receiver name if exist in the the linkedlist

If receiver name isn't found error message appear

Loop 0→e-mail linked list size

If the the name is found in linkedlist

Create directory of e-mail

Move emails function

It takes a linkedlist with a selected emails to delete

Loop i= 0→linkedlist size

Declare Mailnode (temp)

Temp = linkedlist. Get (i)

Declare a file with a source path

Declare a file with target path

Call Files.move (source,target)

Delete the email from the index file of source file

Then write it in the index file of target file

End of loop

Delete after 30 days from trash function

We call this function in sign in to compare current time with trash emails' time

First we calculate difference in days between the current time and time of every email in trash

If difference in days greater than or equal 30 days

 then we delete the directory and the files in it

Delete the deleted email from index file of trash

End if

Compose function

Convert index file of server to linked list (Email-Linked)

Put the names of receivers in queue
Loop 0→size linkedlist of emails
If the email name of receiver is correct
Put the (to) e-mail name in queue2
Put the (to) email path in queue path

Loop 0→size of linkedlist of emails
Check If the e-mail name of sender is found
End if

Loop 0→size queue path
Make a directory in inbox folder of receiver that carry email body html file and attachment if found
Create html file in the directory
Loop 0→attcahement linked list
Add the attachment files in the created directory
End loop

Continue -Compose function

Write in index file of receivers' inbox directory

Create a directory with subject and date name in the sender (send) folder
Create html file and put the file in the directory

Loop 0→attachement linked list
Add the attachement next to html file
End loop

Write in the index file in sender's sent directory

Assumptions

Assumptions

1- User's first and last name does not contain spaces

2- Password is more than 8 characters but less than 20 character

3-Selecting profile picture is optional

4- The user can send attachments up to 10 files only

5-The user can select a bulk of e-mails to move or delete

6- The user can sign out at anytime

7- If the user create new folders they will be automatically created in Others' Directory

8-The user can filter inbox's emails by subject or sender's name.

9-The user can move emails to others' folders only.

10-The user use his email name only to sign in.
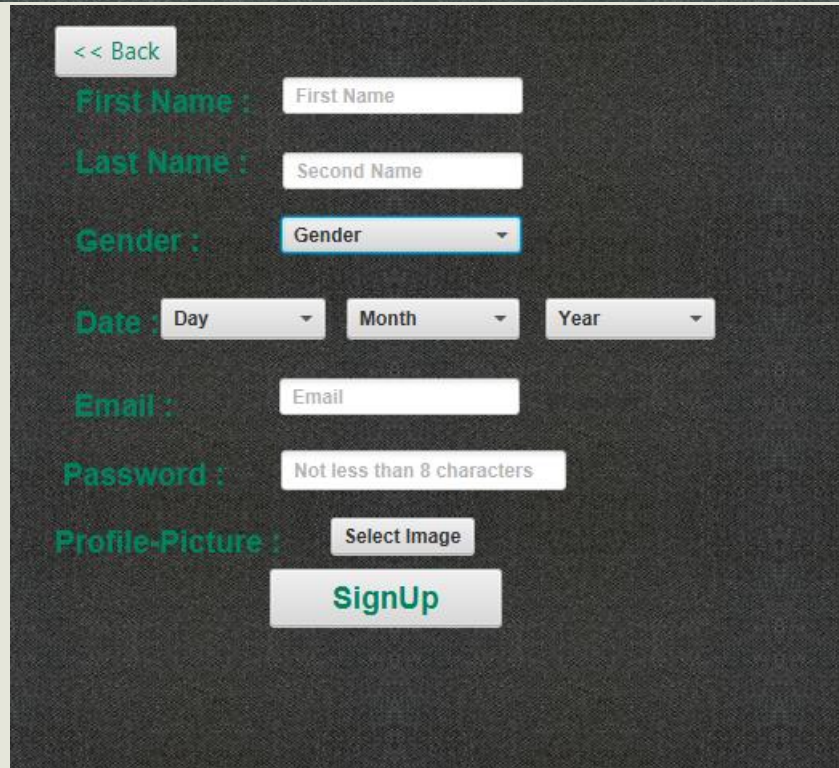
Sample runs

Signup

Signin

Home Page

Signup and create a new account

Sign in

Favourites

Compose

Inbox

Sent

Trash

Draft

Contacts

Filtered Folders

Other Folders

New Folder

Delete A Folder

Search by:

Sotr By :

Search   Go   Set A Filter

Rename   <<Prev   next>>
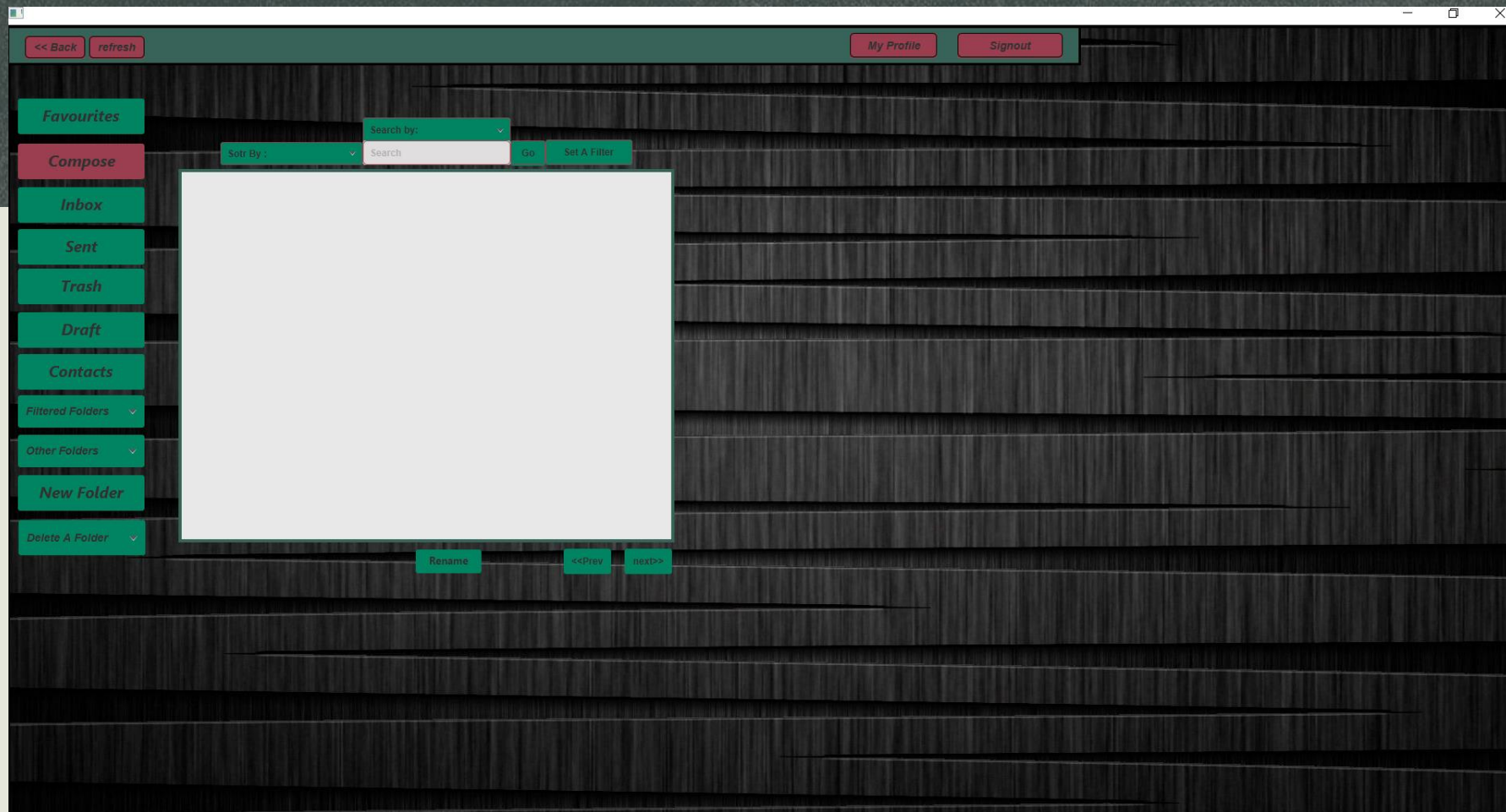
User account
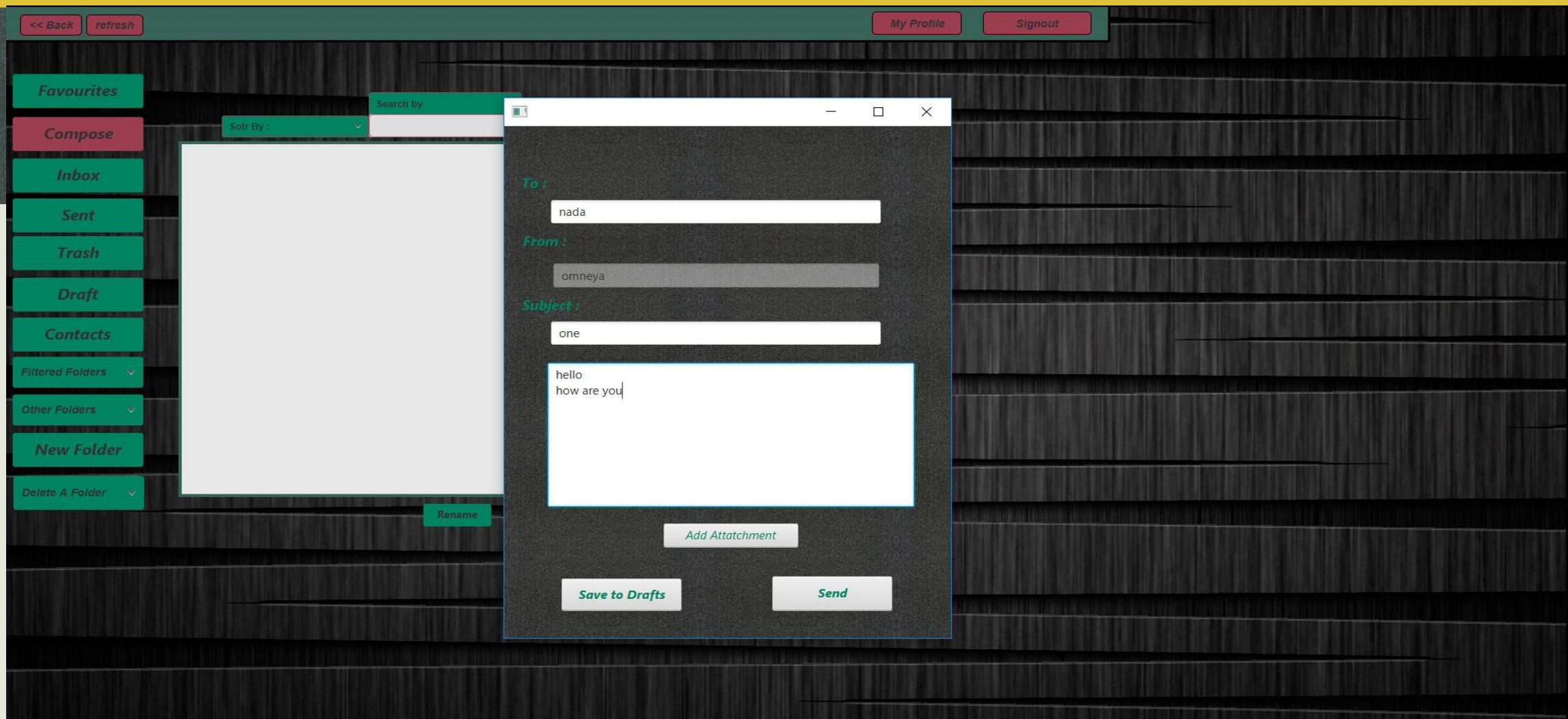
Compose a message or save to draft

My Profile

Signout

Favourites

Compose

Inbox

Sent

Trash

Draft

Contacts

Filtered Folders   ∨

Other Folders   ∨

New Folder

Delete A Folder

Search by: ∨

Sotr By :   ∨

Search   Go   Set A Filter

0	nada	one	2018-05-09 21;12;31
1	nada	two	2018-05-09 21;12;44
2	nada	three	2018-05-09 21;12;50
3	monmon	csed	2018-05-09 21;13;20
4	sara	okay	2018-05-09 21;15;33
5	sara	io	2018-05-09 21;15;46

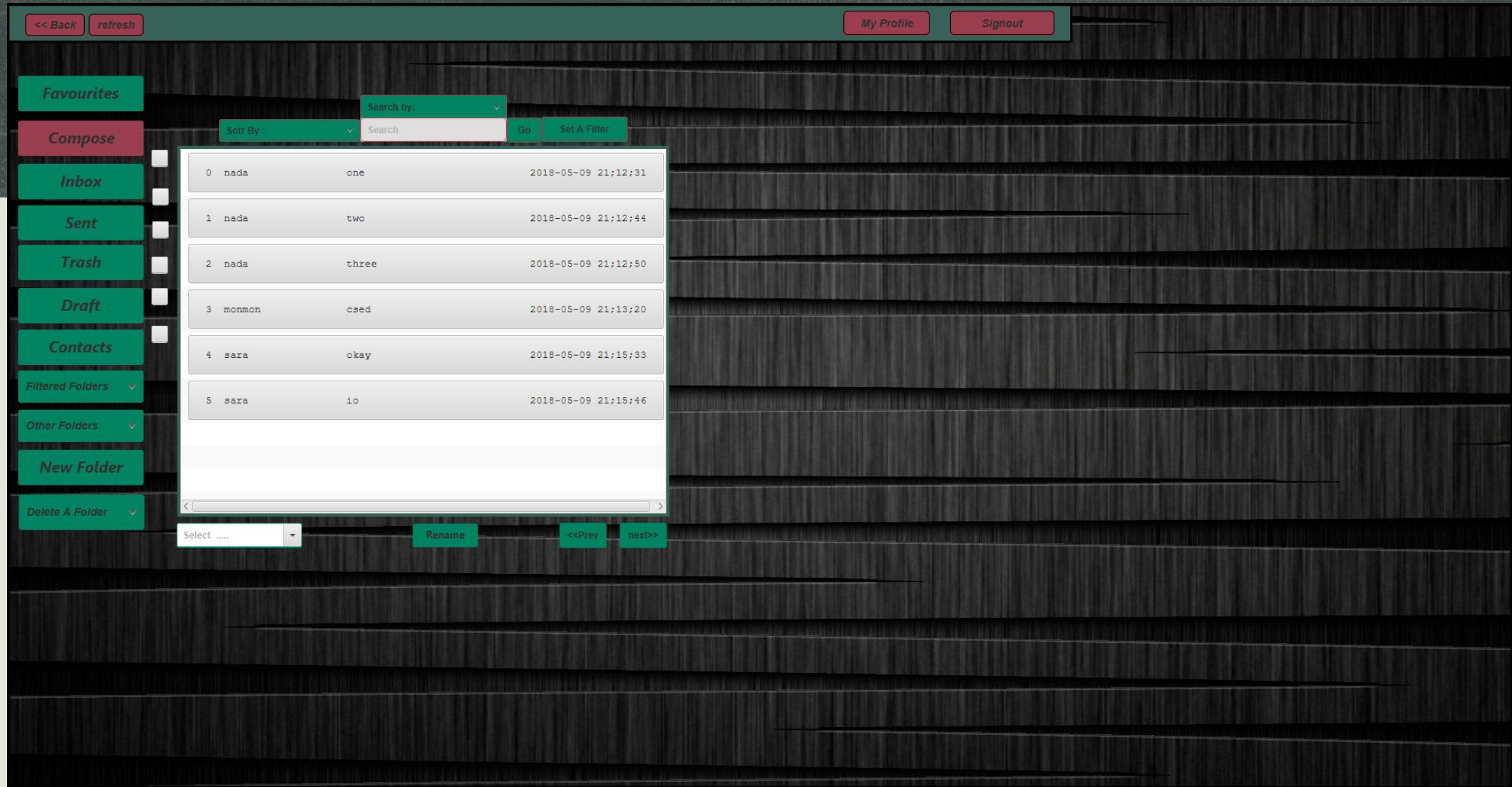Select .....   ∨   Rename   <<Prev   next>>
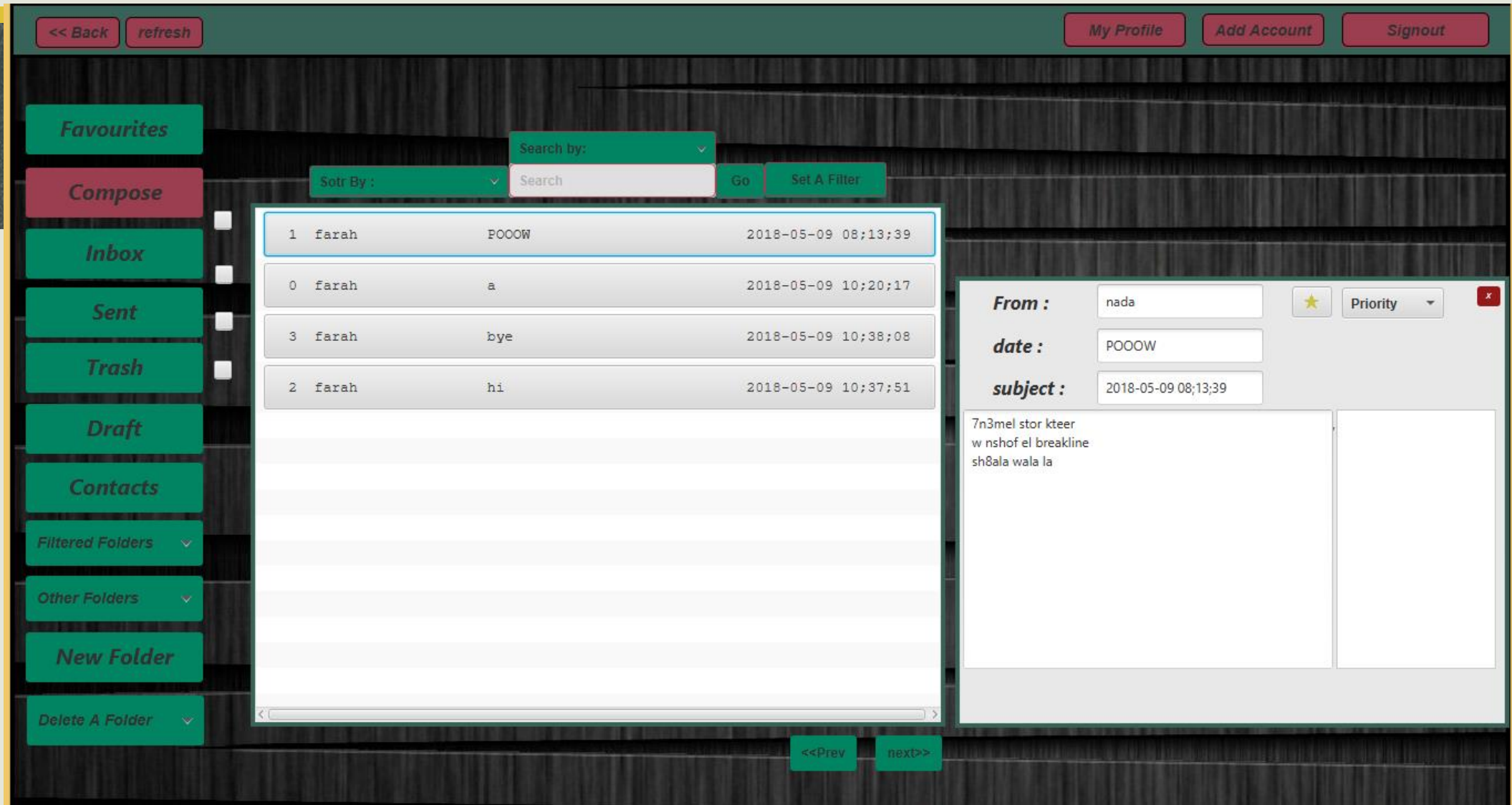
Viewing emails

Viewing an email body and attachment