

## **What your OO design is:**

I made a Node class, which will be what is stored in the binary search tree. The node class has data of type user, which is another class I made, and a left, right node also. I made a User class, which will be the data type stored in the node in the binary search tree. It has a string account name, string account description, an array list consisting of post objects and an array list consisting of other User objects which is needed for the follower feature I implemented. I opted for an array list because it is dynamic, and can increase in size to accommodate more posts a user adds, the same applies for adding followers. I created the post class which includes a string title, string video file name and an int for the number of likes. I also overrode the equals method for the post class, to work with the delete post method I added. I implemented the comparable interface and compare function in the user class to be able to compare two user objects to each other, according to their account name alphabetically, which will help with most of the binary search tree functions to find, insert and delete users. Also in the user class I made an add post function, which adds a post object to the users instance variable of the arraylist of posts and a print all posts function, which goes from back to front of the arraylist to get the “newest” post. I then made my Binary Search Tree class, which has a root node. My class includes find, insert and delete functions, like most binary search trees, but I have adjusted them for this scenario, comparing strings using the compare function in the user class mentioned earlier. I opted to do the preOrder printing method, because I think it makes the most sense. My binary search tree class makes use of the add post and print all posts functions mentioned earlier in the user class, and just needs the account name and/or a post to find the user in the binary search tree and perform the function. My main class, which I named TokTik, sets up the basic text based GUI and makes use of the previous classes and methods mentioned to perform operations on the BST according to what the user wants, by inputting numbers to indicate what action they want to do and then entering necessary information needed for that action.

### **Creativity in my program:**

I went beyond the scope of the assignment and included another method, delete post, which seems useful and contrasts the required add post function. The user enters what post they want to delete for which account and it gets deleted, checking a) whether the account exists in the BST and b) whether the post exists on that user's account. I also implemented a follower feature. Each user object has an arraylist of other users who have followed them. You can follow whichever account from whichever account, as long as it is present in the binary search tree. However, if you try to follow an account when you are already following them, an error message is outputted. I also made it so you can print out the names of all followers for a user, counting the number of followers as well.

### **What test values you used during testing and what the output was in each case:**

This output was based on the data loaded from the dataset.txt text file.

First few lines:

Create Greedo8 Kishinev drip's transcendently  
Create Brakiss5 smoggier magician catalysis's  
Create KyleKatarn2 amicability's aquariums baseboard  
Create Qui-GonJinn7 reunifies boobed smooth  
Create UlicQel-Droma6 broccoli's werewolf's gonads  
Create AdmiralAckbar9 thoughtfulness's arcing abandoning  
Create DarthVader4 repaying lined sling  
Create LukeSkywalker9 venue's Chatterley's traduce  
Create JoruuC'Baoth9 assureds nuke's Caldwell  
Create DarthBane1 rising belligerency's synchronizations  
Create MaraJade7 stud's nationalization's foxgloves  
Create GeneralVeers3 Coulter's immaculately mill  
Create MaraJade8 sorrow pendulum's typo  
Create CarnorJax2 unknowingly crueler neurology  
Create Chewbacca6 griping depopulation's appellate  
Create Sebulba4 Hegelian's roundabout Maya  
Create GeneralDodonna3 mosque banner extravaganza  
Create Greedo1 prefabricating legumes mollusk's  
Create SavageOpress6 costliness's rubies yipping  
Create MaceWindu6 sluice's TNT PMS's  
Create DarthMaul6 automates dipstick's wines  
Create CarnorJax8 invalids latter ceramic  
Create LukeSkywalker2 corsets burring superstitious  
Create Yoda7 baseline's vivifies yarmulkes  
Create IG882 Goa's evacuation's concerned  
Create DarthBane0 Day's Tamerlane vaporware  
Create Jerec4 solidity equalizer's gent's  
Create GrandMoffTarkin4 depletes declarations sounding's  
Create AsajjVentress8 Tahiti creepiest granulating.

PROBLEMS

3

OUTPUT

DEBUG CONSOLE

TERMINAL

Enter your choice: 7

Enter the file name: dataset.txt

File Successfully Loaded!

Choose an action from the menu:

1. Find the profile description for a given account
2. List all accounts
3. Create an account
4. Delete an account
5. Display all posts for a single account
6. Add a new post for an account
7. Load a file of actions from disk and process this
8. Delete a post from an account
9. Select an account to follow
10. Display followers for an account
11. Quit

Enter your choice: 1

Enter the account name: GrandMoffTarkin4

The profile description is: depletes declarations sounding's

PROBLEMS

3

OUTPUT

DEBUG CONSOLE

TERMINAL

Choose an action from the menu:

1. Find the profile description for a given account
2. List all accounts
3. Create an account
4. Delete an account
5. Display all posts for a single account
6. Add a new post for an account
7. Load a file of actions from disk and process this
8. Delete a post from an account
9. Select an account to follow
10. Display followers for an account
11. Quit

Enter your choice: 1

Enter the account name: testfornoaccount

Account not found.

## LIST OF ALL ACCOUNTS:

The name of this account is Greedo8. This is a short description of this account: Kishinev drip's transcendently  
The name of this account is Brakiss5. This is a short description of this account: smoggier magician catalysis's  
The name of this account is AdmiralAckbar9. This is a short description of this account: thoughtfulness's arcing abandoning  
The name of this account is AdmiralAckbar6. This is a short description of this account: Bertha commutation's pokier  
The name of this account is AaylaSecura6. This is a short description of this account: epoxyed paychecks gen  
The name of this account is 4-LQM0. This is a short description of this account: miniscule's Hamlin's Lorenz  
The name of this account is AaylaSecura0. This is a short description of this account: VDT plausible were  
The name of this account is 4-LQM5. This is a short description of this account: horsewhips bubble's inconsistencies  
The name of this account is 4-LQM3. This is a short description of this account: defensiveness's Banks's subletting  
The name of this account is 4-LQM2. This is a short description of this account: prod's tawdry imperfect  
The name of this account is 4-LQM1. This is a short description of this account: sale contingent Gielgud's  
The name of this account is 4-LQM4. This is a short description of this account: encirclement's Earl nonbeliever's  
The name of this account is 4-LQM7. This is a short description of this account: Cabrini's witty emends  
The name of this account is 4-LQM6. This is a short description of this account: Olson's docents Schroeder  
The name of this account is 4-LQM8. This is a short description of this account: clip Amenhotep's scarcity's  
The name of this account is 4-LQM9. This is a short description of this account: belching rankling hearing's  
The name of this account is AaylaSecura4. This is a short description of this account: passport vasts reprobates  
The name of this account is AaylaSecura1. This is a short description of this account: undershoot macaws laws  
The name of this account is AaylaSecura2. This is a short description of this account: uranium's futilely abysmal  
The name of this account is AaylaSecura3. This is a short description of this account: aside garrulity's Numbers's  
The name of this account is AaylaSecura5. This is a short description of this account: Permian Cree nerdy  
The name of this account is AaylaSecura9. This is a short description of this account: imperturbably pompoms Rory's  
The name of this account is AaylaSecura7. This is a short description of this account: Cicero weeing cogitation's  
The name of this account is AaylaSecura8. This is a short description of this account: ebonies phenomenal superimposed  
The name of this account is AdmiralAckbar0. This is a short description of this account: depicts overreacts Actaeon's  
The name of this account is AdmiralAckbar2. This is a short description of this account: villager's mugger musketeer  
The name of this account is AdmiralAckbar1. This is a short description of this account: pelvic topsail's Frigga  
The name of this account is AdmiralAckbar4. This is a short description of this account: elites Rather chi

Choose an action from the menu:

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5. Display all posts for a single account
6. Add a new post for an account
7. Load a file of actions from disk and process this
8. Delete a post from an account
9. Select an account to follow
10. Display followers for an account
11. Quit

Enter your choice: 2

LIST OF ALL ACCOUNTS:

There are 0 accounts present.



PROBLEMS

3

OUTPUT

DEBUG CONSOLE

TERMINAL

Choose an action from the menu:

1. Find the profile description for a given account
2. List all accounts
3. Create an account
4. Delete an account
5. Display all posts for a single account
6. Add a new post for an account
7. Load a file of actions from disk and process this
8. Delete a post from an account
9. Select an account to follow
10. Display followers for an account
11. Quit

Enter your choice: 3

Enter the account name: Nathan

Enter the profile description: Nathans Description

Account created successfully.

PROBLEMS

3

OUTPUT

DEBUG CONSOLE

TERMINAL

Enter your choice: 7

Enter the file name: dataset.txt

File Successfully Loaded!

Choose an action from the menu:

1. Find the profile description for a given account
2. List all accounts
3. Create an account
4. Delete an account
5. Display all posts for a single account
6. Add a new post for an account
7. Load a file of actions from disk and process this
8. Delete a post from an account
9. Select an account to follow
10. Display followers for an account
11. Quit

Enter your choice: 3

Enter the account name: Greedo8

Account already exists.

Enter your choice: 7

Enter the file name: dataset.txt

File Successfully Loaded!

Choose an action from the menu:

1. Find the profile description for a given account
2. List all accounts
3. Create an account
4. Delete an account
5. Display all posts for a single account
6. Add a new post for an account
7. Load a file of actions from disk and process this
8. Delete a post from an account
9. Select an account to follow
10. Display followers for an account
11. Quit

Enter your choice: 4

Enter the account name: Greedo8

Account deleted successfully.

Choose an action from the menu:

1. Find the profile description for a given account
2. List all accounts
3. Create an account
4. Delete an account
5. Display all posts for a single account
6. Add a new post for an account
7. Load a file of actions from disk and process this
8. Delete a post from an account
9. Select an account to follow
10. Display followers for an account
11. Quit

Enter your choice: 4

Enter the account name: testfornoaccount

Account not found.

PROBLEMS 3 OUTPUT DEBUG CONSOLE TERMINAL

Enter your choice: 7

Enter the file name: dataset.txt  
File Successfully Loaded!

Choose an action from the menu:

1. Find the profile description for a given account
2. List all accounts
3. Create an account
4. Delete an account
5. Display all posts for a single account
6. Add a new post for an account
7. Load a file of actions from disk and process this
8. Delete a post from an account
9. Select an account to follow
10. Display followers for an account
11. Quit

Enter your choice: 5

Enter the account name: Greedo8

Posts for account Greedo8:

Title: cotes chunk inquisitiveness's salivation banister  
Video: video5364.mpg  
Number of likes: 2840  
Title: ambitions clacks unison sadism remote's  
Video: video5363.mpg  
Number of likes: 5107  
Title: walkout outclassing fingertip scholar Panama  
Video: video5362.mpg  
Number of likes: 7687  
Title: offloaded boodle's ballpoint Wiemar's Drupal's  
Video: video5361.mpg  
Number of likes: 8873  
Title: plackets Ganesha posters bassoon's bigotries  
Video: video5360.mpg  
Number of likes: 3076  
Title: Cuzco's hemoglobin's donkeys Sandburg wavier  
Video: video5359.mpg  
Number of likes: 6617  
Title: ascendants lasagnes unclaimed commiserate unkind  
Video: video5358.mpg  
Number of likes: 3768  
Title: plains flora's continuance rejoin takeoff's  
Video: video5357.mpg  
Number of likes: 2438  
Title: Brewster's aggregating biologist miniaturization's refrigerant  
Video: video5356.mpg  
Number of likes: 7345

PROBLEMS 3 OUTPUT DEBUG CONSOLE TERMINAL

Choose an action from the menu:

1. Find the profile description for a given account
2. List all accounts
3. Create an account
4. Delete an account
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6. Add a new post for an account
7. Load a file of actions from disk and process this
8. Delete a post from an account
9. Select an account to follow
10. Display followers for an account
11. Quit

Enter your choice: 5

Enter the account name: testfornoaccount  
Account not found.



```
4. Delete an account
5. Display all posts for a single account
6. Add a new post for an account
7. Load a file of actions from disk and process this
8. Delete a post from an account
9. Select an account to follow
10. Display followers for an account
11. Quit
```

Enter your choice: 5

```
Enter the account name: LukeSkywalker8
Posts for account LukeSkywalker8:
Title: yeoman's satanic prey's Vandyke meg
Video: video5475.mpg
Number of likes: 7266
```

Choose an action from the menu:

```
1. Find the profile description for a given account
2. List all accounts
3. Create an account
4. Delete an account
5. Display all posts for a single account
6. Add a new post for an account
7. Load a file of actions from disk and process this
8. Delete a post from an account
9. Select an account to follow
10. Display followers for an account
11. Quit
```

Enter your choice: 6

```
Enter the account name: LukeSkywalker8
Enter the post title: Lukes 2nd post
Enter the post video: luke.jpg2
Enter the number of likes: 10
Post added.
```

Choose an action from the menu:

```
1. Find the profile description for a given account
2. List all accounts
3. Create an account
4. Delete an account
5. Display all posts for a single account
6. Add a new post for an account
7. Load a file of actions from disk and process this
8. Delete a post from an account
9. Select an account to follow
10. Display followers for an account
11. Quit
```

Enter your choice: 5

```
Enter the account name: LukeSkywalker8
Posts for account LukeSkywalker8:
Title: Lukes 2nd post
Video: luke.jpg2
Number of likes: 10
Title: yeoman's satanic prey's Vandyke meg
Video: video5475.mpg
Number of likes: 7266
```

Choose an action from the menu:

1. Find the profile description for a given account
2. List all accounts
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6. Add a new post for an account
7. Load a file of actions from disk and process this
8. Delete a post from an account
9. Select an account to follow
10. Display followers for an account
11. Quit

Enter your choice: 6

Enter the account name: testfornoaccount

Account not found.

## Git Usage:

```
PROBLEMS 3 OUTPUT DEBUG CONSOLE TERMINAL

The default interactive shell is now zsh.
To update your account to use zsh, please run `chsh -s /bin/zsh`.
For more details, please visit https://support.apple.com/kb/HT208050.
Nathans-MacBook-Pro:Assignment 4 nathanwells$ git log | (ln=0; while read l; do echo $ln: $l; ln=$((ln+1)); done) | (head -10; echo ...; tail -10)
0: commit 481c6c2d967cd89438354b40fcd9e2bd6d3c6a79
1: Author: Nathan Wells <nthnwells1@gmail.com>
2: Date: Tue Apr 18 11:59:45 2023 +0200
3:
4: Added in javadoc comments and finalized code to catch errors and work
5:
6: commit 1582f733487172d0d49f3d4d75c9467792639c89
7: Author: Nathan Wells <nthnwells1@gmail.com>
8: Date: Sun Apr 16 22:44:12 2023 +0200
9:
...
85: Author: Nathan Wells <nthnwells1@gmail.com>
86: Date: Thu Apr 6 17:17:45 2023 +0200
87:
88: Implemented comparable interface for User class and added toString. Added findDescription and insert function for BST class and downloaded the binary tree
code from Vula and made my BST class extend that.
89:
90: commit 75fa3c1e8cfdfa663ac7678765b50db6c4fd234b
91: Author: Nathan Wells <nthnwells1@gmail.com>
92: Date: Thu Apr 6 17:08:05 2023 +0200
93:
94: Added all major classes to be used in this assignment and included their instance variables and a few helper methods
Nathans-MacBook-Pro:Assignment 4 nathanwells$
```