

Assignment 4 TokTik report

Classes:

BinaryTreeNode

BinaryTree

BinarySearchTree

Account

Post

The BinaryTreeNode class defines a node with a left and right pointer, the node data is an account object.

The BinaryTree class uses the BinaryTreeNode class as the BinaryTree class contains BinaryTreeNode objects. The BinaryTree class contains methods for traversal and output of the data in the node.

The BinarySearchTree class inherits from the BinaryTree class. The given BinarySearchTree class has methods which insert nodes into the binary tree, delete nodes from the binary tree and a find method that uses comparable to traverse the tree and find a specific node.

The account object contains an account name, account description, an ArrayList of post objects, as well as a binary search tree of account objects representing the followers of a particular account and a binary search tree of accounts followed. Account implements comparable which allows the compareTo function called in the find method of the BinarySearchTree class to compare account objects based on their name.

An important aspect of this is that accounts are sorted alphabetically in the tree according to their name, but they are not sorted based on the case of the account name. This implementation of a binary search tree is not case sensitive towards account names. If the case of an account name were to be respected, it would result in the binary search tree having all account names with capital letters on one side and account names with lowercase on another side. This would hinder the performance of the tree as most functions in the binarysearchtree class rely on the find method which needs to search the tree. If the tree is not ordered alphabetically it would add to the search time.

The main method is contained in the TokTik class.

A post object consists of a post name, post description and a number of likes.

Both the account class and the post class are encapsulated so that attributes in either of the classes cannot be accessed directly from the main method. The account classes use mutator and accessor methods to change and gain access to attributes for output or modification.

Account objects are stored in a Binary Search Tree and withing account objects two binary search trees are stored of account type. These two binary search trees contain accounts that a particular account follows and accounts that follow this particular account.

This was to add to the creativity section of the assignment as instead of storing accounts of followers in an array list the performance speed is enhanced by instead storing these account objects in another binary search tree as it can be proven that the binary search tree has a faster worst case performance time for searching than a list.

In terms of creativity of the assignment a followers and following implementation was created for multimedia feeds. However, the TokTik implementation is a basic replica of a social media app.

Limitations include: Users do not have a password, they are only asked for their account name and this would be used as a basis to follow accounts and to allow other accounts to follow them. Users cannot like posts either.

Functions and test values:

1. Find the profile description for a given account:

The Binary Search Tree and arraylist of posts is populated using dataset.txt:

This is an extract of dataset.txt

```
81 Create WedgeAntilles6 Cepheid's procrastination's pertinence
82 Create GrandMoffTarkin1 demo's telephotos swathe
83 Create DashRendar8 gentling philatelists conversion
84 Create KyleKatarn6 wannabes bargainer inferno's
85 Create Watto7 sharpened crumpet frostbit
86 Create PadméAmidala0 kazoo insured's fruitier
87 Create AurraSing0 dashboard's corporeal Scotchmen's
88 Create CloneCommanderCody4 Gustavus McCall disenchantment's
89 Add LukeSkywalker2 video1630.mpg 3810 wounder retailer Tlingit meeting's weepiest
90 Create AhsokaTano9 vet mechanic uncle's
91 Add CarnorJax8 video5195.mpg 8551 cheeseburger's Wycliffe victims Yoknapatawpha pommels
92 Create SenatorBailOrgana7 finickier landmark's sampans
93 Create KitFisto0 adopting stockrooms hydroplane
94 Create Zuckuss2 opposite's actor's romper's
95 Add KyleKatarn6 video4095.mpg 6104 imbecillic milliners Bethe squeeze Suzanne's
96 Create BarrissOffee0 valved widgeons Carolinian's
97 Create BiggsDarklighter0 adulterers crucifix semifinalist's
98 Create KitFisto9 tidewater reappoints sublimes
99 Create ShmiSkywalker0 procurer platinum andiron's
100 Create PrinceXizor7 portraiture's Winsey Chester's
101 Create Dengar4 jealousy's sidewall finalist
102 Create R2-D20 magnitudes deviation paves
103 Create Obi-WanKenobi7 Ute's Mendelian overpowers
104 Create LukeSkywalker0 clergywoman contest touch
105 Create SenatorBailOrgana2 agencies cockpit's urinal
106 Create GeneralGrievous1 Lacy's envies horizontally
107 Create KirKanos6 dullards insatiably muddiness's
108 Create BobaFett8 synthetic dysfunctions esters
109 Create RahmKota1 Reuther's blowgun preoccupy
110 Create PadméAmidala2 pigmy tabulating basketballs
111 Create BibFortuna6 dinosaur's earl typos
112 Create MissionVao4 Pan Letha resultant
113 Create 4-LOM0 miniscule's Hamlin's Lorenz
114 Create Revan7 spelling heal invaluable
115 Create CallistaMing5 contamination's straightedge's Malabo
116 Create Jerec3 zillions millepost thorny
117 Create Brakiss4 writhes lecithin revved
118 Create Watto8 Electra's assumes Zechariah's
119 Create PloKoon6 Faulkner schismatics cinched
120 Create JacenSolo6 Massey's disjointing infest
121 Create Yoda9 hashish's afternoons stopper's
122 Add CarnorJax2 video1356.mpg 6536 eyewitnesses sell admission's croziers involvement's
123 Create ZamWesell4 backfiring clichéd Lancaster's
124 Create CloneCommanderCody1 remotely spoilage's hunk's
125 Add CallistaMing5 video3222.mpg 5828 cadres mediated salved Julliard's abide
126 Add CallistaMing9 video5826.mpg 182 expediter's alone IRS copilot schooling
127 Create SateleShan3 bourgeois scathing ultra's
128 Add WedgeAntilles6 video4356.mpg 5814 reformation's kitchenware's conveyor's Twinkies's Moira's
129 Create JainaSolo2 vegetating derby's impurity's
130 Create GeneralDodonna7 Dipper resolutions Polo's
131 Add CloneCommanderCody1 video731.mpg 5957 skyjacks silverfish wolverine ensuring Maldives
132 Create BastilaShan1 brash irrelevance irritated
```

The accounts are stored in the binary search tree and are viewed using function 2.

```
shaylin@shaylin-virtual-machine:~/A4toktik$ make run
/usr/bin/java -cp bin TokTik
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. Follow an account
9. List followers
10. List following
11. Remove follower
12. Unfollow account
13. Quit
Enter your choice: 7
Specify a file path: /home/shaylin/A4draft/A4toktik/data/dataset.txt
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. Follow an account
9. List followers
10. List following
11. Remove follower
12. Unfollow account
13. Quit
Enter your choice: 2
Account name: 4-LOM0
Account description: miniscule's Hamlin's Lorenz
Account name: 4-LOM1
Account description: sale contingent Gielgud's
Account name: 4-LOM2
Account description: prod's tawdry imperfect
Account name: 4-LOM3
Account description: defensiveness's Banks's subletting
Account name: 4-LOM4
Account description: encirclement's Earl nonbeliever's
Account name: 4-LOM5
Account description: horsewhips bubble's inconsistencies
Account name: 4-LOM6
Account description: Olson's docents Schroeder
Account name: 4-LOM7
Account description: Cabrini's witty emends
Account name: 4-LOM8
```

The accounts are outputted in alphabetical order with numbers coming before letters.

If we want to get the description of Zuckuss2:

```
Account name: Zuckuss1
Account description: adjustors adapt Eichmann
Account name: Zuckuss2
Account description: opposite's actor's romper's
Account name: Zuckuss3
Account description: demographics's dedication camshaft
Account name: Zuckuss4
Account description: Osceola Callexico Hawthorne
Account name: Zuckuss5
Account description: too crofts rustiest
Account name: Zuckuss6
Account description: elicit overbite clarioning
Account name: Zuckuss7
Account description: Mahavira theocratic gadget
Account name: Zuckuss8
Account description: Kim's Sheridan's puzzle
Account name: Zuckuss9
Account description: goldsmith's grape's locomotive's

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. Follow an account
9. List followers
10. List following
11. Remove follower
12. Unfollow account
13. Quit
Enter your choice: 1

Enter the account name:
zuckuss2
The profile description is: opposite's actor's romper's
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. Follow an account
9. List followers
10. List following
11. Remove follower
12. Unfollow account
13. Quit
Enter your choice:
```

As stated previously the binary search tree is not case sensitive, hence zuckuss2 would be treated the same as Zuckuss2 and it is recognized as the same account.

If we were to now create 3 accounts to insert into the tree the interface would look as follows:

```
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. Follow an account
9. List followers
10. List following
11. Remove follower
12. Unfollow account
13. Quit
Enter your choice: 3
Enter the account name: Shaylin Velne
Account created

Would you like to add your description?(y/n)
y
Enter the account description: shaylin cousin of joshua

Description updated
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. Follow an account
9. List followers
10. List following
11. Remove follower
12. Unfollow account
13. Quit
Enter your choice: 3
Enter the account name: Ghostrier5
Account created

Would you like to add your description?(y/n)
y
Enter the account description: The walking dead returns

Description updated
Choose an action from the menu:
1. Find the profile description for a given account
2. List all accounts
3. Create an account
```

```
Enter the account name: Ghostrier5
Account created

Would you like to add your description?(y/n)
y
Enter the account description: The walking dead returns

Description updated
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. Follow an account
9. List followers
10. List following
11. Remove follower
12. Unfollow account
13. Quit
Enter your choice: 3
Enter the account name: USayn
Account created

Would you like to add your description?(y/n)
n
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. Follow an account
9. List followers
10. List following
11. Remove follower
12. Unfollow account
13. Quit
Enter your choice: 2
Account name: Ghostrier5
Account description: The walking dead returns
Account name: Shaylin Velne
Account description: shaylin cousin of joshua
Account name: USayn
Account description:

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. Follow an account
9. List followers
10. List following
11. Remove follower
12. Unfollow account
13. Quit
```

Enter your choice: 3

Enter the account name: USayn

Account created

Would you like to add your description?(y/n)

n

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. Follow an account
9. List followers
10. List following
11. Remove follower
12. Unfollow account
13. Quit
```

Enter your choice: 2

Account name: Ghostrier5

Account description: The walking dead returns

Account name: Shaylin Velne

Account description: shaylin cousin of joshua

Account name: USayn

Account description:

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. Follow an account
9. List followers
10. List following
11. Remove follower
12. Unfollow account
13. Quit
```

Enter your choice: █

```
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. Follow an account
9. List followers
10. List following
11. Remove follower
12. Unfollow account
13. Quit
Enter your choice: 4
Please enter the name of the account you would like to delete: Usayn
Account deleted

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. Follow an account
9. List followers
10. List following
11. Remove follower
12. Unfollow account
13. Quit
Enter your choice: 2
Account name: Ghostriers
Account description: The walking dead returns
Account name: Shaylin Velne
Account description: shaylin cousin of joshua

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. Follow an account
9. List followers
10. List following
11. Remove follower
12. Unfollow account
13. Quit
Enter your choice:
```

The account "USayn" has been removed from the tree and deleted on TokTik.

We can now create posts for the account named Shaylin Velne:

```
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. Follow an account
9. List followers
10. List following
11. Remove follower
12. Unfollow account
13. Quit
Enter your choice: 6
Enter your account name: Shaylin Velne
Title of post: Ifris of the sun
Video Name: video90.mpg
Number of likes: 1000000
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. Follow an account
9. List followers
10. List following
11. Remove follower
12. Unfollow account
13. Quit
Enter your choice: 6
Enter your account name: Shaylin Velne
Title of post: Frissof object
Video Name: video23.mpg
Number of likes: 6789
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. Follow an account
9. List followers
10. List following
11. Remove follower
12. Unfollow account
13. Quit
Enter your choice: █
```

Once we have created the posts we can view them for Shaylin Velne:

```
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. Follow an account
9. List followers
10. List following
11. Remove follower
12. Unfollow account
13. Quit
Enter your choice: 6
Enter your account name: Shaylin Velne
Title of post: Frissof object
Video Name: video23.mpg
Number of likes: 6789
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. Follow an account
9. List followers
10. List following
11. Remove follower
12. Unfollow account
13. Quit
Enter your choice: 5
Enter the account name: Shaylin velne
Title: Frissof object
Video: video23.mpg
Number of likes: 6789
Title: Ifris of the sun
Video: video90.mpg
Number of likes: 1000000

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. Follow an account
9. List followers
10. List following
11. Remove follower
12. Unfollow account
13. Quit
Enter your choice:
```

```

Enter the account name: Shaylin velne
Title: Frissof object
Video: video23.mpg
Number of likes: 6789
Title: Ifris of the sun
Video: video90.mpg
Number of likes: 1000000

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. Follow an account
9. List followers
10. List following
11. Remove follower
12. Unfollow account
13. Quit
Enter your choice: 7
Specify a file path: /home/shaylin/A4draft/A4toktik/data/dataset.txt
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. Follow an account
9. List followers
10. List following
11. Remove follower
12. Unfollow account
13. Quit
Enter your choice: 2
Account name: 4-LOM0
Account description: miniscule's Hamlin's Lorenz
Account name: 4-LOM1
Account description: sale contingent Gielgud's
Account name: 4-LOM2
Account description: prod's tawdry imperfect
Account name: 4-LOM3
Account description: defensiveness's Banks's subletting
Account name: 4-LOM4
Account description: encirclement's Earl nonbeliever's
Account name: 4-LOM5
Account description: horsewhips bubble's inconsistencies
Account name: 4-LOM6
Account description: Olson's docents Schroeder
Account name: 4-LOM7

```

Action 7 loads a data file of actions, accounts, and posts into the binary search tree by using string handling to isolate the information in each line in the file.

The function asks the user to specify a path so that the program can be run on multiple devices.

```
Account description: littorals selvedges peccadillo's
Account name: ZamWesell6
Account description: mutinied allergen sorrier
Account name: ZamWesell7
Account description: interrupt's permissiveness's potentialities
Account name: ZamWesell8
Account description: dishes secession's coordinators
Account name: ZamWesell9
Account description: brushes stripper's expiation's
Account name: ZayneCarrick0
Account description: dialogues subcontract's colliery's
Account name: ZayneCarrick1
Account description: nude Mixtec's Leno's
Account name: ZayneCarrick2
Account description: scuba's extraterrestrial's Bissau's
Account name: ZayneCarrick3
Account description: Zoroastrianisms Cook electrolysis
Account name: ZayneCarrick4
Account description: profits height's automaton
Account name: ZayneCarrick5
Account description: hyphenation's straying fettle
Account name: ZayneCarrick6
Account description: proxy's casuist's busying
Account name: ZayneCarrick7
Account description: Seiko's generic theocratic
Account name: ZayneCarrick8
Account description: misbehaved unleash muckrakers
Account name: ZayneCarrick9
Account description: trickery's covered lenders
Account name: Zuckuss0
Account description: deformation's slyer finesse's
Account name: Zuckuss1
Account description: adjustors adapt Eichmann
Account name: Zuckuss2
Account description: opposite's actor's romper's
Account name: Zuckuss3
Account description: demographics's dedication camshaft
Account name: Zuckuss4
Account description: Osceola Calexico Hawthorne
Account name: Zuckuss5
Account description: too crofts rustiest
Account name: Zuckuss6
Account description: elicit overbite clarioning
Account name: Zuckuss7
Account description: Mahavira theocratic gadget
Account name: Zuckuss8
Account description: Kim's Sheridan's puzzle
Account name: Zuckuss9
Account description: goldsmith's grape's locomotive's
```

If we perform function 7 and specify a path and then list all accounts we should find all accounts outputted in alphabetical order. This is done using the visit function and an in order traversal.

The additional functions created are numbers 8-12:

This allows for a simulation of followers in social media.

If for example Zuckuss1 and Zuckuss3 wanted to follow Zuckuss2:

```

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. Follow an account
9. List followers
10. List following
11. Remove follower
12. Unfollow account
13. Quit
Enter your choice: 8
Enter your account name: Zuckuss1
Enter the name of the account you would like to follow: Zuckuss2
Account name: Zuckuss2
Account description: opposite's actor's romper's
Posts:

Confirm?[y/n]
y
Zuckuss2 has been followed by Zuckuss1
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. Follow an account
9. List followers
10. List following
11. Remove follower
12. Unfollow account
13. Quit
Enter your choice: 8
Enter your account name: zuckuss3
Enter the name of the account you would like to follow: Zuckuss2
Account name: Zuckuss2
Account description: opposite's actor's romper's
Posts:

Confirm?[y/n]
y
Zuckuss2 has been followed by Zuckuss3
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

```

We could also see that Zuckuss2 has 2 followers now:

```
8. Follow an account
9. List followers
10. List following
11. Remove follower
12. Unfollow account
13. Quit
Enter your choice: 8
Enter your account name: Zuckuss4
Enter the name of the account you would like to follow: Zuckuss3
Account name: Zuckuss3
Account description: demographics's dedication camshaft
Posts:

Confirm?[y/n]
y
Zuckuss3 has been followed by Zuckuss4
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. Follow an account
9. List followers
10. List following
11. Remove follower
12. Unfollow account
13. Quit
Enter your choice: 9
Enter your account name:
Zuckuss2
These are your followers:
Account name: Zuckuss1
Account description: adjustors adapt Eichmann
Account name: Zuckuss3
Account description: demographics's dedication camshaft
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. Follow an account
9. List followers
10. List following
11. Remove follower
12. Unfollow account
13. Quit
Enter your choice: █
```

If Zuckuss1 now followed 2 accounts we could view the accounts that Zuckuss1 follows:

```
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. Follow an account
9. List followers
10. List following
11. Remove follower
12. Unfollow account
13. Quit
Enter your choice: 8
Enter your account name: Zuckuss1
Enter the name of the account you would like to follow: Zuckuss8
Account name: Zuckuss8
Account description: Kim's Sheridan's puzzle
Posts:

Confirm?[y/n]
y
Zuckuss8 has been followed by Zuckuss1
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. Follow an account
9. List followers
10. List following
11. Remove follower
12. Unfollow account
13. Quit
Enter your choice: 10
Enter your account name:
Zuckuss1
You follow these accounts:
Account name: Zuckuss2
Account description: opposite's actor's romper's
Account name: Zuckuss8
Account description: Kim's Sheridan's puzzle
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. Follow an account
9. List followers
```

Zuckuss2 also has the ability to remove followers and Zuckuss1 can unfollow accounts:

```
7. Load a file of actions from disk and process this
8. Follow an account
9. List followers
10. List following
11. Remove follower
12. Unfollow account
13. Quit
Enter your choice: 11
Enter your account name:
zuckuss2
Enter the account name of the follower you would like to remove: zuckuss1
Account name: Zuckuss1
Account description: adjustors adapt Eichmann
Posts:

Confirm?[y/n]
y
Zuckuss2 has been unfollowed by Zuckuss1
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. Follow an account
9. List followers
10. List following
11. Remove follower
12. Unfollow account
13. Quit
Enter your choice: 9
Enter your account name:
zuckuss2
These are your followers:
Account name: Zuckuss3
Account description: demographics's dedication camshaft
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. Follow an account
9. List followers
10. List following
11. Remove follower
12. Unfollow account
13. Quit
Enter your choice: █
```



```
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. Follow an account
9. List followers
10. List following
11. Remove follower
12. Unfollow account
13. Quit
Enter your choice: 10
Enter your account name:
Zuckuss1
You follow these accounts:
Account name: Zuckuss8
Account description: Kim's Sheridan's puzzle
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. Follow an account
9. List followers
10. List following
11. Remove follower
12. Unfollow account
13. Quit
```

```

12. Unfollow account
13. Quit
Enter your choice: 12
Enter your account name:
Zuckuss8
Enter the account name of the account you would like to unfollow: hsjhs
The account that you want to follow could not be found
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. Follow an account
9. List followers
10. List following
11. Remove follower
12. Unfollow account
13. Quit
Enter your choice: 12
Enter your account name:
Zuckuss1
Enter the account name of the account you would like to unfollow: Zuckuss8
Account name: Zuckuss8
Account description: Kim's Sheridan's puzzle
Posts:

Confirm?[y/n]
y
Zuckuss8 has been unfollowed by Zuckuss1
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. Follow an account
9. List followers
10. List following
11. Remove follower
12. Unfollow account
13. Quit
Enter your choice: 10
Enter your account name:
zuckuss1
You follow these accounts:
Choose an action from the menu:
1. Find the profile description for a given account
2. List all accounts
3. Create an account

```

By the end of the program zuckuss 1 no longer follows any accounts and the following tree for that account would be empty.

Git usage log:

```
shaylin@shaylin-virtual-machine: /Aokkili$ git log | (ln=0; while read l; do echo $ln\: $l; ln=$((ln+1)); done) | (head -10; echo ...; tail -10)
0: commit a2e4ae97ea218bbf0b9b77bbab4ae8565bdecaac
1: Author: Shaylin Velen <shaylinvelen18@gmail.com>
2: Date: Wed Apr 19 00:40:11 2023 +0200
3:
4: final final
5:
6: commit 564d7078dcd5797df0b364b5b1080bb7607b8c40
7: Author: Shaylin Velen <shaylinvelen18@gmail.com>
8: Date: Tue Apr 18 22:10:49 2023 +0200
9:
...
25: Author: Shaylin Velen <shaylinvelen18@gmail.com>
26: Date: Mon Apr 10 21:50:03 2023 +0200
27:
28: data structure without implementation
29:
30: commit dde7fb1198adf1b0bfcae305647c5eeb9f2c17be
31: Author: Shaylin Velen <shaylinvelen18@gmail.com>
32: Date: Mon Apr 10 03:01:52 2023 +0200
33:
34: first version
```