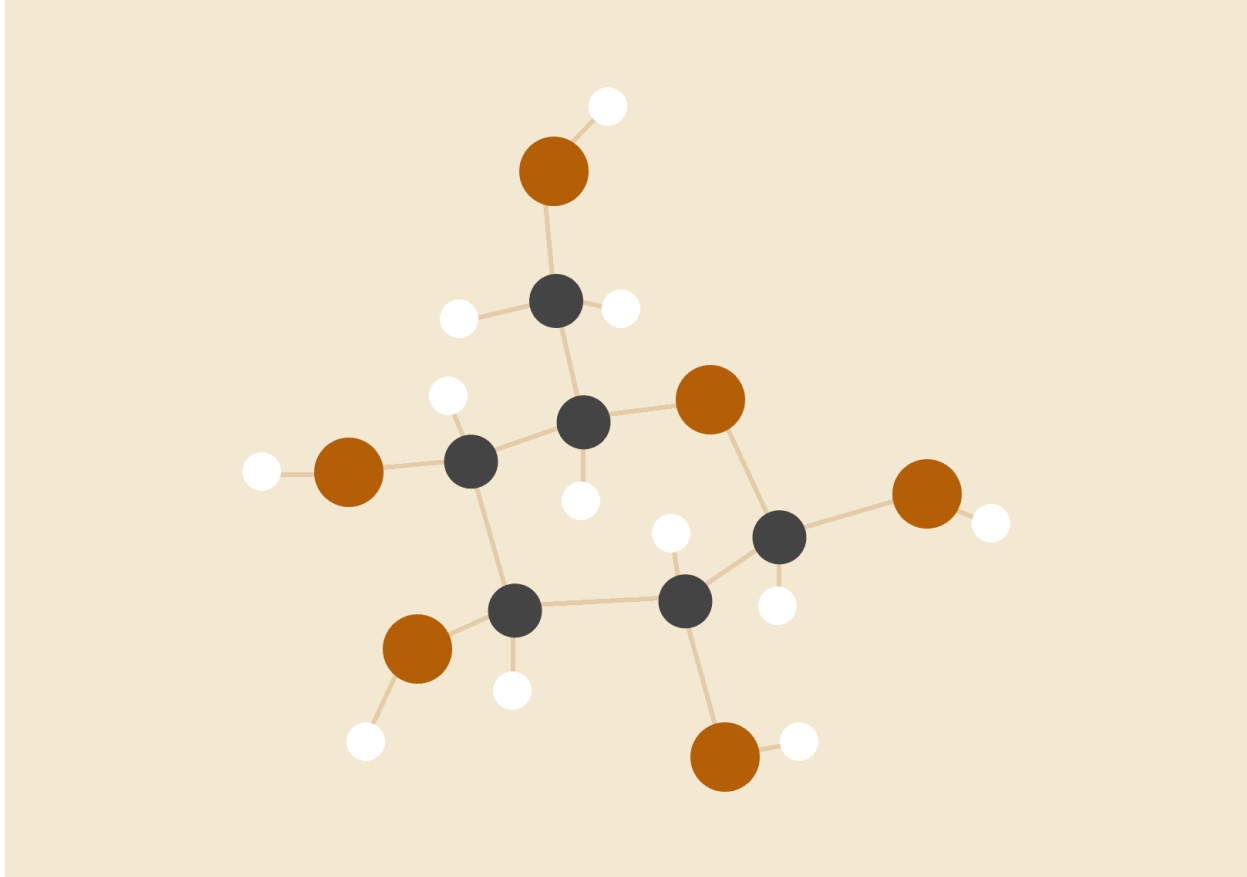


COMPUTER SCIENCE REPORT

Binary Search Trees



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INTRODUCTION

The first class created in this TikTok project is the User class. The User class stores the members of a class which in this case are accounts username, description and the lists of all posts made by that account; mentioned above define the User class function. The class implements the **Comparable** interface, which means that instances of the **User** class can be compared to each other.

The second class in the TikTok project is the Post class. The post class stores title of the video, the video clip and the description of the video. This class was created to represents a post in the TikTok platform, which has a title, a video clip, and the number of likes. The class implements the **Comparable** interface, which means that instances of the **Post** class can be compared to each other.

The **compareTo()** method is implemented to provide a natural ordering for User and **Post** objects . The method compares two **Post** objects and two user object based on their titles, video clips, and likes in that order; as well as users posts, username and description. The **compareTo()** method returns an integer value that is negative if the first **Post** object is less than the second **Post** object, zero if the two **Post** objects are equal, and positive if the first **Post** object is greater than the second **Post** object.

The **toString()** method is overridden to return a **String** representation of a User and **Post** object. The returned string contains the user's username and description as well as post's title and video clip.

The third class is the TikTok class which uses the post and user class to obtain details about the account and the posts. The user enters their choice, and the program performs the corresponding action. If the user enters an invalid choice, the program prompts them to try again.

The program stores the user accounts and their associated information (profile description and posts) in a binary search tree (BST). The actions performed by the program (create account which is in the User class, delete account, display all

posts, and add a new post) modify the contents of the Binary Search Tree.

The **findProfileDescription()** function allows the user to enter an account name and then displays the profile description associated with that account.

The **listAllAccounts()** function displays a list of all accounts stored in the BST.

The **createAccount()** function allows the user to create a new account by entering an account name and a profile description.

The **deleteAccount()** function allows the user to delete an existing account by entering the account name.

The **displayAllPosts()** function allows the user to enter an account name and then displays all the posts associated with that account.

The **addNewPost()** function allows the user to add a new post for a specified user. The user enters the post title, video clip, and number of likes, and the post is added to the user's list of posts.

The program continues to display the menu and prompt the user for input until the user chooses to quit by selecting option 8.

RESULTS

Account name Zanele not found because it has not been created

```
Enter your choice: 1
    Enter the account name: Zanele
    Account not found.
```

No accounts listed because there haven't been any created yet

```
Enter your choice: 2
List of all accounts:
```

Creating a new account name Micheal who has a profile description

```
Enter your choice: 3
Enter the account name: Michael
Enter the profile description: This is a content creator user
Account created successfully.
```

Deleting the Michael account

```
Enter your choice: 4
Enter the account name: Michael
Account deleted successfully.
Enter the account name: michael
```

Option 5

```
Enter your choice: 5
    Enter the account name: Bethwell
    null
```

Option 6

```
Enter your choice: 6
    Account name: Zinhle
    Title: Influencer
    Video: Trending video
    Likes: 100
```

It will load the dataset.txt file and do all options from 1 to 7 with it

```
Enter your choice: 7
```

```
Load a file of actions from disk and process: dataset.txt
```

CREATIVITY

The program is user friendly and easy to maneuver. When a user creates an account the program goes beyond letting the user know that the account has been created successfully. When the user deletes an account the program checks whether the account is available to be deleted if it is not available it notifies the user that there is no account to be deleted. The program went beyond the project scope in terms of implementing a follower/ followed features for multiuser feeds.

SUMMARY STATISTICS FROM GIT LOG

```
1. commit cb0b9bf8235b053a6337e25f18068f8e044fe497
```

```
Author: Zanele Ndlovu <ndlzan021@myuct.ac.za>
```

```
Date: Tue Apr 18 01:52:41 2023 +0200
```

```
successfully loading a file message
```

```
2. commit cb7a17713c9814477b61bcffed59da2c1969f76f
```

```
Author: Zanele Ndlovu <ndlzan021@myuct.ac.za>
```

```
Date: Tue Apr 18 01:39:19 2023 +0200
```

loading files and reading files for option 7

3.commit da1d8d86991fd1df81dda2e2d96726619c33716c

Author: Zanele Ndlovu <ndlzan021@myuct.ac.za>

Date: Tue Apr 18 01:31:44 2023 +0200

action 7

4.commit 6c6b7a98f7fb35ac67c742c424078ee137f113e4

Author: Zanele Ndlovu <ndlzan021@myuct.ac.za>

Date: Tue Apr 18 01:03:31 2023 +0200

find the user on the binary search tree

5.commit 8731876c98580c05b76b949d77ee88cd2196cf49

Author: Zanele Ndlovu <ndlzan021@myuct.ac.za>

Date: Tue Apr 18 01:02:47 2023 +0200

reading a file for option 7

6.commit 29d708fad1835a3ec01179c99a5a0fb7053a9af0

Author: Zanele Ndlovu <ndlzan021@myuct.ac.za>

Date: Tue Apr 18 00:53:01 2023 +0200

display all posts

7.commit 638b8ae370f837eb1233ce787efefa505f00e6db

Author: Zanele Ndlovu <ndlzan021@myuct.ac.za>

Date: Tue Apr 18 00:52:14 2023 +0200

List all accounts

8.commit c78754b40bf03d0fd3947c4e700e18ecff28bb6e

Author: Zanele Ndlovu <ndlzan021@myuct.ac.za>

Date: Tue Apr 18 00:50:28 2023 +0200

find profile description

9.commit 90c773a14a1afccec70f79fb84fc39584ba81a36

Author: Zanele Ndlovu <ndlzan021@myuct.ac.za>

Date: Tue Apr 18 00:48:14 2023 +0200

create an account in the tiktok class

10.commit 5edb2d59bad42bee72a73f0d562fb7273846e7a1

Author: Zanele Ndlovu <ndlzan021@myuct.ac.za>

Date: Tue Apr 18 00:46:36 2023 +0200

delete account if username is not null in the tiktok class

11.commit 91b6563ac4c6ca15aef6fc61fcc334b6e0f26d45

Author: Zanele Ndlovu <ndlzan021@myuct.ac.za>

Date: Tue Apr 18 00:44:55 2023 +0200

deleting an account from the binary search tree in the tiktok class

12.commit 5d5cbe95d25a95e72f7cf745e4c7c8395fc1073e

Author: Zanele Ndlovu <ndlzan021@myuct.ac.za>

Date: Tue Apr 18 00:44:07 2023 +0200

add a new post in the tiktok class

13.commit 91a39e579381e2540884465092a201f6669fad56

Author: Zanele Ndlovu <ndlzan021@myuct.ac.za>

Date: Tue Apr 18 00:43:21 2023 +0200

setting likes in the post class

14.commit e90bc202eebf01f701bcb3e8a8e63a7d35ba96fc

Author: Zanele Ndlovu <ndlzan021@myuct.ac.za>

Date: Tue Apr 18 00:42:40 2023 +0200

setting a video clip in the post class

15.commit 977d5bea7d26d819c29adb880460f4bf18685c99

Author: Zanele Ndlovu <ndlzan021@myuct.ac.za>

Date: Tue Apr 18 00:42:04 2023 +0200

Getting a string title

16.commit 7eeceff0b9a5aa909a2217ff2b26c30f2aea1637

Author: Zanele Ndlovu <ndlzan021@myuct.ac.za>

Date: Tue Apr 18 00:41:24 2023 +0200

toStrings method

17.commit 81edc8794cc9479af2c2ab48e406d0d3c8358cd2

Author: Zanele Ndlovu <ndlzan021@myuct.ac.za>

Date: Tue Apr 18 00:40:53 2023 +0200

compare user names

18.commit 8211d2ddd1fa280f520c6ff63483c732bb0382a7

Author: Zanele Ndlovu <ndlzan021@myuct.ac.za>

```
Date: Tue Apr 18 00:39:55 2023 +0200
```

```
added
```

```
19.commit 517480f2f93f420c49db9ea14dbe2a17732dd6b0
```

```
Author: Zanele Ndlovu <ndlzan021@myuct.ac.za>
```

```
Date: Mon Apr 17 16:31:08 2023 +0200
```

```
added a create account method in the tiktok class
```

```
20.commit 583f0444ba6580351accf00c69d53f2abe49ed5f
```

```
Author: Zanele Ndlovu <ndlzan021@myuct.ac.za>
```

```
Date: Thu Apr 13 21:49:29 2023 +0200
```

```
added a getPost method in a Post class.
```

Revision number from Git log

```
583f0444ba6580351accf00c69d53f2abe49ed5f
517480f2f93f420c49db9ea14dbe2a17732dd6b0
8211d2ddd1fa280f520c6ff63483c732bb0382a7
81edc8794cc9479af2c2ab48e406d0d3c8358cd2
7eeceff0b9a5aa909a2217ff2b26c30f2aea1637
977d5bea7d26d819c29adb880460f4bf18685c99
e90bc202eebf01f701bcb3e8a8e63a7d35ba96fc
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91a39e579381e2540884465092a201f6669fad56
5d5cbe95d25a95e72f7cf745e4c7c8395fc1073e
91b6563ac4c6ca15aef6fc61fcc334b6e0f26d45
5edb2d59bad42bee72a73f0d562fb7273846e7a1
90c773a14a1afccec70f79fb84fc39584ba81a36
c78754b40bf03d0fd3947c4e700e18ecff28bb6e
638b8ae370f837eb1233ce787efefa505f00e6db
29d708fad1835a3ec01179c99a5a0fb7053a9af0
8731876c98580c05b76b949d77ee88cd2196cf49
6c6b7a98f7fb35ac67c742c424078ee137f113e4
da1d8d86991fd1df81dda2e2d96726619c33716c
cb7a17713c9814477b61bcffed59da2c1969f76f
cb0b9bf8235b053a6337e25f18068f8e044fe497
353531e0cb7f894ecfe4b755f45b59f089b3e9f4
```

1. Lorem ipsum dolor sit amet
2. Consectetur adipiscing elit
3. Sed diam nonummy nibh euismod