REPORT

For the project, I created four classes to implement a data structure for Toktik, a social media platform skeleton. The classes are binaryNode, binaryTree, binarySearch, and Toktik. A binaryNode contains an account object with user information and a list of post objects. A binaryTree organizes the nodes by usernames using a binary search tree. A binarySearch provides methods to manipulate the tree. A Toktik interacts with the user and performs operations on the tree. It also uses a fileReader class to handle input and output from a text file.

The Account class is a data structure that represents a user's profile on the TikTok app. It has two attributes: name and bio, which are strings that store the user's name and a short description of themselves. The Account class also has a list of Post objects, which are the videos that the user has created and uploaded to the app.

The Account class has two methods: print and addpost. The print method displays the name and bio of the user in a formatted way. The addpost method takes a string as an argument and parses it into three components: video, title and likes. The video is a string that contains the path to the video file, the title is a string that contains the caption of the video, and the likes is a string that represents how many times the video has been liked by other users. The addpost method then creates a new Post object with these three components and inserts it into the list of posts.

The Post class is a data structure that represents a single video on the TikTok app. It has three attributes: video, title and likes, which are the same as described above. The Post has a toString method which return a formatted post.

The BinaryNode class is a data structure that represents a node in a binary search tree. It has three attributes: data, left and right. The data attribute is an Account object that stores the user's profile information. The left and right attributes are BinaryNode objects that point to the left and right children of the node, respectively. If there is no child on either side, the attribute null.

The BinaryNode class has one method: insertRight and InsertLeft. The inserting methods takes an Account object as an argument and inserts it into the binary search tree according to its name attribute. The name attribute is used as the key for comparison. If the name of the account is less than or equal to the name of the data attribute of the node, it is inserted into the left subtree. If it is greater than the name of the data attribute of the node, it is inserted into the right subtree. The insert method returns None.

The BinarySearchTree class is a data structure that inherits from the BinaryTree class. It has one attribute: root, which is a BinaryNode object that points to the root of the tree. If the tree is empty, the root attribute is null.

The BinarySearchTree class has methods: insert, find and delete. The insert method takes an Account object as an argument and creates BinaryNode object . If the root attribute is null, it creates a new BinaryNode object with the account object as its data attribute and assigns it to the root attribute.

The TikTok class is a data structure that manages all the other classes to create a working skeleton of the TikTok app. It has one attribute: bst, which is a BinarySearchTree object that stores all the accounts in a binary

I also created an Xtra class which and more functional to what was specified can find most like post of an account and number of follower an account has and can also list them.

TESTING.

Before adding new features

```
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. Quit
Enter your choice:1
Enter Acount:
Naruto
Enter the account name:Naruto
The profile description is:Talk no jutsu

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. Quit
```

```
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. Quit
Enter your choice:4
Enter the account name:
Thabo
BinaryTreeNode@f6f4d33
Account has been deleted.


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
```

```
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. Quit
Enter your choice:2
Thabo
Past
Leo88
Kai44
Emma11
Ava88
Max55
Luna66
Liam77
Mia33
Noah22
Rayn
Quee
```

After adding new features

```
Yoda7
Title:topsail's disbelief maximum's hairbrushes Suez
Video:video4978.mpg
Number of likes:3318
Title:rehearsed pukes materializes afghan's keepsake
Video:video4977.mpg
Number of likes:7246
Title:obscenity reentering disheartened Monk's paranoia
Video:video4976.mpg
Number of likes:8809
Title:Gale's unselfish Dannie's shut mistaken
Video:video4975.mpg
Number of likes:3283
Title:liver's evens interrelated precipitation yak
Video:video4974.mpg
Number of likes:7612
Title:puffiest shard austere PMing basked
Video:video4973.mpg
Number of likes:8271
Title:Majuro's hod hitches Carthaginian clomping
Video:video4972.mpg
Number of likes:3378


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. most liked post of account
9. Account followers
10. List account followers
11. Quit
Enter your choice:8
Enter Acount:
Yoda7
Title:obscenity reentering disheartened Monk's paranoia
Video:video4976.mpg
Number of likes:8809


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. most liked post of account
9. Account followers
10. List account followers
11. Quit
Enter your choice:11
```

```
root@KRONAS:/mnt/c/Users/AYANDA/Desktop/AYANDA# nano src\binarySearchTree.java
root@KRONAS:/mnt/c/Users/AYANDA/Desktop/AYANDA# make run
/usr/bin/javac -d bin/ -cp bin src/TokTik.java
/usr/bin/java -cp bin TokTik

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. most liked post of account
9. Account followers
10. List account followers
11. Quit
Enter your choice:7
Enter the file name:
dataset.txt
file has been loaded.


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. most liked post of account
9. Account followers
10. List account followers
11. Quit
Enter your choice:1
Enter Acount:
Yoda7
Enter the account name:Yoda7
The profile description is:baseline's vivifies yarmulkes

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. most liked post of account
9. Account followers
10. List account followers
11. Quit
Enter your choice:3
Enter the Acount name:
Rose
Enter Account description:
roses are red
```

```
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. most liked post of account
9. Account followers
10. List account followers
11. Quit
Enter your choice:4
Enter the account name:
Rose
Account has been deleted.


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. most liked post of account
9. Account followers
10. List account followers
11. Quit
Enter your choice:6
Enter the Acount name:
Yoda7
Enter the Post Title:
force be with you may
Enter video:
video.mp4
Enter post Likes:
123
Post has been added.
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. most liked post of account
9. Account followers
10. List account followers
11. Quit
Enter your choice:5
Enter the Acount name:
Yoda
The Account name you entered does not exist.
```

Git log.

0: commit 1893e2d7089858e2256aadf8f3acea22f0d9ea13

1: Author: root <root@KRONAS>

2: Date: Wed Apr 19 22:50:54 2023 +0200

3:

4: new features added

5:

6: commit 36244d0e6689cb15877b3da261424181cc07c02e

7: Author: root <root@KRONAS>

8: Date: Wed Apr 19 22:13:40 2023 +0200

9:

…

55: Author: ayanda <past952@gmail.com>

56: Date: Tue Apr 18 16:16:34 2023 +0200

57:

58: delete

59:

60: commit 8186b9935ed190414828b8f74d285e76c67e0f6f

61: Author: ayanda <past952@gmail.com>

62: Date: Tue Apr 18 16:03:46 2023 +0200

63:

64: Ayanda Phaketsi CSC A4 fist commit