

# GEBZE TECHNICAL UNIVERSITY

## CSE222 – HW3 REPORT

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### 1) Time Complexity Analysis :

#### i) Adding an element at the end :

Basic Array	Array List	Linked List	LD Linked List
O(N)	O(1)	O(1)	O(N)
To find the end of the array, it traverses the array till the end since number of elements is not known in my design.	It just puts the new element at the end since number of elements is known and it has random access. It has a bottleneck since it can reallocate the array in O(N) time.	It just creates a new node and arrange pointers so that tail is changed to point the new node.	To find the end of the list, it traverses the list till the end since it does not keep the tail variable.
- It is slower than array list and linked list. * It is same as LD Linked List.	+ It is faster than basic array and LD linked list. - It can be slower than basic array if it reallocates.	+ It is faster than basic array and LD linked list.	- It is slower than array list and linked list. * It is same as Basic Array.

#### ii) Traversing/Searching :

Basic Array	Array List	Linked List	LD Linked List
O(N)	O(N)	O(N)	O(N)
It starts from the beginning and increments the counter till the end.	It starts from the beginning and increments the counter till the end.	It starts from the beginning and changes the current node to point the next node till the end.	It starts from the beginning, each time it checks if the node is marked as deleted and changes the current node to point the next node till the end
+ It is faster than LD Linked List. * It is same as Array List and Linked List.	+ It is faster than LD Linked List. * It is same as Basic Array and Linked List.	+ It is faster than LD Linked List. * It is same as Basic Array and Array List.	- It is slower than other structures since it has to check if nodes are deleted.

iii) Removing a random element :

Basic Array	Array List	Linked List	LD Linked List
O(N)	O(N)	O(N)	O(N)
It searches the element in O(N) time first, then it shifts the rest of the array towards the removing element in O(N) time.	It searches the element in O(N) time first, then it shifts the rest of the array towards the removing element in O(N) time.	It searches the element in O(N) time first, then it arranges previous and next nodes' pointers so that they do not point the removing node in O(1) time.	It searches the element in O(N) time first, then it marks the removing node in O(1) time and increments the number of deleted nodes. If number of deleted nodes is 2 then it starts from the beginning, finds the marked nodes, and arrange pointers in O(N) time.
<ul style="list-style-type: none"> <li>- It is slower than Linked List.</li> <li>* It is same as ArrayList.</li> </ul>	<ul style="list-style-type: none"> <li>- It is slower than Linked List.</li> <li>* It is same as Basic Array.</li> </ul>	<ul style="list-style-type: none"> <li>+ It is faster than Basic Array and Linked List.</li> <li>+ It is faster than LD Linked List in searching the elements.</li> <li>+ If LD Linked List has 1 marked node before, then Linked List is faster than LD Linked List since it only has to arrange pointers but LD Linked List has to traverse the list, find the marked nodes, and arrange pointers.</li> <li>- If LD Linked List does not have 1 marked node before, then LD Linked List is faster than Linked List in removing.</li> </ul>	<ul style="list-style-type: none"> <li>+ It is faster than other structures in removing the element that is found if there are no marked nodes before since it only marks the node.</li> <li>- It is slower than other structures in removing the element that is found if there is a marked node since it has to traverse the list, find the nodes, and arrange pointers.</li> <li>- It is slower than other structures in searching the element.</li> </ul>

Operations	Basic Array	Array List	Linked List	LD Linked List
Signup(Search+Add)	O(N)	O(N)	O(N)	O(N)
Login(Traverse)	O(N)	O(N)	O(N)	O(N)
Logout	O(1)	O(1)	O(1)	O(1)
SharePost(Traverse+Add)	O(N)	O(N)	O(N)	O(N)
Follow(Search+Add)	O(N)	O(N)	O(N)	O(N)
LikePost(Search+Add)	O(N)	O(N)	O(N)	O(N)
MakeComment (Search+Add)	O(N)	O(N)	O(N)	O(N)
SendMessage (Search+Add)	O(N)	O(N)	O(N)	O(N)
ViewAccount (Add for history)	O(N)	O(N)	O(N)	O(N)
ViewInteractions (Traverse)	O(N)	O(N)	O(N)	O(N)
CheckInbox(Traverse)	O(N)	O(N)	O(N)	O(N)
CheckOutbox(Traverse)	O(N)	O(N)	O(N)	O(N)
ViewInbox(Traverse)	O(N)	O(N)	O(N)	O(N)
ViewOutbox(Traverse)	O(N)	O(N)	O(N)	O(N)
BlockAccount (Traverse+Add+Remove)	O(N)	O(N)	O(N)	O(N)
UnblockAccount (Traverse+Remove+Add)	O(N)	O(N)	O(N)	O(N)
UnlikePost (Traverse+Remove+Add)	O(N)	O(N)	O(N)	O(N)
Uncomment (Traverse+Remove+Add)	O(N)	O(N)	O(N)	O(N)
Unfollow (Traverse+Remove+Add)	O(N)	O(N)	O(N)	O(N)
ShowHistory(Traverse)	qO(N)	O(N)	O(N)	O(N)

## 2) Experimental Running Time Analysis :

Implementation Type	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Basic Array Structure	0.018s	0.013s	0.009s	-----
Array List Structure	0.017s	0.012s	0.009s	0.045s
Linked List Structure	0.017s	0.013s	0.009s	0.044s
LD Linked List Structure	0.02s	0.014s	0.012s	0.046s

**Scenarios 1,2** does not have any remove functions. They have traversing/searching and adding functions.

**Scenario 3** has remove function in blocking in addition to traversing/searching and adding functions.

**Scenario 4** has all functions as traversing/searching, adding, and removing functions(undo operations).

**Basic Array vs Array List:** In traversing/searching, their running times are exactly same. In adding, array list is faster than basic array if it does not reallocate. This can be seen directly from scenarios 1,2 as array list is faster than basic array. In these scenarios Array List does not reallocate because it has default 10 capacity.

**Array List vs Linked List:** In traversing/searching and adding, they have the same running time and they have almost same efficiency. This can be seen directly from scenarios 1,2 as their running times are similar. In scenarios 3 and 4, Linked List is faster because it is faster than Array List in removing a random element. This difference is not seen in scenario 3, but it is seen in scenario 4.

**Linked List vs LD Linked List:** In traversing/searching, LD Linked List is slower than Linked List since it has to check if the nodes are marked. In adding at the end, LD Linked List is again slower than Linked List since it has to traverse till the end. These facts can directly be seen from scenarios 1,2 as Linked List is faster than LD Linked List. In scenarios 3 and 4, there are removing operations. In removing when there is no elements removed before LD Linked List is faster, but when there is an element marked as removed before LD Linked List is slower. This fact is not directly observed from the experimental running times since the scenarios do not have much removing operations, and LD Linked List does the physical removing after only 2 nodes are marked. In scenarios 3 and 4, linked list is seemed to be still faster, because these scenarios are traversing/searching and adding operations dominated.

### 3) Problem Solution Approach for LDLinkedList :

Firstly, I tried to understand how lazy deletion in linked list works. I found out that the ld linked list does not directly remove the nodes when a node is wanted to be removed. The node has to be marked to be removed from the list physically after 2 nodes are marked. In that purpose, a node should keep a flag indicating it is marked as deleted or not.

In design phase, I think LD Linked List should not show/return the elements marked as removed to the user of this list to hide the implementation details from the user. In that purpose, I decided to implement the LD Linked List's methods and iterators to function as same as any other List implementation like Linked List of Java so that it works as List interface offers.

LD Linked List had to extend AbstractList but most of the implementations AbstractList provides had to be overridden since LD Linked List has nodes marked as removed. I overrided most of the methods like add,set,get,remove and others. I also implemented iterator and list iterator such that they hide the nodes marked as deleted and obeys the interfaces of these iterators. Moreover, LD Linked List keeps number of active nodes and number of deleted nodes seperately for effective implementation.

In implementations of LD Linked List methods, the most important thing was traversing. I implemented the list such that it checks if the nodes are marked as deleted whenever the list is traversed.

### 4) Running Commands and Results:

#### Running commands of version 1:

```
cd version1
javac *.java
cd ..
java version1.TestClass1
java version1.TestClass2
java version1.TestClass3
```

#### Running commands of version 2:

```
cd version2
javac *.java
cd ..
java version2.TestClass1
java version2.TestClass2
java version2.TestClass3
java version2.TestClass4
```

### Running commands of version 3:

```
cd version3
javac *.java
cd ..
java version3.TestClass1
java version3.TestClass2
java version3.TestClass3
java version3.TestClass4
```

### Running commands of version 4:

```
cd version4
javac *.java
cd ..
java version4.TestClass1
java version4.TestClass2
java version4.TestClass3
java version4.TestClass4
```

### Screenshots of Version 1:

#### Test 1:

-----

```
emre@ubuntu:~/Desktop/200104004099$ cd version1
emre@ubuntu:~/Desktop/200104004099/version1$ javac *.java
emre@ubuntu:~/Desktop/200104004099/version1$ cd ..
emre@ubuntu:~/Desktop/200104004099$ java version1.TestClass1
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```

Step 1... Creating accounts...

An account with username gizemsungu has been created.  
An account with username sibelgulmez has been created.  
An account with username gokhankaya has been created.

Step 2... Logging into an account (username: sibelgulmez)...

Step 3... Sharing two posts...

Step 4... Following gizemsungu and gokhankaya...

Step 5... Logging out from account 'sibelgulmez'...

Step 6... Logging into another account (username: gokhankaya)...

Step 7... Viewing sibelgulmez's profile...

-----

User ID: 2  
Username: sibelgulmez  
Location: Istanbul  
Birth Date: 10.03.1995  
sibelgulmez is following 2 account(s) and has 0 followers(s).  
sibelgulmez is following: gizemsungu, gokhankaya,  
sibelgulmez has 2 posts.

Step 8... Viewing sibelgulmez's posts...

(PostID: 1) sibelgulmez: I like Java.  
(PostID: 2) sibelgulmez: Java the coffee...

Step 9... Liking a post of sibelgulmez...

Step 10... Adding a comment on a post of sibelgulmez...

Step 11... Following sibelgulmez and gizemsungu...

Step 12... Sending a message to gizemsungu...

Step 13... Logging out from account 'gokhankaya'...

Step 14... Logging into another account (username: gizemsungu)...

Step 15... Checking outbox...

There is/are 0 message(s) in the outbox.

Step 16... Checking inbox...

There is/are 1 message(s) in the inbox.

Step 17... Viewing inbox...

Viewing inbox...

-----

Message ID: 0  
From: gokhankaya  
To: gizemsungu  
Message: This homework is too easy!

Step 18... Viewing sibelgulmez's profile...

-----

User ID: 2  
Username: sibelgulmez  
Location: Istanbul  
Birth Date: 10.03.1995  
sibelgulmez is following 2 account(s) and has 1 followers(s).  
The followers of sibelgulmez are: gokhankaya,  
sibelgulmez is following: gizemsungu, gokhankaya,  
sibelgulmez has 2 posts.

Step 19... Viewing sibelgulmez's posts...

(PostID: 1) sibelgulmez: I like Java.  
(PostID: 2) sibelgulmez: Java the coffee...

Step 20... Viewing sibelgulmez's posts' interactions...

-----

(PostID: 1): I like Java.  
The post was liked by the following account(s): gokhankaya,  
The post has 1 comment(s)...  
Comment 1: 'gokhankaya' said 'me too!'

-----

(PostID: 2): Java the coffee...

The post has no likes.

The post has no comments.

Step 21... Liking sibelgulmez's posts...

```
Step 21... Liking sibelgulmez's posts...

Step 22... Viewing sibelgulmez's posts' interactions...
-----
(PostID: 1): I like Java.
The post was liked by the following account(s): gokhankaya, gizemsungu,
The post has 1 comment(s)...
Comment 1: 'gokhankaya' said 'me too!'
-----
(PostID: 2): Java the coffee...
The post was liked by the following account(s): gizemsungu,
The post has no comments.
```

## Test 2:

```
emre@ubuntu:~/Desktop/200104004099$ java version1.TestClass2
CSE222 - HW3

An account with username gizemsungu has been created.
An account with username sibelgulmez has been created.
An account with username gokhankaya has been created.

Step 1... Logging into another account (username: gizemsungu)...

Step 1-a... Sharing a post...

Step 1-b... Sharing another post...

Step 1-c... Logging out from account 'gizemsungu'..

Step 2... Logging into another account (username: sibelgulmez)...

Step 2-a... Viewing gizemsungu's profile...
-----
User ID: 1
Username: gizemsungu
Location: Kocaeli
Birth Date: 14.05.1993
gizemsungu is following 0 account(s) and has 2 followers(s).
The followers of gizemsungu are: sibelgulmez, gokhankaya,
gizemsungu has 2 posts.

Step 2-b... Liking Post1...

Step 2-c... Logging out from account 'sibelgulmez'..

Step 3... Logging into another account (username: gokhankaya)...

Step 3-a... Viewing gizemsungu's account...
-----
User ID: 1
Username: gizemsungu
Location: Kocaeli
Birth Date: 14.05.1993
gizemsungu is following 0 account(s) and has 2 followers(s).
The followers of gizemsungu are: sibelgulmez, gokhankaya,
gizemsungu has 2 posts.

Step 3-b... Commenting on Post2...

Step 3-c... Sending a message to gizemsungu...
```

```
Step 3-c... Sending a message to gizemsungu...

Step 3-d... Logging out from account 'gokhankaya'..

Step 4... Logging into another account (username: gizemsungu)...

Step 4-a... Viewing gizemsungu's profile...
-----
User ID: 1
Username: gizemsungu
Location: Kocaeli
Birth Date: 14.05.1993
gizemsungu is following 0 account(s) and has 2 followers(s).
The followers of gizemsungu are: sibelgulmez, gokhankaya,
gizemsungu has 2 posts.

Step 4-b... Viewing inbox...
Viewing inbox...
-----
Message ID: 0
From: gokhankaya
To: gizemsungu
Message: This homework is too easy!
-----
Message ID: 1
From: gokhankaya
To: gizemsungu
Message: Hello!
```

### Test 3:

```
emre@ubuntu:~/Desktop/200104004099$ java version1.TestClass3
CSE222 - HW3

An account with username gizemsungu has been created.
An account with username sibelgulmez has been created.
An account with username gokhankaya has been created.

Step 1...Logging into another account (username: gizemsungu)...

-----
User ID: 1
Username: gizemsungu
Location: Kocaeli
Birth Date: 14.05.1993
gizemsungu is following 1 account(s) and has 2 followers(s).
The followers of gizemsungu are: sibelgulmez, gokhankaya,
gizemsungu is following: sibelgulmez,
gizemsungu has 2 posts.

-----
User ID: 2
Username: sibelgulmez
Location: Istanbul
Birth Date: 10.03.1995
sibelgulmez is following 2 account(s) and has 2 followers(s).
The followers of sibelgulmez are: gokhankaya, gizemsungu,
sibelgulmez is following: gizemsungu, gokhankaya,
sibelgulmez has 2 posts.

Step 1-a...Blocking sibelgulmez...

Step 1-b...Logging out from account 'gizemsungu'..

Step 2...Logging into another account (username: sibelgulmez)...

Step 2-a...Viewing gizemsungu's profile...
WARNING: You are blocked!

Step 2-b...Trying to send message to gizemsungu
WARNING: You are blocked!
```



## Screenshots of Version 2:

### Test 1:

-----

```
emre@ubuntu:~/Desktop$ cd 200104004099/version2
emre@ubuntu:~/Desktop/200104004099/version2$ javac *.java
emre@ubuntu:~/Desktop/200104004099/version2$ cd ..
emre@ubuntu:~/Desktop/200104004099$ java version2.TestClass1
CSE222 - HW3

Step 1... Creating accounts...
An account with username gizemsungu has been created.
An account with username sibelgulmez has been created.
An account with username gokhankaya has been created.

Step 2... Logging into an account (username: sibelgulmez)...

Step 3... Sharing two posts...

Step 4... Following gizemsungu and gokhankaya...

Step 5... Logging out from account 'sibelgulmez'...

Step 6... Logging into another account (username: gokhankaya)...

Step 7... Viewing sibelgulmez's profile...
-----
User ID: 2
Username: sibelgulmez
Location: Istanbul
Birth Date: 10.03.1995
sibelgulmez is following 2 account(s) and has 0 followers(s).
sibelgulmez is following: gizemsungu, gokhankaya,
sibelgulmez has 2 posts.

Step 8... Viewing sibelgulmez's posts...
(PostID: 1) sibelgulmez: I like Java.
(PostID: 2) sibelgulmez: Java the coffee...

Step 9... Liking a post of sibelgulmez...

Step 10... Adding a comment on a post of sibelgulmez...

Step 11... Following sibelgulmez and gizemsungu...

Step 12... Sending a message to gizemsungu...

Step 13... Logging out from account 'gokhankaya'..

Step 14... Logging into another account (username: gizemsungu)...
```

```
Step 15... Checking outbox...
There is/are 0 message(s) in the outbox.

Step 16... Checking inbox...
There is/are 1 message(s) in the inbox.

Step 17... Viewing inbox...
Viewing inbox...
-----
Message ID: 0
From: gokhankaya
To: gizemsungu
Message: This homework is too easy!

Step 18... Viewing sibelgulmez's profile...
-----
User ID: 2
Username: sibelgulmez
Location: Istanbul
Birth Date: 10.03.1995
sibelgulmez is following 2 account(s) and has 1 followers(s).
The followers of sibelgulmez are: gokhankaya,
sibelgulmez is following: gizemsungu, gokhankaya,
sibelgulmez has 2 posts.

Step 19... Viewing sibelgulmez's posts...
(PostID: 1) sibelgulmez: I like Java.
(PostID: 2) sibelgulmez: Java the coffee...

Step 20... Viewing sibelgulmez's posts' interactions...
-----
(PostID: 1): I like Java.
The post was liked by the following account(s): gokhankaya,
The post has 1 comment(s)...
Comment 1: 'gokhankaya' said 'me too!'
-----
(PostID: 2): Java the coffee...
The post has no likes.
The post has no comments.
```

```
Step 21... Liking sibelgulmez's posts...

Step 22... Viewing sibelgulmez's posts' interactions...
-----
(PostID: 1): I like Java.
The post was liked by the following account(s): gokhankaya, gizemsungu,
The post has 1 comment(s)...
Comment 1: 'gokhankaya' said 'me too!'
-----
(PostID: 2): Java the coffee...
The post was liked by the following account(s): gizemsungu,
The post has no comments.
```

## Test 2:

```
emre@ubuntu:~/Desktop/200104004099$ java version2.TestClass2
CSE222 - HW3

An account with username gizemsungu has been created.
An account with username sibelgulmez has been created.
An account with username gokhankaya has been created.

Step 1... Logging into another account (username: gizemsungu)...

Step 1-a... Sharing a post...

Step 1-b... Sharing another post...

Step 1-c... Logging out from account 'gizemsungu'..

Step 2... Logging into another account (username: sibelgulmez)...

Step 2-a... Viewing gizemsungu's profile...
-----
User ID: 1
Username: gizemsungu
Location: Kocaeli
Birth Date: 14.05.1993
gizemsungu is following 0 account(s) and has 2 followers(s).
The followers of gizemsungu are: sibelgulmez, gokhankaya,
gizemsungu has 2 posts.

Step 2-b... Liking Post1...

Step 2-c... Logging out from account 'sibelgulmez'..

Step 3... Logging into another account (username: gokhankaya)...

Step 3-a... Viewing gizemsungu's account...
-----
User ID: 1
Username: gizemsungu
Location: Kocaeli
Birth Date: 14.05.1993
gizemsungu is following 0 account(s) and has 2 followers(s).
The followers of gizemsungu are: sibelgulmez, gokhankaya,
gizemsungu has 2 posts.

Step 3-b... Commenting on Post2...
```

```

Step 3-c... Sending a message to gizemsungu...

Step 3-d... Logging out from account 'gokhankaya'..

Step 4...Logging into another account (username: gizemsungu)...

Step 4-a...Viewing gizemsungu's profile...
-----
User ID: 1
Username: gizemsungu
Location: Kocaeli
Birth Date: 14.05.1993
gizemsungu is following 0 account(s) and has 2 followers(s).
The followers of gizemsungu are: sibelgulmez, gokhankaya,
gizemsungu has 2 posts.

Step 4-b...Viewing inbox...
Viewing inbox...
-----
Message ID: 0
From: gokhankaya
To: gizemsungu
Message: This homework is too easy!
-----
Message ID: 1
From: gokhankaya
To: gizemsungu
Message: Hello!

```

### Test 3:

-----

```

lenre@ubuntu:~/Desktop/200104004099$ java version2.TestClass3
CSE222 - HW3

An account with username gizemsungu has been created.
An account with username sibelgulmez has been created.
An account with username gokhankaya has been created.

Step 1...Logging into another account (username: gizemsungu)...
-----
User ID: 1
Username: gizemsungu
Location: Kocaeli
Birth Date: 14.05.1993
gizemsungu is following 1 account(s) and has 2 followers(s).
The followers of gizemsungu are: sibelgulmez, gokhankaya,
gizemsungu is following: sibelgulmez,
gizemsungu has 2 posts.
-----
User ID: 2
Username: sibelgulmez
Location: Istanbul
Birth Date: 10.03.1995
sibelgulmez is following 2 account(s) and has 2 followers(s).
The followers of sibelgulmez are: gokhankaya, gizemsungu,
sibelgulmez is following: gizemsungu, gokhankaya,
sibelgulmez has 2 posts.

Step 1-a...Blocking sibelgulmez...
Step 1-b...Logging out from account 'gizemsungu'..

Step 2...Logging into another account (username: sibelgulmez)...

Step 2-a...Viewing gizemsungu's profile...
WARNING: You are blocked!

Step 2-b...Trying to send message to gizemsungu
WARNING: You are blocked!

```

#### Test 4:

```
emre@ubuntu:~/Desktop/200104004099$ java version2.TestClass4  
CSE222 - HW3
```

Step 1... Creating accounts...

An account with username gizemsungu has been created.  
An account with username sibelgulmez has been created.  
An account with username gokhankaya has been created.  
An account with username emreoytun has been created.  
An account with username ali61 has been created.  
An account with username simge10 has been created.  
An account with username meryem has been created.  
An account with username canoz has been created.  
An account with username ahmet21 has been created.  
An account with username veli has been created.

Step 2... Logging into an account (username: emreoytun)...

Step 3... Sharing two posts...

Step 4... Following meryem...

Step 5... Blocking can...

Step 5... Logging out from account 'emreoytun'...

Step 6... Logging into an account (username: gizemsungu)...

Step 7... Liking posts of emreoytun...

Step 8... Logging out from account 'gizemsungu'...

Step 9... Logging into an account (username: gokhankaya)...

Step 10... Liking post of emreoytun...

Step 11... Viewing emreoytun's profile...

-----

User ID: 4

Username: emreoytun

Location: Istanbul

Birth Date: 16.02.2001

emreoytun is following 1 account(s) and has 0 followers(s).

emreoytun is following: meryem,

emreoytun has 2 posts.

```
Step 12... Viewing emreoytun's posts' interactions...
-----
(PostID: 1): First post in new app.
The post was liked by the following account(s): gizemsungu, gokhankaya,
The post has no comments.
-----
(PostID: 2): Happy to announce i got the job!
The post was liked by the following account(s): gizemsungu,
The post has no comments.

Step 13... Logging out from account 'gokhankaya'...

Step 14... Logging into an account (username: gizemsungu)...

Step 15... Unliking post of emreoytun...

Step 16... Logging out from account 'gizemsungu'...

Step 17... Logging into an account (username: gokhankaya)...

Step 18... Unliking post of emreoytun...

Step 19... Viewing emreoytun's profile...
-----
User ID: 4
Username: emreoytun
Location: Istanbul
Birth Date: 16.02.2001
emreoytun is following 1 account(s) and has 0 followers(s).
emreoytun is following: meryem,
emreoytun has 2 posts.

Step 20.. Viewing emreoytun's posts' interactions...
-----
(PostID: 1): First post in new app.
The post has no likes.
The post has no comments.
-----
(PostID: 2): Happy to announce i got the job!
The post was liked by the following account(s): gizemsungu,
The post has no comments.

Step 21... Logging out from account 'gokhankaya'...
```

Step 22... Logging into an account (username: sibelgulmez)...

Step 23... Following ali...

Step 24... Sharing a post...

Step 25... Logging out from account 'sibelgulmez'...

Step 26... Logging into an account (username: emreoytun)...

Step 27... Following sibelgulmez...

Step 28... Liking the post of sibelgulmez...

Step 29... Adding a comment on a post of sibelgulmez...

Step 30... Blocking gokhankaya...

Step 31... Unblocking can...

Step 32... Unfollowing meryem...

Step 33... Logging out from account 'emreoytun'...

Step 34... Logging into an account (username: ali)...

Step 35... Following sibelgulmez...

Step 36... Adding a comment on a post of sibelgulmez...

Step 37... Logging out from account 'ali'...

Step 38... Logging into an account (username: simge)...

Step 39... Viewing sibelgulmez's profile...

-----

User ID: 2

Username: sibelgulmez

Location: Istanbul

Birth Date: 10.03.1995

sibelgulmez is following 1 account(s) and has 2 followers(s).

The followers of sibelgulmez are: emreoytun, ali61,

sibelgulmez is following: ali61,

sibelgulmez has 1 posts.

```
Step 40... Viewing sibelgulmez's posts' interactions...
-----
(PostID: 3): GTU is the best!
The post was liked by the following account(s): emreoytun,
The post has 2 comment(s)...
Comment 1: 'emreoytun' said 'It's hard though'
Comment 2: 'ali61' said 'I think so...'

Step 41... Logging out from account 'simge'...

Step 42... Logging into an account (username: sibelgulmez)...

Step 43... Blocking ali...

Step 44... Logging out from account 'sibelgulmez'...

Step 45... Logging into an account (username: ali)...

Step 46... Viewing sibelgulmez's profile...
WARNING: You are blocked!
Step 47... Viewing sibelgulmez's posts' interactions...
WARNING: You are blocked!

Step 48... Liking posts of emreoytun...

Step 49... Logging out from account 'ali'...

Step 50... Logging into an account (username: sibelgulmez)...

Step 51... Unblocking ali...

Step 52... Logging out from account 'sibelgulmez'...

Step 53... Logging into an account (username: ali)...

Step 54... Viewing sibelgulmez's profile...
-----
User ID: 2
Username: sibelgulmez
Location: Istanbul
Birth Date: 10.03.1995
sibelgulmez is following 0 account(s) and has 1 followers(s).
The followers of sibelgulmez are: emreoytun,
sibelgulmez has 1 posts.
```

```
Step 55... Viewing sibelgulmez's posts' interactions...
-----
(PostID: 3): GTU is the best!
The post was liked by the following account(s): emreoytun,
The post has 1 comment(s)...
Comment 1: 'emreoytun' said 'It's hard though'

Step 56... Logging out from account 'ali'...

Step 57... Logging into an account (username: meryem)...

Step 58... Sharing a post...

Step 59... Logging out from account 'meryem'...

Step 60... Logging into an account (username: can)...

Step 61... Adding a comment on a post of meryem...

Step 62... Logging out from account 'can'...

Step 63... Logging into an account (username: ahmet)...

Step 64... Viewing meryem's profile...
-----
User ID: 7
Username: meryem
Location: Sivas
Birth Date: 03.07.2000
meryem is following 0 account(s) and has 0 followers(s).
meryem has 1 posts.

Step 65... Viewing meryem's posts' interactions...
-----
(PostID: 4): New post in new site!
The post has no likes.
The post has 1 comment(s)...
Comment 1: 'canoz' said 'I just found this site'

Step 66... Logging out from account 'ahmet'...

Step 67... Logging into an account (username: can)...

Step 68... Uncommenting a comment on a post of meryem...
```



```
Step 69... Logging out from account 'can'...

Step 70... Logging into an account (username: ahmet)...

Step 71... Viewing meryem's profile...
-----
User ID: 7
Username: meryem
Location: Sivas
Birth Date: 03.07.2000
meryem is following 0 account(s) and has 0 followers(s).
meryem has 1 posts.

Step 72... Viewing meryem's posts' interactions...
-----
(PostID: 4): New post in new site!
The post has no likes.
The post has no comments.

Step 73... Logging out from account 'ahmet'...

Step 74... Logging into an account (username: emreoytun)...

Step 75... Following veli...

Step 76... Viewing veli's profile...
-----
User ID: 10
Username: veli
Location: Antalya
Birth Date: 10.10.1990
veli is following 0 account(s) and has 1 followers(s).
The followers of veli are: emreoytun,
veli has 0 posts.

Step 77... Logging out from account 'emreoytun'...

Step 78... Logging into an account (username: veli)...
```

```
Step 79... Viewing emreoytun's profile...
-----
User ID: 4
Username: emreoytun
Location: Istanbul
Birth Date: 16.02.2001
emreoytun is following 2 account(s) and has 0 followers(s).
emreoytun is following: sibelgulmez, veli,
emreoytun has 2 posts.

Step 80... Following emreoytun...

Step 81... Logging out from account 'veli'...

Step 82... Logging into an account (username: emreoytun)...

Step 83... Unfollowing veli...

Step 84... Logging out from account 'emreoytun'...

Step 85... Logging into an account (username: simge)...

Step 86... Viewing emreoytun's profile...
-----
User ID: 4
Username: emreoytun
Location: Istanbul
Birth Date: 16.02.2001
emreoytun is following 1 account(s) and has 1 followers(s).
The followers of emreoytun are: veli,
emreoytun is following: sibelgulmez,
emreoytun has 2 posts.

Step 87... Viewing veli's profile...
-----
User ID: 10
Username: veli
Location: Antalya
Birth Date: 10.10.1990
veli is following 1 account(s) and has 0 followers(s).
veli is following: emreoytun,
veli has 0 posts.
```

```
Step 88... Logging out from account 'simge'...

Step 89... Logging into an account (username: emreoytun)...

Step 90... Showing history of emreoytun...
You shared a post id: 1
You shared a post id: 2
You followed meryem
You blocked canoz
You followed sibelgulmez
You liked sibelgulmez's post id: 3
You commented sibelgulmez's post id: 3
You blocked gokhankaya
You unblocked canoz
You unfollowed meryem
You followed veli
You viewed veli's account
You unfollowed veli
```

### Screenshots of Version 3:

---

#### Test 1:

---

```
CSE222 - HW3

Step 1... Creating accounts...
An account with username gizemsungu has been created.
An account with username sibelgulmez has been created.
An account with username gokhankaya has been created.

Step 2... Logging into an account (username: sibelgulmez)...

Step 3... Sharing two posts...

Step 4... Following gizemsungu and gokhankaya...

Step 5... Logging out from account 'sibelgulmez'...

Step 6... Logging into another account (username: gokhankaya)...

Step 7... Viewing sibelgulmez's profile...
-----
User ID: 2
Username: sibelgulmez
Location: Istanbul
Birth Date: 10.03.1995
sibelgulmez is following 2 account(s) and has 0 followers(s).
sibelgulmez is following: gizemsungu, gokhankaya,
sibelgulmez has 2 posts.

Step 8... Viewing sibelgulmez's posts...
(PostID: 1) sibelgulmez: I like Java.
(PostID: 2) sibelgulmez: Java the coffee...

Step 9... Liking a post of sibelgulmez...

Step 10... Adding a comment on a post of sibelgulmez...

Step 11... Following sibelgulmez and gizemsungu...

Step 12... Sending a message to gizemsungu...

Step 13... Logging out from account 'gokhankaya'..

Step 14... Logging into another account (username: gizemsungu)...
```

```
Step 15... Checking outbox...
There is/are 0 message(s) in the outbox.

Step 16... Checking inbox...
There is/are 1 message(s) in the inbox.

Step 17... Viewing inbox...
Viewing inbox...
-----
Message ID: 0
From: gokhankaya
To: gizemsungu
Message: This homework is too easy!

Step 18... Viewing sibelgulmez's profile...
-----
User ID: 2
Username: sibelgulmez
Location: Istanbul
Birth Date: 10.03.1995
sibelgulmez is following 2 account(s) and has 1 followers(s).
The followers of sibelgulmez are: gokhankaya,
sibelgulmez is following: gizemsungu, gokhankaya,
sibelgulmez has 2 posts.

Step 19... Viewing sibelgulmez's posts...
(PostID: 1) sibelgulmez: I like Java.
(PostID: 2) sibelgulmez: Java the coffee...

Step 20... Viewing sibelgulmez's posts' interactions...
-----
(PostID: 1): I like Java.
The post was liked by the following account(s): gokhankaya,
The post has 1 comment(s)...
Comment 1: 'gokhankaya' said 'me too!'
-----
(PostID: 2): Java the coffee...
The post has no likes.
The post has no comments.
```

```
Step 21... Liking sibelgulmez's posts...

Step 22... Viewing sibelgulmez's posts' interactions...
-----
(PostID: 1): I like Java.
The post was liked by the following account(s): gokhankaya, gizemsungu,
The post has 1 comment(s)...
Comment 1: 'gokhankaya' said 'me too!'
-----
(PostID: 2): Java the coffee...
The post was liked by the following account(s): gizemsungu,
The post has no comments.
```

## Test 2:

```
CSE222 - HW3

An account with username gizemsungu has been created.
An account with username sibelgulmez has been created.
An account with username gokhankaya has been created.

Step 1... Logging into another account (username: gizemsungu)...

Step 1-a... Sharing a post...

Step 1-b... Sharing another post...

Step 1-c... Logging out from account 'gizemsungu'..

Step 2... Logging into another account (username: sibelgulmez)...

Step 2-a... Viewing gizemsungu's profile...
-----
User ID: 1
Username: gizemsungu
Location: Kocaeli
Birth Date: 14.05.1993
gizemsungu is following 0 account(s) and has 2 followers(s).
The followers of gizemsungu are: sibelgulmez, gokhankaya,
gizemsungu has 2 posts.

Step 2-b... Liking Post1...

Step 2-c... Logging out from account 'sibelgulmez'..

Step 3... Logging into another account (username: gokhankaya)...

Step 3-a... Viewing gizemsungu's account...
-----
User ID: 1
Username: gizemsungu
Location: Kocaeli
Birth Date: 14.05.1993
gizemsungu is following 0 account(s) and has 2 followers(s).
The followers of gizemsungu are: sibelgulmez, gokhankaya,
gizemsungu has 2 posts.

Step 3-b... Commenting on Post2...
```

```

Step 3-c... Sending a message to gizemsungu...

Step 3-d... Logging out from account 'gokhankaya'..

Step 4...Logging into another account (username: gizemsungu)...

Step 4-a...Viewing gizemsungu's profile...
-----
User ID: 1
Username: gizemsungu
Location: Kocaeli
Birth Date: 14.05.1993
gizemsungu is following 0 account(s) and has 2 followers(s).
The followers of gizemsungu are: sibelgulmez, gokhankaya,
gizemsungu has 2 posts.

Step 4-b...Viewing inbox...
Viewing inbox...
-----
Message ID: 0
From: gokhankaya
To: gizemsungu
Message: This homework is too easy!
-----
Message ID: 1
From: gokhankaya
To: gizemsungu
Message: Hello!

```

### Test 3:

```

HCSE222 - HW3

An account with username gizemsungu has been created.
An account with username sibelgulmez has been created.
An account with username gokhankaya has been created.

Step 1...Logging into another account (username: gizemsungu)...
-----
User ID: 1
Username: gizemsungu
Location: Kocaeli
Birth Date: 14.05.1993
gizemsungu is following 1 account(s) and has 2 followers(s).
The followers of gizemsungu are: sibelgulmez, gokhankaya,
gizemsungu is following: sibelgulmez,
gizemsungu has 2 posts.
H
-----
User ID: 2
Username: sibelgulmez
Location: Istanbul
Birth Date: 10.03.1995
sibelgulmez is following 2 account(s) and has 2 followers(s).
The followers of sibelgulmez are: gokhankaya, gizemsungu,
sibelgulmez is following: gizemsungu, gokhankaya,
sibelgulmez has 2 posts.

Step 1-a...Blocking sibelgulmez...
2
Step 1-b...Logging out from account 'gizemsungu'..

Step 2...Logging into another account (username: sibelgulmez)...
6
Step 2-a...Viewing gizemsungu's profile...
WARNING: You are blocked!

Step 2-b...Trying to send message to gizemsungu
WARNING: You are blocked!

```

#### Test 4:

-----

```
CSE222 - HW3

Step 1... Creating accounts...
An account with username gizemsungu has been created.
An account with username sibelgulmez has been created.
An account with username gokhankaya has been created.
An account with username emreoytun has been created.
An account with username ali61 has been created.
An account with username simge10 has been created.
An account with username meryem has been created.
An account with username canoz has been created.
An account with username ahmet21 has been created.
An account with username veli has been created.

Step 2... Logging into an account (username: emreoytun)...

Step 3... Sharing two posts...

Step 4... Following meryem...

Step 5... Blocking can...

Step 5... Logging out from account 'emreoytun'...

Step 6... Logging into an account (username: gizemsungu)...

Step 7... Liking posts of emreoytun...

Step 8... Logging out from account 'gizemsungu'...

Step 9... Logging into an account (username: gokhankaya)...

Step 10... Liking post of emreoytun...

Step 11... Viewing emreoytun's profile...
-----
User ID: 4
Username: emreoytun
Location: Istanbul
Birth Date: 16.02.2001
emreoytun is following 1 account(s) and has 0 followers(s).
emreoytun is following: meryem,
emreoytun has 2 posts.
```

```
Step 12... Viewing emreoytun's posts' interactions...
-----
(PostID: 1): First post in new app.
The post was liked by the following account(s): gizemsungu, gokhankaya,
The post has no comments.
-----
(PostID: 2): Happy to announce i got the job!
The post was liked by the following account(s): gizemsungu,
The post has no comments.

Step 13... Logging out from account 'gokhankaya'...

Step 14... Logging into an account (username: gizemsungu)...

Step 15... Unliking post of emreoytun...

Step 16... Logging out from account 'gizemsungu'...

Step 17... Logging into an account (username: gokhankaya)...

Step 18... Unliking post of emreoytun...

Step 19... Viewing emreoytun's profile...
-----
User ID: 4
Username: emreoytun
Location: Istanbul
Birth Date: 16.02.2001
emreoytun is following 1 account(s) and has 0 followers(s).
emreoytun is following: meryem,
emreoytun has 2 posts.

Step 20.. Viewing emreoytun's posts' interactions...
-----
(PostID: 1): First post in new app.
The post has no likes.
The post has no comments.
-----
(PostID: 2): Happy to announce i got the job!
The post was liked by the following account(s): gizemsungu,
The post has no comments.

Step 21... Logging out from account 'gokhankaya'...
```



```
Step 22... Logging into an account (username: sibelgulmez)...
Step 23... Following ali...
Step 24... Sharing a post...
Step 25... Logging out from account 'sibelgulmez'...
Step 26... Logging into an account (username: emreoytun)...
Step 27... Following sibelgulmez...
Step 28... Liking the post of sibelgulmez...
Step 29... Adding a comment on a post of sibelgulmez...
Step 30... Blocking gokhankaya...
Step 31... Unblocking can...
Step 32... Unfollowing meryem...
Step 33... Logging out from account 'emreoytun'...
Step 34... Logging into an account (username: ali)...
Step 35... Following sibelgulmez...
Step 36... Adding a comment on a post of sibelgulmez...
Step 37... Logging out from account 'ali'...
Step 38... Logging into an account (username: singe)...
Step 39... Viewing sibelgulmez's profile...
-----
User ID: 2
Username: sibelgulmez
Location: Istanbul
Birth Date: 10.03.1995
sibelgulmez is following 1 account(s) and has 2 followers(s).
The followers of sibelgulmez are: emreoytun, ali61,
sibelgulmez is following: ali61,
sibelgulmez has 1 posts.
```

```
Step 40... Viewing sibelgulmez's posts' interactions...
-----
(PostID: 3): GTU is the best!
The post was liked by the following account(s): emreoytun,
The post has 2 comment(s)...
Comment 1: 'emreoytun' said 'It's hard though'
Comment 2: 'ali61' said 'I think so...'

Step 41... Logging out from account 'simge'...

Step 42... Logging into an account (username: sibelgulmez)...

Step 43... Blocking ali...

Step 44... Logging out from account 'sibelgulmez'...

Step 45... Logging into an account (username: ali)...

Step 46... Viewing sibelgulmez's profile...
WARNING: You are blocked!
Step 47... Viewing sibelgulmez's posts' interactions...
WARNING: You are blocked!

Step 48... Liking posts of emreoytun...

Step 49... Logging out from account 'ali'...

Step 50... Logging into an account (username: sibelgulmez)...

Step 51... Unblocking ali...

Step 52... Logging out from account 'sibelgulmez'...

Step 53... Logging into an account (username: ali)...

Step 54... Viewing sibelgulmez's profile...
-----
User ID: 2
Username: sibelgulmez
Location: Istanbul
Birth Date: 10.03.1995
sibelgulmez is following 0 account(s) and has 1 followers(s).
The followers of sibelgulmez are: emreoytun,
sibelgulmez has 1 posts.
```

```
Step 55... Viewing sibelgulmez's posts' interactions...
-----
(PostID: 3): GTU is the best!
The post was liked by the following account(s): emreoytun,
The post has 1 comment(s)...
Comment 1: 'emreoytun' said 'It's hard though'

Step 56... Logging out from account 'ali'...

Step 57... Logging into an account (username: meryem)...

Step 58... Sharing a post...

Step 59... Logging out from account 'meryem'...

Step 60... Logging into an account (username: can)...

Step 61... Adding a comment on a post of meryem...

Step 62... Logging out from account 'can'...

Step 63... Logging into an account (username: ahmet)...

Step 64... Viewing meryem's profile...
-----
User ID: 7
Username: meryem
Location: Sivas
Birth Date: 03.07.2000
meryem is following 0 account(s) and has 0 followers(s).
meryem has 1 posts.

Step 65... Viewing meryem's posts' interactions...
-----
(PostID: 4): New post in new site!
The post has no likes.
The post has 1 comment(s)...
Comment 1: 'canoz' said 'I just found this site'

Step 66... Logging out from account 'ahmet'...

Step 67... Logging into an account (username: can)...

Step 68... Uncommenting a comment on a post of meryem...
```

```
Step 69... Logging out from account 'can'...

Step 70... Logging into an account (username: ahmet)...

Step 71... Viewing meryem's profile...
-----
User ID: 7
Username: meryem
Location: Sivas
Birth Date: 03.07.2000
meryem is following 0 account(s) and has 0 followers(s).
meryem has 1 posts.

Step 72... Viewing meryem's posts' interactions...
-----
(PostID: 4): New post in new site!
The post has no likes.
The post has no comments.

Step 73... Logging out from account 'ahmet'...

Step 74... Logging into an account (username: emreoytun)...

Step 75... Following veli...

Step 76... Viewing veli's profile...
-----
User ID: 10
Username: veli
Location: Antalya
Birth Date: 10.10.1990
veli is following 0 account(s) and has 1 followers(s).
The followers of veli are: emreoytun,
veli has 0 posts.

Step 77... Logging out from account 'emreoytun'...

Step 78... Logging into an account (username: veli)...
```

```
Step 79... Viewing emreoytun's profile...
-----
User ID: 4
Username: emreoytun
Location: Istanbul
Birth Date: 16.02.2001
emreoytun is following 2 account(s) and has 0 followers(s).
emreoytun is following: sibelgulmez, veli,
emreoytun has 2 posts.

Step 80... Following emreoytun...

Step 81... Logging out from account 'veli'...

Step 82... Logging into an account (username: emreoytun)...

Step 83... Unfollowing veli...

Step 84... Logging out from account 'emreoytun'...

Step 85... Logging into an account (username: simge)...

Step 86... Viewing emreoytun's profile...
-----
User ID: 4
Username: emreoytun
Location: Istanbul
Birth Date: 16.02.2001
emreoytun is following 1 account(s) and has 1 followers(s).
The followers of emreoytun are: veli,
emreoytun is following: sibelgulmez,
emreoytun has 2 posts.

Step 87... Viewing veli's profile...
-----
User ID: 10
Username: veli
Location: Antalya
Birth Date: 10.10.1990
veli is following 1 account(s) and has 0 followers(s).
veli is following: emreoytun,
veli has 0 posts.
```

## Screenshots of Version 4:

---

### Test 1:

---

CSE222 - HW3

Step 1... Creating accounts...

An account with username gizemsungu has been created.

An account with username sibelgulmez has been created.

An account with username gokhankaya has been created.

Step 2... Logging into an account (username: sibelgulmez)...

Step 3... Sharing two posts...

Step 4... Following gizemsungu and gokhankaya...

Step 5... Logging out from account 'sibelgulmez'...

Step 6... Logging into another account (username: gokhankaya)...

Step 7... Viewing sibelgulmez's profile...

-----

User ID: 2

Username: sibelgulmez

Location: Istanbul

Birth Date: 10.03.1995

sibelgulmez is following 2 account(s) and has 0 followers(s).

sibelgulmez is following: gizemsungu, gokhankaya,

sibelgulmez has 2 posts.

Step 8... Viewing sibelgulmez's posts...

(PostID: 1) sibelgulmez: I like Java.

(PostID: 2) sibelgulmez: Java the coffee...

Step 9... Liking a post of sibelgulmez...

Step 10... Adding a comment on a post of sibelgulmez...

Step 11... Following sibelgulmez and gizemsungu...

Step 12... Sending a message to gizemsungu...

Step 13... Logging out from account 'gokhankaya'..

Step 14... Logging into another account (username: gizemsungu)...

```
Step 15... Checking outbox...
There is/are 0 message(s) in the outbox.

Step 16... Checking inbox...
There is/are 1 message(s) in the inbox.

Step 17... Viewing inbox...
Viewing inbox...
-----
Message ID: 0
From: gokhankaya
To: gizemsungu
Message: This homework is too easy!

Step 18... Viewing sibelgulmez's profile...
-----
User ID: 2
Username: sibelgulmez
Location: Istanbul
Birth Date: 10.03.1995
sibelgulmez is following 2 account(s) and has 1 followers(s).
The followers of sibelgulmez are: gokhankaya,
sibelgulmez is following: gizemsungu, gokhankaya,
sibelgulmez has 2 posts.

Step 19... Viewing sibelgulmez's posts...
(PostID: 1) sibelgulmez: I like Java.
(PostID: 2) sibelgulmez: Java the coffee...

Step 20... Viewing sibelgulmez's posts' interactions...
-----
(PostID: 1): I like Java.
The post was liked by the following account(s): gokhankaya,
The post has 1 comment(s)...
Comment 1: 'gokhankaya' said 'me too!'
-----
(PostID: 2): Java the coffee...
The post has no likes.
The post has no comments.
```

```
Step 21... Liking sibelgulmez's posts...

Step 22... Viewing sibelgulmez's posts' interactions...
-----
(PostID: 1): I like Java.
The post was liked by the following account(s): gokhankaya, gizemsungu,
The post has 1 comment(s)...
Comment 1: 'gokhankaya' said 'me too!'
-----
(PostID: 2): Java the coffee...
The post was liked by the following account(s): gizemsungu,
The post has no comments.
```

## Test 2:

---

```
CSE222 - HW3

An account with username gizemsungu has been created.
An account with username sibelgulmez has been created.
An account with username gokhankaya has been created.

Step 1... Logging into another account (username: gizemsungu)...

Step 1-a... Sharing a post...

Step 1-b... Sharing another post...

Step 1-c... Logging out from account 'gizemsungu'..

Step 2... Logging into another account (username: sibelgulmez)...

Step 2-a... Viewing gizemsungu's profile...
-----
User ID: 1
Username: gizemsungu
Location: Kocaeli
Birth Date: 14.05.1993
gizemsungu is following 0 account(s) and has 2 followers(s).
The followers of gizemsungu are: sibelgulmez, gokhankaya,
gizemsungu has 2 posts.

Step 2-b... Liking Post1...

Step 2-c... Logging out from account 'sibelgulmez'..

Step 3... Logging into another account (username: gokhankaya)...

Step 3-a... Viewing gizemsungu's account...
-----
User ID: 1
Username: gizemsungu
Location: Kocaeli
Birth Date: 14.05.1993
gizemsungu is following 0 account(s) and has 2 followers(s).
The followers of gizemsungu are: sibelgulmez, gokhankaya,
gizemsungu has 2 posts.

Step 3-b... Commenting on Post2...
```



```

Step 3-c... Sending a message to gizemsungu...

Step 3-d... Logging out from account 'gokhankaya'..

Step 4...Logging into another account (username: gizemsungu)...

Step 4-a...Viewing gizemsungu's profile...
-----
User ID: 1
Username: gizemsungu
Location: Kocaeli
Birth Date: 14.05.1993
gizemsungu is following 0 account(s) and has 2 followers(s).
The followers of gizemsungu are: sibelgulmez, gokhankaya,
gizemsungu has 2 posts.

Step 4-b...Viewing inbox...
Viewing inbox...
-----
Message ID: 0
From: gokhankaya
To: gizemsungu
Message: This homework is too easy!
-----
Message ID: 1
From: gokhankaya
To: gizemsungu
Message: Hello!

```

### Test 3:

```

HCSE222 - HW3

An account with username gizemsungu has been created.
An account with username sibelgulmez has been created.
An account with username gokhankaya has been created.

Step 1...Logging into another account (username: gizemsungu)...
-----
User ID: 1
Username: gizemsungu
Location: Kocaeli
Birth Date: 14.05.1993
gizemsungu is following 1 account(s) and has 2 followers(s).
The followers of gizemsungu are: sibelgulmez, gokhankaya,
gizemsungu is following: sibelgulmez,
gizemsungu has 2 posts.
-----
User ID: 2
Username: sibelgulmez
Location: Istanbul
Birth Date: 10.03.1995
sibelgulmez is following 2 account(s) and has 2 followers(s).
The followers of sibelgulmez are: gokhankaya, gizemsungu,
sibelgulmez is following: gizemsungu, gokhankaya,
sibelgulmez has 2 posts.

Step 1-a...Blocking sibelgulmez...

Step 1-b...Logging out from account 'gizemsungu'..

Step 2...Logging into another account (username: sibelgulmez)...

Step 2-a...Viewing gizemsungu's profile...
WARNING: You are blocked!

Step 2-b...Trying to send message to gizemsungu
WARNING: You are blocked!

```

#### Test 4:

-----

CSE222 - HW3

Step 1... Creating accounts...

An account with username gizemsungu has been created.  
An account with username sibelgulmez has been created.  
An account with username gokhankaya has been created.  
An account with username emreoytun has been created.  
An account with username ali61 has been created.  
An account with username simge10 has been created.  
An account with username meryem has been created.  
An account with username canoz has been created.  
An account with username ahmet21 has been created.  
An account with username veli has been created.

Step 2... Logging into an account (username: emreoytun)...

Step 3... Sharing two posts...

Step 4... Following meryem...

Step 5... Blocking can...

Step 5... Logging out from account 'emreoytun'...

Step 6... Logging into an account (username: gizemsungu)...

Step 7... Liking posts of emreoytun...

Step 8... Logging out from account 'gizemsungu'...

Step 9... Logging into an account (username: gokhankaya)...

Step 10... Liking post of emreoytun...

Step 11... Viewing emreoytun's profile...

-----

User ID: 4

Username: emreoytun

Location: Istanbul

Birth Date: 16.02.2001

emreoytun is following 1 account(s) and has 0 followers(s).

emreoytun is following: meryem,

emreoytun has 2 posts.

```
Step 12... Viewing emreoytun's posts' interactions...
-----
(PostID: 1): First post in new app.
The post was liked by the following account(s): gizemsungu, gokhankaya,
The post has no comments.
-----
(PostID: 2): Happy to announce i got the job!
The post was liked by the following account(s): gizemsungu,
The post has no comments.

Step 13... Logging out from account 'gokhankaya'...

Step 14... Logging into an account (username: gizemsungu)...

Step 15... Unliking post of emreoytun...

Step 16... Logging out from account 'gizemsungu'...

Step 17... Logging into an account (username: gokhankaya)...

Step 18... Unliking post of emreoytun...

Step 19... Viewing emreoytun's profile...
-----
User ID: 4
Username: emreoytun
Location: Istanbul
Birth Date: 16.02.2001
emreoytun is following 1 account(s) and has 0 followers(s).
emreoytun is following: meryem,
emreoytun has 2 posts.

Step 20.. Viewing emreoytun's posts' interactions...
-----
(PostID: 1): First post in new app.
The post has no likes.
The post has no comments.
-----
(PostID: 2): Happy to announce i got the job!
The post was liked by the following account(s): gizemsungu,
The post has no comments.

Step 21... Logging out from account 'gokhankaya'...
```

Step 22... Logging into an account (username: sibelgulmez)...

Step 23... Following ali...

Step 24... Sharing a post...

Step 25... Logging out from account 'sibelgulmez'...

Step 26... Logging into an account (username: emreoytun)...

Step 27... Following sibelgulmez...

Step 28... Liking the post of sibelgulmez...

Step 29... Adding a comment on a post of sibelgulmez...

Step 30... Blocking gokhankaya...

Step 31... Unblocking can...

Step 32... Unfollowing meryem...

Step 33... Logging out from account 'emreoytun'...

Step 34... Logging into an account (username: ali)...

Step 35... Following sibelgulmez...

Step 36... Adding a comment on a post of sibelgulmez...

Step 37... Logging out from account 'ali'...

Step 38... Logging into an account (username: simge)...

Step 39... Viewing sibelgulmez's profile...

-----

User ID: 2

Username: sibelgulmez

Location: Istanbul

Birth Date: 10.03.1995

sibelgulmez is following 1 account(s) and has 2 followers(s).

The followers of sibelgulmez are: emreoytun, ali61,

sibelgulmez is following: ali61,

sibelgulmez has 1 posts.

```
Step 40... Viewing sibelgulmez's posts' interactions...
-----
(PostID: 3): GTU is the best!
The post was liked by the following account(s): emreoytun,
The post has 2 comment(s)...
Comment 1: 'emreoytun' said 'It's hard though'
Comment 2: 'ali61' said 'I think so...'

Step 41... Logging out from account 'simge'...

Step 42... Logging into an account (username: sibelgulmez)...

Step 43... Blocking ali...

Step 44... Logging out from account 'sibelgulmez'...

Step 45... Logging into an account (username: ali)...

Step 46... Viewing sibelgulmez's profile...
WARNING: You are blocked!
Step 47... Viewing sibelgulmez's posts' interactions...
WARNING: You are blocked!

Step 48... Liking posts of emreoytun...

Step 49... Logging out from account 'ali'...

Step 50... Logging into an account (username: sibelgulmez)...

Step 51... Unblocking ali...

Step 52... Logging out from account 'sibelgulmez'...

Step 53... Logging into an account (username: ali)...

Step 54... Viewing sibelgulmez's profile...
-----
User ID: 2
Username: sibelgulmez
Location: Istanbul
Birth Date: 10.03.1995
sibelgulmez is following 0 account(s) and has 1 followers(s).
The followers of sibelgulmez are: emreoytun,
sibelgulmez has 1 posts.
```

```
Step 55... Viewing sibelgulmez's posts' interactions...
-----
(PostID: 3): GTU is the best!
The post was liked by the following account(s): emreoytun,
The post has 1 comment(s)...
Comment 1: 'emreoytun' said 'It's hard though'

Step 56... Logging out from account 'ali'...

Step 57... Logging into an account (username: meryem)...

Step 58... Sharing a post...

Step 59... Logging out from account 'meryem'...

Step 60... Logging into an account (username: can)...

Step 61... Adding a comment on a post of meryem...

Step 62... Logging out from account 'can'...

Step 63... Logging into an account (username: ahmet)...

Step 64... Viewing meryem's profile...
-----
User ID: 7
Username: meryem
Location: Sivas
Birth Date: 03.07.2000
meryem is following 0 account(s) and has 0 followers(s).
meryem has 1 posts.

Step 65... Viewing meryem's posts' interactions...
-----
(PostID: 4): New post in new site!
The post has no likes.
The post has 1 comment(s)...
Comment 1: 'canoz' said 'I just found this site'

Step 66... Logging out from account 'ahmet'...

Step 67... Logging into an account (username: can)...

Step 68... Uncommenting a comment on a post of meryem...
```

```
Step 69... Logging out from account 'can'...

Step 70... Logging into an account (username: ahmet)...

Step 71... Viewing meryem's profile...
-----
User ID: 7
Username: meryem
Location: Sivas
Birth Date: 03.07.2000
meryem is following 0 account(s) and has 0 followers(s).
meryem has 1 posts.

Step 72... Viewing meryem's posts' interactions...
-----
(PostID: 4): New post in new site!
The post has no likes.
The post has no comments.

Step 73... Logging out from account 'ahmet'...

Step 74... Logging into an account (username: emreoytun)...

Step 75... Following veli...

Step 76... Viewing veli's profile...
-----
User ID: 10
Username: veli
Location: Antalya
Birth Date: 10.10.1990
veli is following 0 account(s) and has 1 followers(s).
The followers of veli are: emreoytun,
veli has 0 posts.

Step 77... Logging out from account 'emreoytun'...

Step 78... Logging into an account (username: veli)...
```

```
Step 79... Viewing emreoytun's profile...
-----
User ID: 4
Username: emreoytun
Location: Istanbul
Birth Date: 16.02.2001
emreoytun is following 2 account(s) and has 0 followers(s).
emreoytun is following: sibelgulmez, veli,
emreoytun has 2 posts.

Step 80... Following emreoytun...

Step 81... Logging out from account 'veli'...

Step 82... Logging into an account (username: emreoytun)...

Step 83... Unfollowing veli...

Step 84... Logging out from account 'emreoytun'...

Step 85... Logging into an account (username: simge)...

Step 86... Viewing emreoytun's profile...
-----
User ID: 4
Username: emreoytun
Location: Istanbul
Birth Date: 16.02.2001
emreoytun is following 1 account(s) and has 1 followers(s).
The followers of emreoytun are: veli,
emreoytun is following: sibelgulmez,
emreoytun has 2 posts.

Step 87... Viewing veli's profile...
-----
User ID: 10
Username: veli
Location: Antalya
Birth Date: 10.10.1990
veli is following 1 account(s) and has 0 followers(s).
veli is following: emreoytun,
veli has 0 posts.
```

```
Step 88... Logging out from account 'simge'...

Step 89... Logging into an account (username: emreoytun)...

Step 90... Showing history of emreoytun...
You shared a post id: 1
You shared a post id: 2
You followed meryem
You blocked canoz
You followed sibelgulmez
You liked sibelgulmez's post id: 3
You commented sibelgulmez's post id: 3
You blocked gokhankaya
You unblocked canoz
You unfollowed meryem
You followed veli
You viewed veli's account
You unfollowed veli
```