GTU Department of Computer Engineering

CSE 222/505 – Spring 2023

Homework 1 Report

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1. System Requirements

First, this is a social media platform. So, there should be users to use it.

Creating first user

```
Account gizemsungu = new Account(ID:1,username:"gizemsungu",birthdate:"13.01.1993",location:"Istanbul");
```
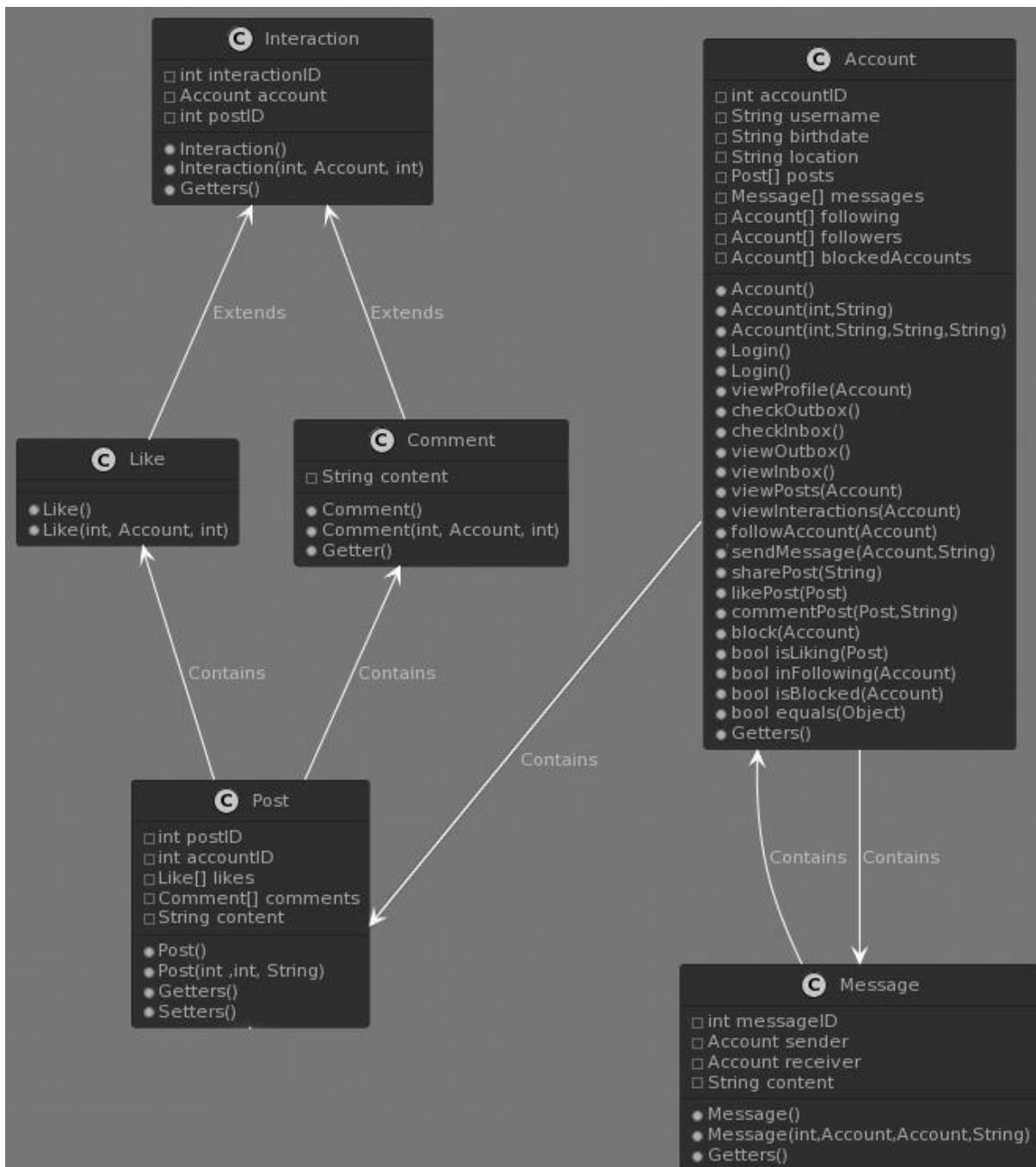
Creating second user

```
Account sibelgulmez = new Account(ID:2,username:"sibelgulmez",birthdate:"10.03.1995",location:"Istanbul");
```
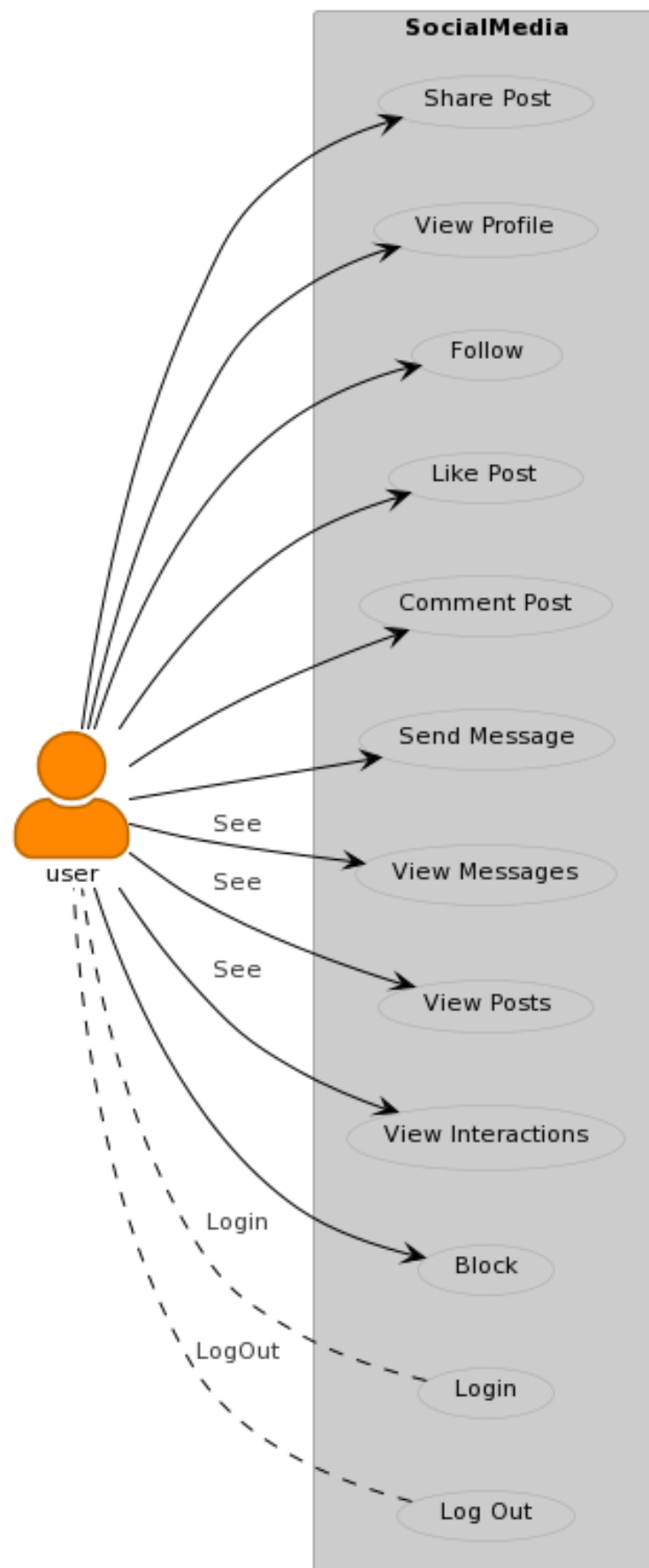
Creating third user

```
Account gokhankaya = new Account(ID:3,username:"gokhankaya",birthdate:"13.01.1993",location:"Istanbul");
```

2. UML and Usecase Diagrams
a) UML Diagram

Interaction
- int interactionID
- Account account
- int postID
- Interaction()
- Interaction(int, Account, int)
- Getters()

Account
- int accountID
- String username
- String birthdate
- String location
- Post[] posts
- Message[] messages
- Account[] following
- Account[] followers
- Account[] blockedAccounts
- Account()
- Account(int,String)
- Account(int,String,String,String)
- Login()
- Login()
- viewProfile(Account)
- checkOutbox()
- checkInbox()
- viewOutbox()
- viewInbox()
- viewPosts(Account)
- viewInteractions(Account)
- followAccount(Account)
- sendMessage(Account,String)
- sharePost(String)
- likePost(Post)
- commentPost(Post,String)
- block(Account)
- bool isLiking(Post)
- bool inFollowing(Account)
- bool isBlocked(Account)
- bool equals(Object)
- Getters()

Like
- Like()
- Like(int, Account, int)

Comment
- String content
- Comment()
- Comment(int, Account, int)
- Getter()

Post
- int postID
- int accountID
- Like[] likes
- Comment[] comments
- String content
- Post()
- Post(int ,int, String)
- Getters()
- Setters()

Message
- int messageID
- Account sender
- Account receiver
- String content
- Message()
- Message(int,Account,Account,String)
- Getters()

Extends · Extends · Contains · Contains · Contains · Contains · Contains

b) Usecase Diagram

3. Problem Solution Approach

First of all, I started to draw an UML diagram I added previus pages from ER diagram in homework pdf. After drawing finished I started to implement classes. I started to implement from the easy classes like Interaction and its extend classes Like and Comment class.

There was problem when I implementing classes is uniqe id for every object. I initially solved this problem by using static variables, but later I found out that static variables don't really follow OOP rules and I gave up on the idea. After some thought and experimentation, I edited the solution so that each time a new object is created, it checks the previous ones. It doesn't work 100% correctly, but I think it's enough for homework.

4. Test Cases

Introducing how program works
There is a three way to create an account
- Create user method 1

```
Account user = new Account();
```

- Create user method 2

```
Account user = new Account(ID:4,username:"username");
```

- Create user method 3

```
Account user = new Account(ID:4,username:"username",birthdate:"birthdate",location:"location");
```

- Login as user

```
user.Login();
```

- Log out user (User must be logged in)

```
user.LogOut();
```

- View another users profile (User must be logged in and following not necessary)

```
user.viewProfile(anotheruser);
```

- Follow another user(User must be logged in)

```
user.followAccount(anotheruser);
```

- Send message to another user (Login and Following necessary)

```
user.sendMessage(anotheruser, content:"Example Message");
```

- Share post(User must be logged in)

```
user.sharePost(content:"Example Post");
```

- Like post (Login necessary)

```
anotheruser.likePost(user.getPost(id:1));
```

- Comment post (Login necessary)

```
anotheruser.commentPost(user.getPost(id:1), content:"Example comment");
```

- View incoming messages (Login necessary)

```
user.viewInbox();
```

- View outgoing messages (Login necessary)

```
user.viewOutbox();
```

- View another users posts (Login necessary)

```
user.viewPosts(anotheruser);
```

- View another users post with interactions (Login necessary)

```
user.viewInteractions(anotheruser);
```

- Block another user (Login necessary)

```
user.block(anotheruser);
```

a) Scenario 1
- Creating user gizemsungu

```
Account gizemsungu = new Account(ID:1,username:"gizemsungu",birthdate:"13.01.1993",location:"Istanbul");
```

- Creating user sibelgulmez

```
Account sibelgulmez = new Account(ID:2,username:"sibelgulmez",birthdate:"10.03.1995",location:"Istanbul");
```

- Creating user gokhankaya

```
Account gokhankaya = new Account(ID:3,username:"gokhankaya",birthdate:"13.01.1993",location:"Istanbul");
```

- Login as sibelgulmez

```
sibelgulmez.Login();
```

- sibelgulmez shares two post

```
sibelgulmez.sharePost(content:"I like Java.");
sibelgulmez.sharePost(content:"Java the coffee...");
```

- sibelgulmez starts to follow gizemsungu and gokhankaya

```
sibelgulmez.followAccount(gizemsungu);
sibelgulmez.followAccount(gokhankaya);
```

- sibelgulmez logout

```
sibelgulmez.LogOut();
```

- Login as gokhankaya

```
gokhankaya.Login();
```

- gokhankaya views sibelgulmez's profile

```
gokhankaya.viewProfile(sibelgulmez);
```

- gokhankaya views sibelgulmez's posts

```
gokhankaya.viewPosts(sibelgulmez);
```

- gokhankaya likes and comments sibelgulmez's first post

```
gokhankaya.likePost(sibelgulmez.getPost(id:1));
gokhankaya.commentPost(sibelgulmez.getPost(id:1), content:"Me too");
```

- gokhankaya starts to follow sibelgulmez and gizemsungu

```
gokhankaya.followAccount(sibelgulmez);
gokhankaya.followAccount(gizemsungu);
```

- gokhankaya sends a message to gizemsungu

```
gokhankaya.sendMessage(gizemsungu,content:"This homework is too easy !");
```

- gokhankaya logout

```
gokhankaya.LogOut();
```

- Login as gizemsungu

```
gizemsungu.Login();
```

- gizemsungu checks her messageboxes

```
gizemsungu.checkOutbox();
gizemsungu.checkInbox();
```

- gizemsungu views her inbox

```
gizemsungu.viewInbox();
```

- gizemsungu views sibelgulmez's profile

```
gizemsungu.viewProfile(sibelgulmez);
```

- gizemsungu views sibelgulmez's posts

```
gizemsungu.viewPosts(sibelgulmez);
```

- gizemsungu views sibelgulmez's post interactions

```
gizemsungu.viewInteractions(sibelgulmez);
```

- gizemsungu likes sibelgulmez's all posts

```
gizemsungu.likePost(sibelgulmez.getPost(id:1));
gizemsungu.likePost(sibelgulmez.getPost(id:2));
```

- gizemsungu views sibelgulmez's post interactions

```
gizemsungu.viewInteractions(sibelgulmez);
```

- gizemsungu logout

```
gizemsungu.LogOut();
```

b) Scenario 2

After first scenario completed scenario 2 begun

- Login as gizemsungu

```
gizemsungu.Login();
```

- gizemsungu shares two post

```
gizemsungu.sharePost(content:"This is Post1");
gizemsungu.sharePost(content:"This is Post2");
```

- gizemsungu logout

```
gizemsungu.LogOut();
```

- Login as sibelgulmez

```
sibelgulmez.Login();
```

- sibelgulmez gizemsungu's profile

```
sibelgulmez.viewProfile(gizemsungu);
```

- sibelgulmez likes gizemsungu's first post

```
sibelgulmez.likePost(gizemsungu.getPost(id:1));
```

- sibelgulmez logout

```
sibelgulmez.LogOut();
```

- Login as gokhankaya

```
gokhankaya.Login();
```

- gokhankaya views gizemsungu's profile

```
gokhankaya.viewProfile(gizemsungu);
```

- gokhankaya comments gizemsungu's second post

```
gokhankaya.commentPost(gizemsungu.getPost(id:2), content:"Nice!");
```

- gokhankaya sends a message to gizemsungu

```
gokhankaya.sendMessage(gizemsungu, content:"Hello!");
```

- gokhakya logout

```
gokhankaya.LogOut();
```

- Login as gizemsungu

```
gizemsungu.Login();
```

- gizemsungu views her own profile

```
gizemsungu.viewProfile(gizemsungu);
```

- gizemsungu checks his inbox

```
gizemsungu.checkInbox();
```

- gizemsungu views his inbox

```
gizemsungu.viewInbox();
```

- gizemsungu logout

```
gizemsungu.LogOut();
```

c) Scenario 3
After Scenario 1 and Scenario 2 completed Scenario 3 begun

- Login as gizemsungu

```
gizemsungu.Login();
```

- gizemsungu blocks sibelgulmez

```
gizemsungu.block(sibelgulmez);
```

- gizemsungu logout

```
gizemsungu.LogOut();
```

- Login as sibelgulmez

```
sibelgulmez.Login();
```

- sibelgulmez tries to view gizemsungu's profile

```
sibelgulmez.viewProfile(gizemsungu);
```

- sibelgulmez tries to send message to gizemsungu

```
sibelgulmez.sendMessage(gizemsungu,content:"Am I blocked ?");
```

- sibelgulmez logout

```
sibelgulmez.LogOut();
```

5. Running and Results

a) Scenario 1

```
-------------------------Scenario 1----------------------------
An account with usernamegizemsunguhas been created.
An account with usernamesibelgulmezhas been created.
An account with usernamegokhankayahas been created.

Logging into an account (username: sibelgulmez)

Sending post

Sending post

Following gizemsungu

Following gokhankaya

Logging out from account 'sibelgulmez'...

Logging into an account (username: gokhankaya)

Viewing sibelgulmez's profile...
------------------------
User ID: 2
Username: sibelgulmez
Birthdate: 10.03.1995
Location: Istanbul
sibelgulmez is following 2 account(s) and has 0 follower(s).
The followers of sibelgulmez is:
sibelgulmez is following: gizemsungu,gokhankaya,
sibelgulmez has 2 post(s).

Viewing sibelgulmez 's posts...
(Post ID: 1): I like Java.
(Post ID: 2): Java the coffee...

Liking post with id 1

Commenting post with id 1

Following sibelgulmez

Following gizemsungu

Sending a message to 'gizemsungu... '

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

```
Logging into an account (username: gizemsungu)

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

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

Viewing gizemsungu 's inbox...
Message ID: 1
From: gokhankaya
To: gizemsungu
Message: This homework is too easy !
------------------------------

Viewing sibelgulmez's profile...
---------------------
User ID: 2
Username: sibelgulmez
Birthdate: 10.03.1995
Location: Istanbul
sibelgulmez is following 2 account(s) and has 1 follower(s).
The followers of sibelgulmez is: gokhankaya,
sibelgulmez is following: gizemsungu,gokhankaya,
sibelgulmez has 2 post(s).

Viewing sibelgulmez 's posts...
(Post ID: 1): I like Java.
(Post ID: 2): Java the coffee...

Viewing sibelgulmez 's post's interactions...
------------------------------
(Post ID: 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'
------------------------------
(Post ID: 2): Java the coffee...
The post was liked by the following account(s):
The post has 0 comment(s)...
------------------------------

Liking post with id 1

Liking post with id 2
```

```
Viewing sibelgulmez 's post's interactions...
-------------------------------
(Post ID: 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'
-------------------------------
(Post ID: 2): Java the coffee...
The post was liked by the following account(s): gizemsungu,
The post has 0 comment(s)...
-------------------------------
```

b) Scenario 2

```
-------------------------Scenario 2---------------------------

Logging into an account (username: gizemsungu)

Sending post

Sending post

Logging out from account 'gizemsungu'...

Logging into an account (username: sibelgulmez)

Viewing gizemsungu's profile...
----------------------
User ID: 1
Username: gizemsungu
Birthdate: 13.01.1993
Location: Istanbul
gizemsungu is following 0 account(s) and has 2 follower(s).
The followers of gizemsungu is: sibelgulmez,gokhankaya,
gizemsungu is following:
gizemsungu has 2 post(s).

Liking post with id 1

Logging out from account 'sibelgulmez'...

Logging into an account (username: gokhankaya)

Viewing gizemsungu's profile...
----------------------
User ID: 1
Username: gizemsungu
Birthdate: 13.01.1993
Location: Istanbul
gizemsungu is following 0 account(s) and has 2 follower(s).
The followers of gizemsungu is: sibelgulmez,gokhankaya,
gizemsungu is following:
gizemsungu has 2 post(s).

Commenting post with id 2

Sending a message to 'gizemsungu... '

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

```
Logging into an account (username: gizemsungu)

Viewing gizemsungu's profile...
-----------------------
User ID: 1
Username: gizemsungu
Birthdate: 13.01.1993
Location: Istanbul
gizemsungu is following 0 account(s) and has 2 follower(s).
The followers of gizemsungu is: sibelgulmez,gokhankaya,
gizemsungu is following:
gizemsungu has 2 post(s).

Checking inbox...
There is/are 2 message(s) in the inbox.

Viewing gizemsungu 's inbox...
Message ID: 1
From: gokhankaya
To: gizemsungu
Message: This homework is too easy !
--------------------------------
Message ID: 2
From: gokhankaya
To: gizemsungu
Message: Hello!
--------------------------------

Logging out from account 'gizemsungu'...
```

c) Scenario 3

```
---------------------------Scenario 3----------------------------

Logging into an account (username: gizemsungu)
Blocking sibelgulmez

Logging out from account 'gizemsungu'...

Logging into an account (username: sibelgulmez)
You can't view gizemsungu's profile. You are blocked by this user.

You can't send a message to this user because you are blocked by this account.

Logging out from account 'sibelgulmez'...
```