

Console-based Social Network Application

Phase I – Project Design (Deadline: 26th April)

You need to submit

- 1- UML class diagram, showing **all the classes**, their **attributes** and **methods** (identified attributes and functions may change in future during development but you must correctly state all major methods of the class as per your understanding , excluding getters, setters and constructors) and their **relationship** with other classes.
- 2- Use a software tool like staruml or drawio, etc for the uml class diagram. Do not submit the diagram on paper.

Phase II – Development (Deadline: 10th May)

Project Description

We need to develop a console based social network application.

Each **User** in the application has a unique ID and name. He may have other users in his friend list.. He has a list of pages which he has liked.

Each **Page** has a unique ID, an owner (user), title, list of posts it has shared (page's timeline) and total number of people who have liked it.

Each **Post** has a unique ID, description/text, no of likes, list of people who have liked it and shared date for example; a post is shared at 25th October 2017. A post can have 10 comments at max.

Activity may be a part of the Post, having a type and a value against this type. See table below for details:

Type		Value
1	feeling	Happy/sad/excited etc.
2	thinking about	life/future/meaning of life etc.
3	Making	Money/art/memories etc.
4	celebrating	A birthday/Halloween/success etc.

A **Memory** is a Post having pointer to original post.

A **comment** is posted by a specific user or a page on a single post. All the Users, Pages and Posts in the application are **Objects** having IDs.

Required Functionality:

1- Set Current User

- a. Ask user about his ID and set him as current user of application. Now everything that we see in the system will be view of this user.

2- View Home of Current User

- a. Display posts of all friends shared in last 24 hours.
- b. Display posts of all his liked pages shared in last 24 hours.

3- Like a post

- a. Ask user about ID of post and like it. A post can be liked by 10 users at max.

4- View the list of People who liked a post

- a. Take Post ID from user and display list of people who have liked it

5- Comment on a Post

- a. Take post ID and comment from the user and add this comment in the post

6- View a Post

- a. Take post ID and Display the post with its Comments

7- Share a Memory

- a. Take post ID, text from user and share it

8- View User's Timeline

- a. Display User Name
- b. Display user's posts in his timeline

9- View Friend List

- a. Take ID of a user and display his friends list

10- View Page

- a. Take Page ID and display all its posts

Execution Flow Control: Your application must have a defined entry point. You may create a manager class or an App class to serve as the master or driver class of the application. Make a function `SocialNetworkApp::Run()` in main. Crucially, the application's functionality should not rely on code directly implemented within the `main()` function. Delegate all responsibilities to the appropriate classes (separation of concerns).

Important Instructions

- You are not allowed to use global variables and functions
- Use best OOP practices studied so far
- Memory deallocation carries significant weightage
- All the arrays should be dynamically allocated.

- Wherever you need an array of objects, keep it as a double pointer. If a page has no posts or if a user has no friends and no liked pages then these double pointers should be null.
- You may use txt files to store information about created users and pages of the application (you need to only store the id and title. Other information will be created and stored only during runtime).
- The project must have proper folder structuring. Do not submit a single .cpp file.

Phase II includes output highlighted in Blue. U7 is just a sample user, your program should properly run on any user.

```
Command:      Set current System Date 15 11 2017
System Date:  15/11/2017
```

```
Command:      Set current user "u7"
Abdullah Nadeem successfully set as Current User
```

```
Command:      View Friend List
```

```
Abdullah Nadeem – Friend List
```

```
u3 - Waheed Khan
u11 – Ahsan Ali
u12 – Ali Ahmed
```

```
Comand:      View Liked Pages
```

```
Abdullah Nadeem – Liked Pages
```

```
P1 – Food Fusion
P2 – Al Jazeera English
P5 – Rumi Quotes
P9 – BBC News
```

Command: View Home

Abdullah Nadeem – Home Page

//This is displaying posts of 15th and 14th November (15th Nov is currentDate)

--- Waheed Khan is feeling excited

“OOP Project Started Yayy...”

Amna Akram wrote: “Best of Luck”

Abdullah Nadeem wrote: “Interesting”

--- Ahsan Ali shared “Waiting for Weekend”

Saad Ali wrote: “Any plans for Get Together?”

Abdullah Nadeem wrote: “Yes BBQ”

Nimra Batool wrote: “Lunch Buffet please”

--- Ali Ahmed shared “Waiting for Result”

--- Food Fusion is making Kashmiri Chai (Pink Tea).

“Try this at home...”

Food Fusion wrote: “Followers please try this recipe and give your feedback”

Amna Akram wrote: “Yummy”

Ahsan Ali wrote: “One pink tea for me”

--- Al Jazeera English shared “Oil drilling in Alaska's indigenous communities is on the table again.”

--- Rumi Quotes shared “Be free of possessing things - Rumi”

Ali Ahmed wrote: “Rumi is great”

//Notice the format of printing Activity and Simple Posts

Command: View TimeLine

Abdullah Nadeem –Time Line

--- Abdullah Nadeem is Celebrating a birthday

“Happy Birthday to my dear Mom” ... (14/11/2017)

Waheed Khan wrote: “Happy Birthday Aunty”

--- Abdullah Nadeem is Celebrating a birthday

“Happy Birthday to my dear Father” ... (14/10/2017)

Ahsan Ali wrote: “Happy Birthday Uncle”

--- Abdullah Nadeem is Celebrating Success

“Got D in toughest subject... Thanks God I am Pass finally...” ... (15/11/2015)

Ahsan Ali wrote: “Celebrations???”

Command: ViewLikedList(post5)

Post Liked By:
U2 – Amna Akram
P1 – Food Fusion
U3 - Waheed Khan
U4 - Burhan Tahir

Command: LikePost(post5)
Command: ViewLikedList(post5)

Post Liked By:
U2 – Amna Akram
P1 – Food Fusion
U3 - Waheed Khan
U4 - Burhan Tahir
u7 – Abdullah Nadeem

Command: PostComment(post4, Good Luck for your Result)
Command: ViewPost(post4)

--- Ali Ahmed shared “Waiting for Result”
Abdullah Nadeem wrote: “Good Luck for your Result”

Command: PostComment(post8, Thanks for the wishes)
Command: ViewPost(post8)

--- Abdullah Nadeem is Celebrating a birthday
“Happy Birthday to my dear Mom” ... (14/11/2017)
Waheed Khan wrote: “Happy Birthday Aunty”
Abdullah Nadeem wrote: “Thanks for the wishes”

Command: SeeYourMemories() //Imp: Sharing a memory multiple times??

We hope you enjoy looking back and sharing your memories on Facebook, from the most recent to those long ago.

On this Day
2 Years Ago

--- Abdullah Nadeem is Celebrating Success
“Got D in toughest subject... Thanks God I am Pass finally...” ... (15/11/2015)
Ahsan Ali wrote: “Celebrations???”

Command: ShareMemory(post10, “Never thought I will be specialist in this field...”)
Command: View TimeLine

Abdullah Nadeem –Time Line

~~~ Abdullah Nadeem shared a memory ~~~ ... (15/11/2017)

“Never thought I will be specialist in this field...”

(2 Years Ago)

--- Abdullah Nadeem is Celebrating Success

“Got D in toughest subject... Thanks God I am Pass finally...” ... (15/11/2015)

--- Abdullah Nadeem is Celebrating a birthday

“Happy Birthday to my dear Mom” ... (14/11/2017)

Waheed Khan wrote: “Happy Birthday Aunty”

--- Abdullah Nadeem is Celebrating a birthday

“Happy Birthday to my dear Father” ... (14/10/2017)

Ahsan Ali wrote: “Happy Birthday Uncle”

--- Abdullah Nadeem is Celebrating Success

“Got D in toughest subject... Thanks God I am Pass finally...” ... (15/11/2015)

Ahsan Ali wrote: “Celebrations???”

---

Command:            ViewPage(p1)

## Food Fusion

--- Food Fusion is making Kashmiri Chai (Pink Tea). ... (14/11/2017)

“Try this at home...”

Food Fusion wrote: “Followrs please try this recipe and give your feedback”

Amna Akram wrote: “Yummy”

Ahsan Ali wrote: “One pink tea for me”

--- Food Fusion is making Halwa Puri. ... (10/11/2017)

“Sunday Special Breakfast for our followers...”

Command:            Set current user “u11”

Ahsan Ali successfully set as Current User

Command: ViewHome

Command: ViewTimeline