**Console-based Social Network Application**

**CurrentDate Help:**

<https://learn.microsoft.com/en-us/dotnet/api/system.datetime?view=net-8.0>

<https://learn.microsoft.com/en-us/dotnet/api/system.datetime.now?view=net-8.0#system-datetime-now>

<https://learn.microsoft.com/en-us/dotnet/api/system.datetime.today?view=net-8.0#system-datetime-today>

**Important Instructions:**

Submit only one cpp file. Do not take any input from user. Hardcode the sample run’s commands.

**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, having 10 friends at max. He has a list of pages which he has liked (10 likedpages at max).
* Each **Page** has a unique ID, title, list of posts it has shared (page’s timeline, 10 posts at max).
* Each **Post** has a unique ID, description/text, no of likes, list of people who have liked it and shared date. A post can have 10 comments at max.
* A **comment** is posted by a specific user or page.
* A post *may have* activity, check-in, tags, pictures and video. Our application is only supporting activities at the moment. An **Activity** has 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. |

Our application doesn’t support types Eating, Travelling, Drinking, and Watching etc. at the moment.

**Required Functionality:**

**Phase I:**

1. **Set Current User**
   1. 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 Friend List of a User**
   1. Take ID of a user and display his friends list
3. **View Liked Pages of a User**

**Phase II:**

1. **View User’s Timeline**
   1. Display User Name
   2. Display user’s posts in his timeline
2. **View Page**
   1. Take Page ID and display its title and all its posts
3. **View a Post**
   1. Take post ID and Display the post along with its comments
4. **Like a post**
   1. Ask user about ID of post and like it. A post can be liked by 10 users/pages at max.
5. **View the list of People who liked a post**
   1. Take Post ID from user and display list of people who have liked it

**Phase III:**

1. **Comment on a Post**
   1. Take post ID and comment from the user and add this comment in the post
2. **View Home of Current User**
   1. Display all posts from last 2 days, shared by him, his friends and liked pages.
3. **Add a Post with Activity**
4. **Share a Memory**

**Important Instructions**

* You are not allowed to use global variables and functions
* Use best 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 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.

**Sample Run:** You are required to bring following output (on your console window) at time of your evaluation. DO NOT ASK USER TO ENTER ANYTHING AT RUNTIME. (Make a function Controller::Run() and hardcode function calls to run following sample).

|  |
| --- |
| -------------------------------------------------------------------------------------------------------------  Command: Set current System Date 17 4 2024  -------------------------------------------------------------------------------------------------------------  System Date: 17/4/202024  -------------------------------------------------------------------------------------------------------------  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 TimeLine  ---------------------------------------------------------------------------------------------------------------  Abdullah Nadeem –Time Line  --- Abdullah Nadeem is Celebrating a birthday (1h):  “Happy Birthday to my dear Mom”  Waheed Khan: “Happy Birthday Aunty”  --- Abdullah Nadeem is Celebrating a birthday (17/10/2023):  “Happy Birthday to my dear Father”  Ahsan Ali: “Happy Birthday Uncle”  --- Abdullah Nadeem is Celebrating Success (17/4/2020):  “Got D in toughest subject… Thanks God I am Pass finally…”  Ahsan Ali: “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: ViewPage(p1)  ---------------------------------------------------------------------------------------------------------------  Food Fusion  --- Food Fusion is making Kashmiri Chai (Pink Tea) (3d):  “Try this at home...”  Food Fusion: “Followrs please try this recipe and give your feedback”  Amna Akram: “Yummy”  Ahsan Ali: “One pink tea for me”  --- Food Fusion is making Halwa Puri (17/3/2024):  “Sunday Special Breakfast for our followers...”  ---------------------------------------------------------------------------------------------------------------  Command: View Home  ---------------------------------------------------------------------------------------------------------------  Abdullah Nadeem – Home Page  //This is displaying posts of 16th and 17th April (17th April is currentDate)  --- Abdullah Nadeem is Celebrating a birthday (1h):  “Happy Birthday to my dear Mom”  Waheed Khan: “Happy Birthday Aunty”  --- Waheed Khan is feeling excited (1d):  “OOP Project Started Yayy...”  Amna Akram: “Best of Luck”  Abdullah Nadeem: “Interesting”  --- Ahsan Ali (1h): //If it was today but we are not keeping DateTime so display 1h difference in this case  “Waiting for Weekend”  Saad Ali: “Any plans for Get Together?”  Abdullah Nadeem: “Yes BBQ”  Nimra Batool: “Lunch Buffet please”  --- Ali Ahmed (2d):  “Waiting for Result”  --- Food Fusion is making Kashmiri Chai (Pink Tea) (3d):  “Try this at home...”  Food Fusion: “Followers please try this recipe and give your feedback”  Amna Akram: “Yummy”  Ahsan Ali: “One pink tea for me”  --- Al Jazeera English (…): //Do yourself  “Oil drilling in Alaska's indigenous communities is on the table again.”  --- Rumi Quotes (…):  “Be free of possessing things - Rumi”  Ali Ahmed: “Rumi is great”  ---------------------------------------------------------------------------------------------------------------  Command: PostComment(post4, Good Luck for your Result)  Command: ViewPost(post4)  --- Ali Ahmed (2d):  “Waiting for Result”  Abdullah Nadeem: “Good Luck for your Result”  ---------------------------------------------------------------------------------------------------------------  Command: PostComment(post8, Thanks for the wishes)  Command: ViewPost(post8)  --- Abdullah Nadeem is Celebrating a birthday (1h):  “Happy Birthday to my dear Mom”  Waheed Khan: “Happy Birthday Aunty”  Abdullah Nadeem: “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  4 Years Ago  --- Abdullah Nadeem is Celebrating Success (17/4/2020):  “Got D in toughest subject… Thanks God I am Pass finally…”  Ahsan Ali: “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 ~~~ (1h)  “Never thought I will be specialist in this field…”  ~~~ 3 years ago ~~~  ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~  --- Abdullah Nadeem is Celebrating Success (17/4/2020):  “Got D in toughest subject… Thanks God I am Pass finally…”  ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~  //Its new comment will come here..  --- Abdullah Nadeem is Celebrating a birthday (1h):  “Happy Birthday to my dear Mom”  Waheed Khan: “Happy Birthday Aunty”  --- Abdullah Nadeem is Celebrating a birthday (17/10/2023):  “Happy Birthday to my dear Father”  Ahsan Ali: “Happy Birthday Uncle”  --- Abdullah Nadeem is Celebrating Success (17/4/2020):  “Got D in toughest subject… Thanks God I am Pass finally…”  Ahsan Ali: “Celebrations???”  ---------------------------------------------------------------------------------------------------------------  Command: Set current user “u11”  Ahsan Ali successfully set as Current User  Command: ViewTimeline  //Try different commands, everything should run properly.  //Set Different Current Date, everything should run properly. |