UX Engineering

Milestone III

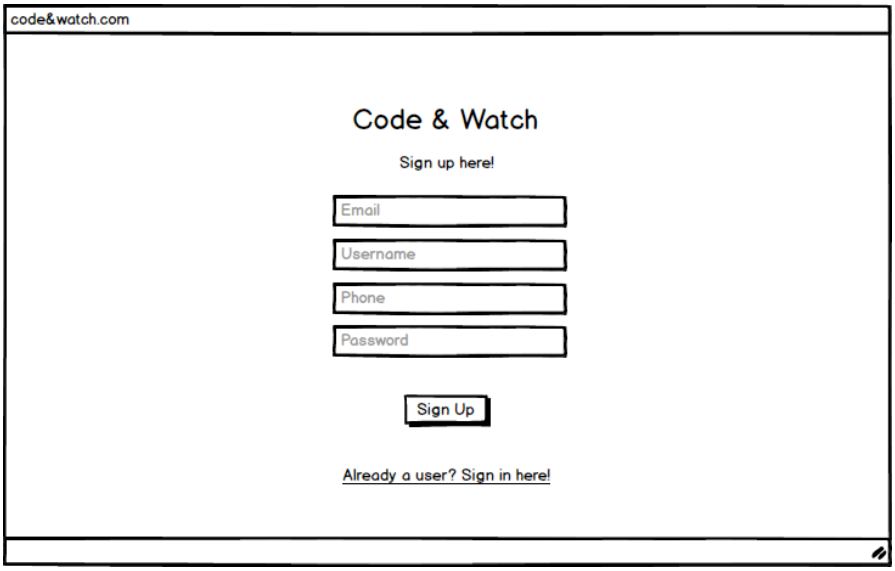
Code & Watch

A project by B-01

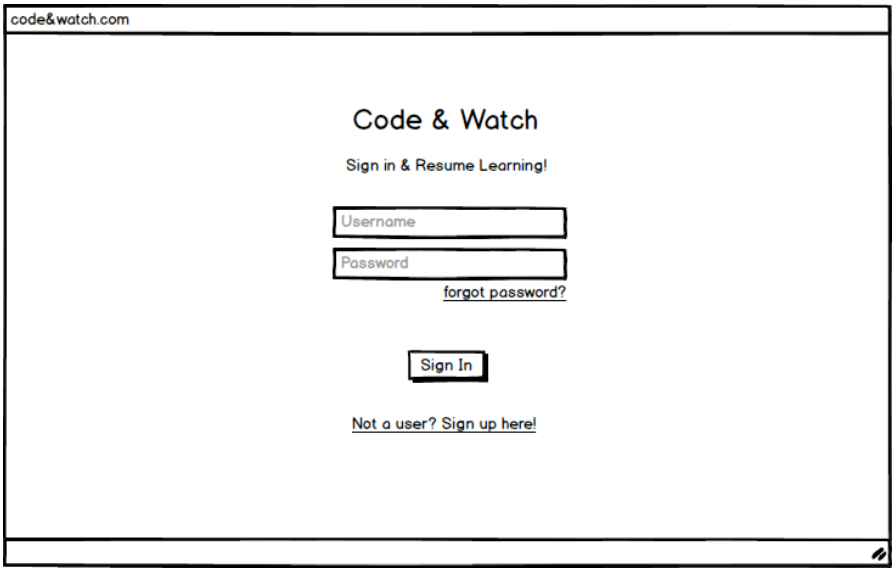
Malik Atif Aziz [i15-0057]

Ibrahim Ikram [i15-0278]

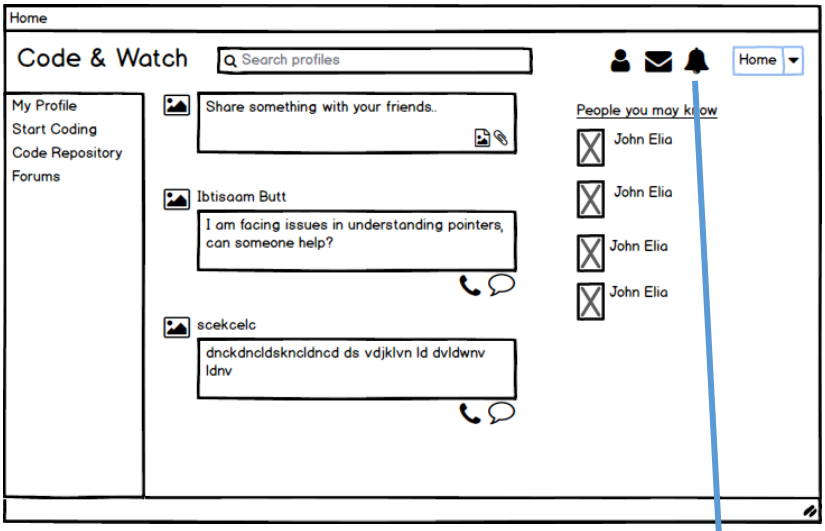
Section I: Low Fidelity Prototypes



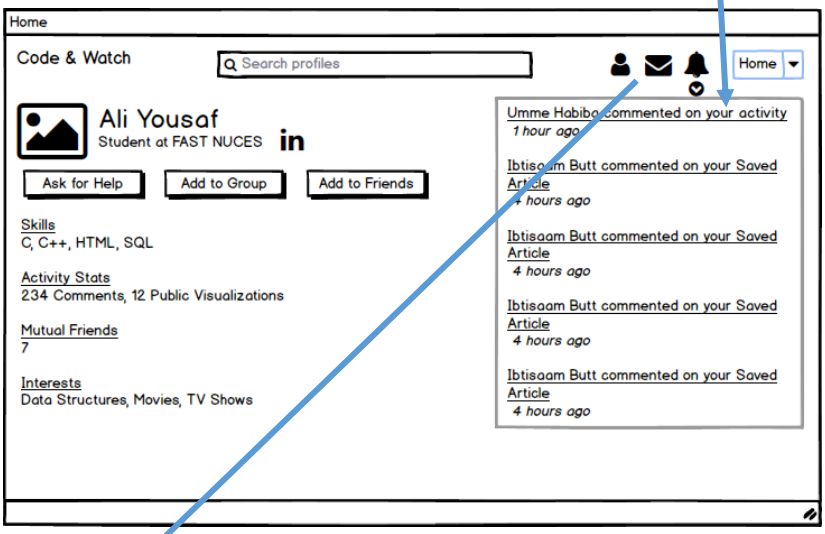
Sign Up if not a User!



Sign in if already a user



Home Page of Code&Watch.com



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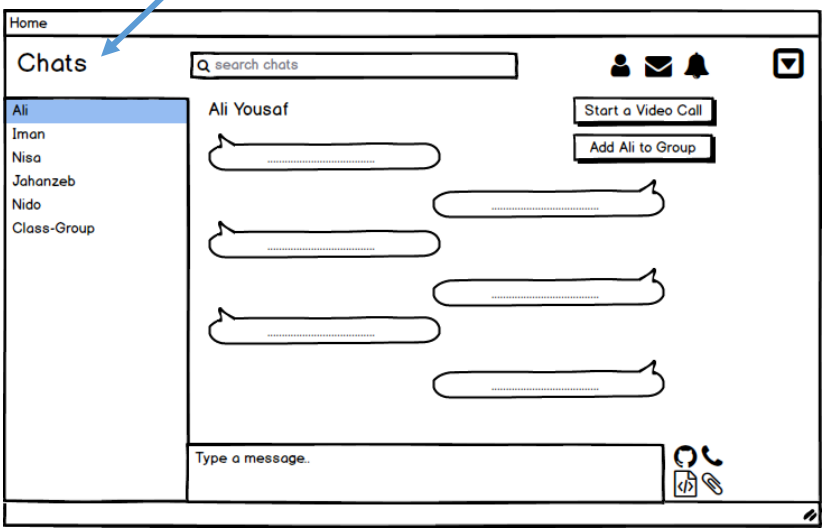
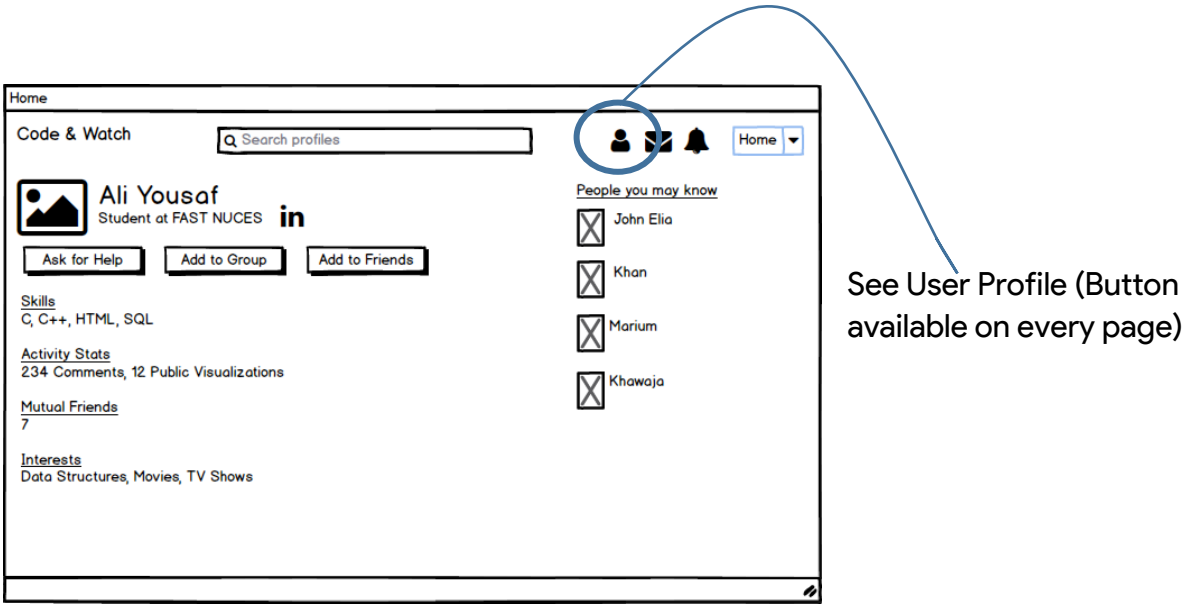
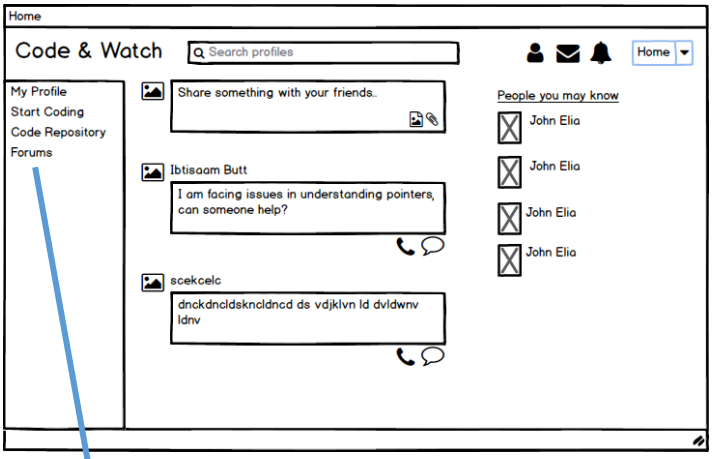


Check Messages

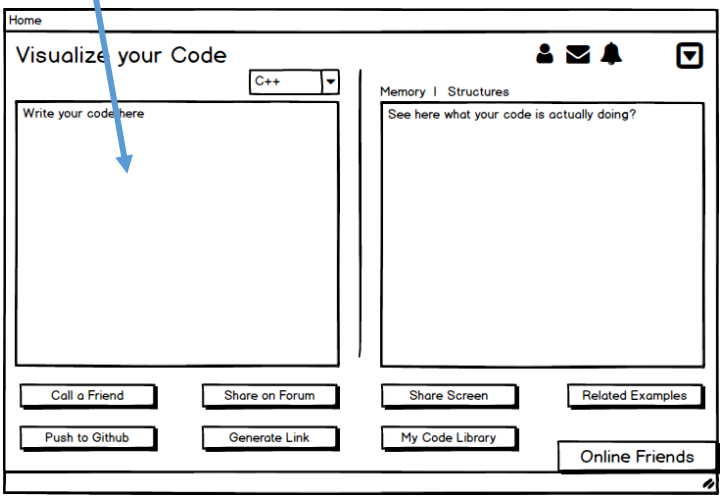


See User Profile (Button available on every page)

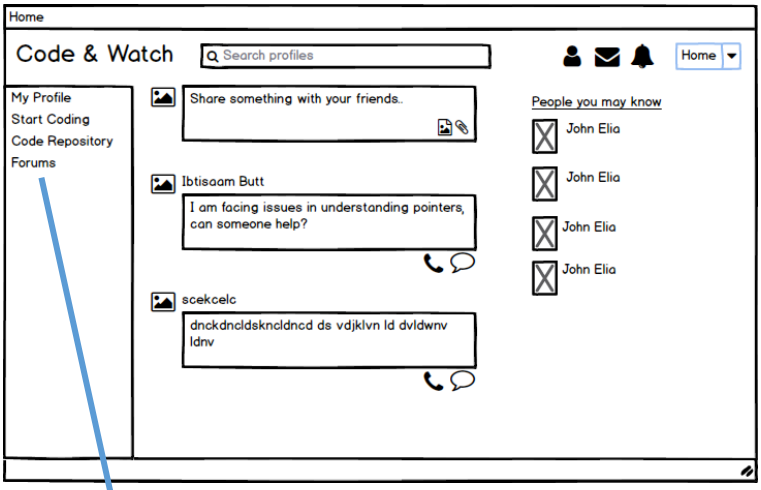
Go to Code Editor



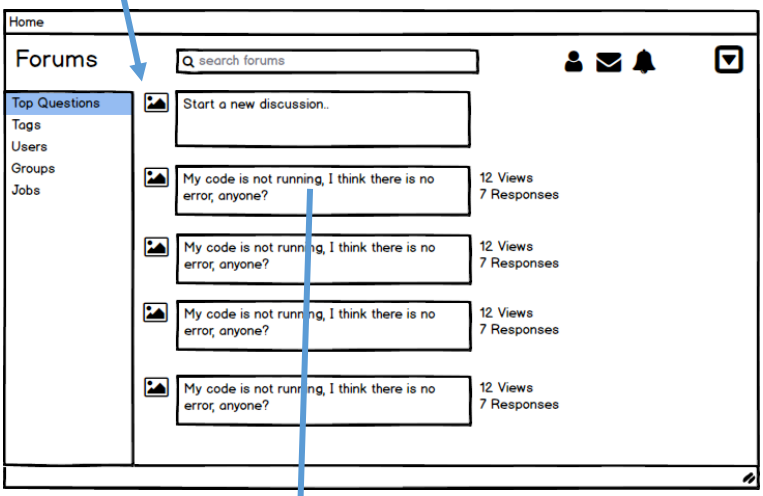
From Home, Select Start Coding



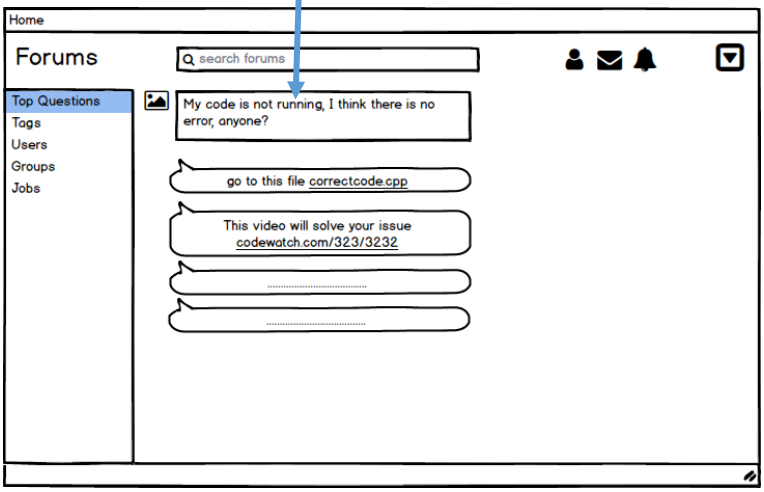
Go to Forums



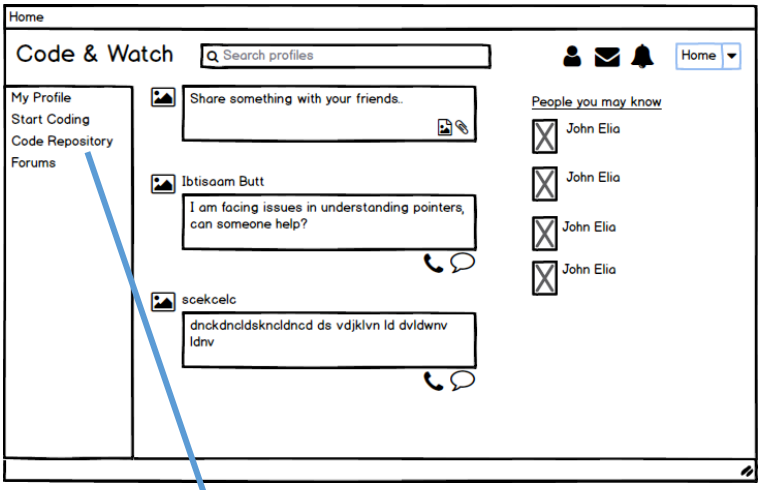
From Home, Select Forums



Click on any post, if you want to see details

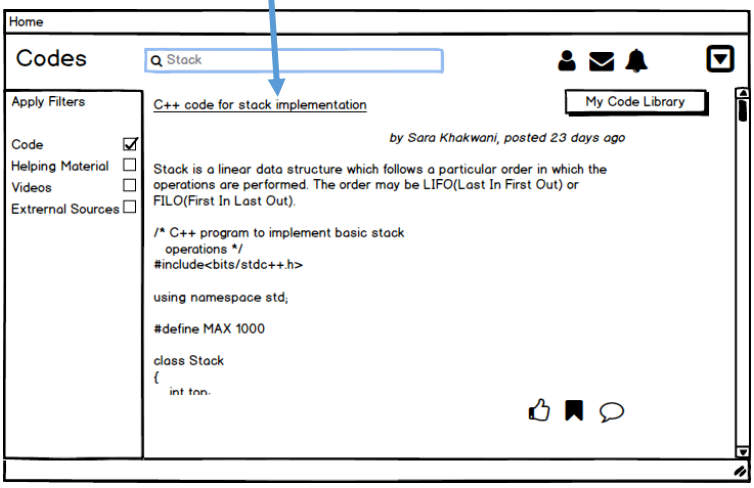


Find related material/search for code

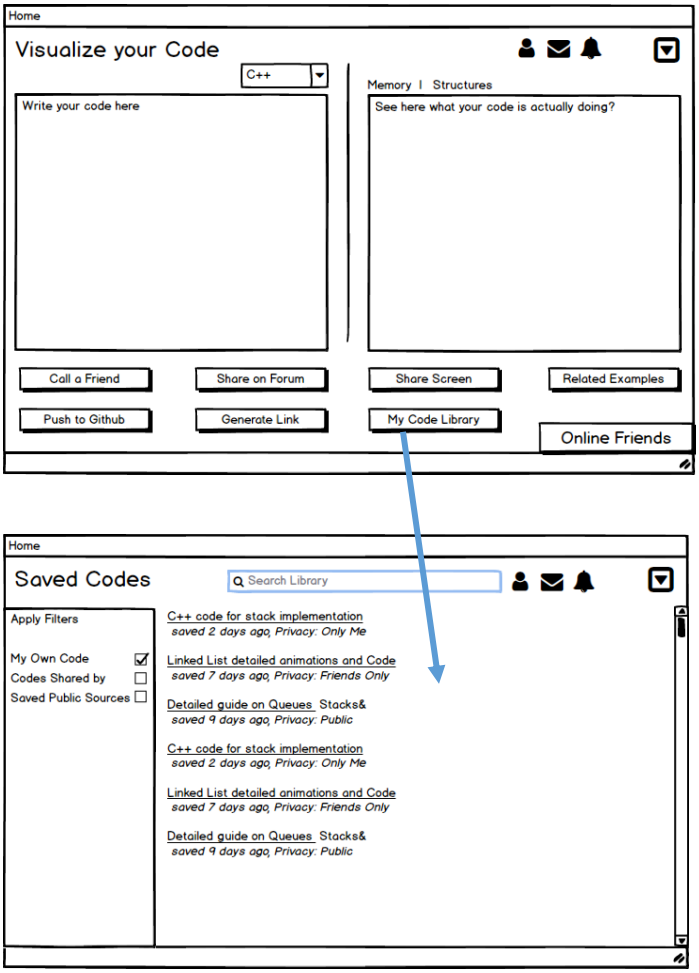


From Home, Select Code Repository

Choose any thread to open it for details



Go to My Code Library



From Code Editor, go to My Code Library

Section II: Micro-Usability Test Plan

High level Goals

- Is the application design easy to understand and use?
- Can user complete all tasks easily without facing ambiguity and confusion?
- What problems do students face while using this app?
- Are users satisfied with the navigation throughout application?

Recruiting Criteria

Our application has users from different age groups but all of them will be technology users, hence, there is no need to worry about if they can use a computer or not. Therefore, we will conduct this usability test by recruiting 3-4 students of Computer Science at FAST NU, Islamabad.

The recruiting criteria was defined as:

- Computer Science enthusiasts.
- Rich basic understanding & poor IT understanding of basic programming concepts.
- Has faced difficulty in understanding CP or Data Structures.

Test Components

- User Test Script
- Consent Form
- Task Descriptions
- User Test Logging Sheet
- Post Test SUS Questionnaire

Test Procedure

- They were instructed to complete 4 Tasks using Code&Watch, while narrating their thoughts.
- During each task performed by a participant, the Logging Sheet was used to note the Task Number, Success (completed easily), Failure (Cannot complete, difficulty in completing), and other Observations
- After the test, the Post-Test Questionnaire was given, asking about their experience on the site. The standard SUS questionnaire was used for this purpose.

Consent Form

I agree to participate in the usability study of web based application, Code&Watch. I understand that this information will be used for research purpose only, and that my name, image, and other personally identifiable information will not be used for any other purpose.

I understand that participation in this usability study is voluntary, and I agree to immediately raise any concerns or areas of discomfort during the session with the study moderator.

Please sign below to indicate that you have read and you understand the information on this form, and that any questions you might have about the session have been answered.

Date: _____

Name: _____

Signature: _____

Thank you! We appreciate your participation.

User Test Script

Preamble

Thank you for participating in this test. Purpose of this test is to test the qualities of our application and not your mental or physical ability. You can tell the moderator at any stage to stop if something is causing you discomfort or happening against you will.

I have prepared four tasks that I will ask you to perform. They are based on the test cases where an individual can use them to get help related to his/her disability. While performing these tasks I want you to do following things for me.

1. I want you to be verbal and communicate with me about any difficulty or problem you could be facing while using this application.
2. Let me know you have completed a task so we can move on to next one.

While performing these tasks. I will not help you and I want you to tell me about the problems you are facing. As we want the scenario to be close to real world I won't help you in completing them to create a real world scenario.

Task 1

Someone suggested you to try Code&Watch after knowing that you are facing difficulty in understanding Arrays. Now please sign up on our application and complete your first task.

Task 2

Find your code library and open any of the saved codes.

Task 3

Go to code repository and search for topics on Stacks.

Task 4

Find discussion forums and try posting a question.

Logging Sheet

User 1

Task	Task1	Task2	Task3	Task4
Completed	O			O
With Assistance			O	
Failed		O		

User 2

Task	Task1	Task2	Task3	Task4
Completed	O		O	O
With Assistance		O		
Failed				

User 3

Task	Task1	Task2	Task3	Task4
Completed	O			
With Assistance			O	
Failed		O		O

User 4

Task	Task1	Task2	Task3	Task4
Completed	O	O		O
With Assistance			O	
Failed				

Post Test Questionnaire

User 1

Please mark your answers on a scale of 1 -5	Strongly Disagree 1	2	3	4	Strongly Agree 5
I think that I would like to use this system frequently.				O	
I found the system unnecessarily complex	O				
I thought the system was easy to use.				O	
I think that I would need the support of a technical person to be able to use this system.	O				
I found the various functions in this system were well integrated.			O		
I thought there was too much inconsistency in this system		O			
I would imagine that most people would learn to use this system very quickly.					O
I found the system very burdensome to use	O				
I felt very confident using the system.					O
I needed to learn a lot of things before I could get going with this system.	O				

SUS Score
87.5

User 2

Please mark your answers on a scale of 1 -5	Strongly Disagree 1	2	3	4	Strongly Agree 5
I think that I would like to use this system frequently.					O
I found the system unnecessarily complex		O			
I thought the system was easy to use.					O
I think that I would need the support of a technical person to be able to use this system.	O				
I found the various functions in this system were well integrated.				O	
I thought there was too much inconsistency in this system		O			
I would imagine that most people would learn to use this system very quickly.					O
I found the system very burdensome to use		O			
I felt very confident using the system.				O	
I needed to learn a lot of things before I could get going with this system.			O		

SUS Score
82.5

User 3

Please mark your answers on a scale of 1 -5	Strongly Disagree 1	2	3	4	Strongly Agree 5
I think that I would like to use this system frequently.			O		
I found the system unnecessarily complex	O				
I thought the system was easy to use.					O
I think that I would need the support of a technical person to be able to use this system.	O				
I found the various functions in this system were well integrated.				O	
I thought there was too much inconsistency in this system		O			
I would imagine that most people would learn to use this system very quickly.					O
I found the system very burdensome to use	O				
I felt very confident using the system.				O	
I needed to learn a lot of things before I could get going with this system.	O				

SUS Score
78

User 4

Please mark your answers on a scale of 1-5	Strongly Disagree 1	2	3	4	Strongly Agree 5
I think that I would like to use this system frequently.			O		
I found the system unnecessarily complex	O				
I thought the system was easy to use.					O
I think that I would need the support of a technical person to be able to use this system.	O				
I found the various functions in this system were well integrated.				O	
I thought there was too much inconsistency in this system		O			
I would imagine that most people would learn to use this system very quickly.					O
I found the system very burdensome to use	O				
I felt very confident using the system.				O	
I needed to learn a lot of things before I could get going with this system.	O				

SUS Score
84.5

Findings

Issue #	Usability Issue	Description	Severity
1	Application is very bland and have basic design which is not interesting to use	Users aren't very interested in using the app because design isn't modern	Important to fix
2	Users cannot go to Saved Codes directly.	They first need to go to Code editor & then to saved codes.	Important to fix
4	Chat friend list is confusing if two contacts have same name	There isn't any visual representation of contacts i.e. Profile picture.	Important to Fix

Appendix

Description

Computer Science has attracted thousands of students in past 2 decades and is still open for a lot of research and development. In our country, half of the students who end up in a computing field never thought of or were never aware of it during their high schools and therefore, they (despite the fact that they are high achievers) find it difficult to easily grasp the basic programming techniques and specifically data structures during their initial days and understanding of those days is plays vital role throughout their career.

Secondly, not everyone comes with the same level of intellect so there must be something to aid those who want to learn but are facing difficulties in understanding basic idea quickly or easily. We aim to empower coders (starters) by providing an additional resource through which they can visualize their code in real time because, recognize rather than recall!

Functional Requirements

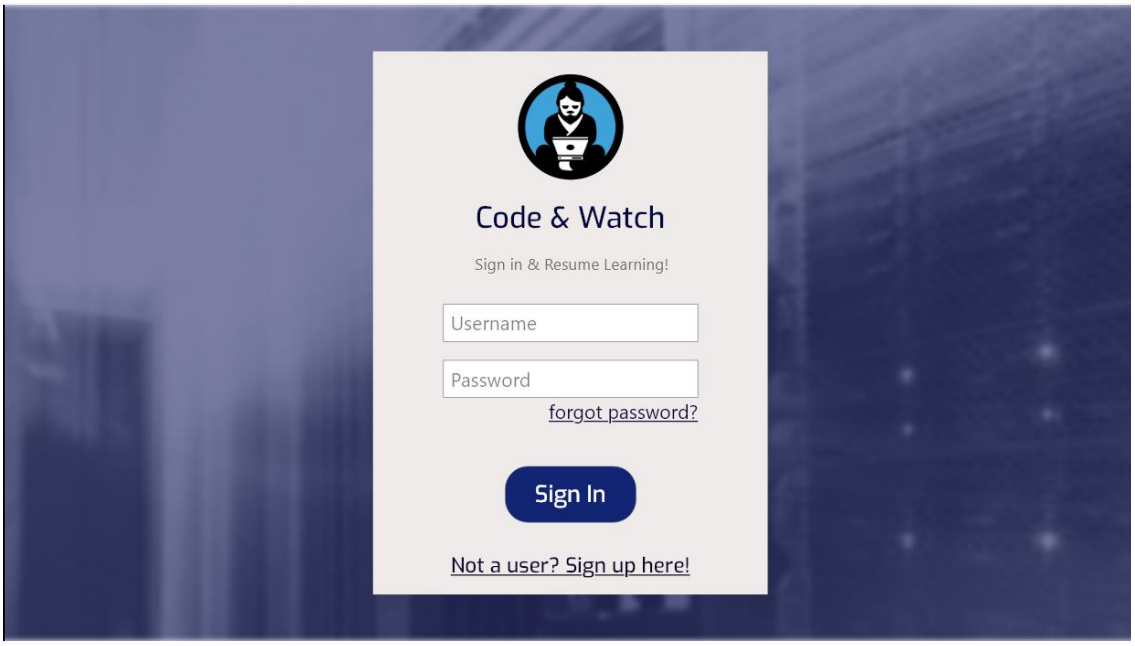
1) A website where users can create their account (With all assistance of recovering password in case of forgetting & Signing in using other accounts e.g. google, Microsoft or Facebook)
2) Website must have a code editor to write code and a complier to run the code (code editor must be the one which has the best user experience e.g. Sublime Text).
3) It must have an option to split screen and view real time animations of basic data structures (for those who only want to use it for code and don't want to see animations).
4) It should at least have visualizations supporting arrays, stacks, queue, linked list, and trees (these are the basic needs of a new learner, it should be scalable to add more algorithms and data structures in future).
5) Users can add their friends, can share screens, can ask for help or comment on codes (in case animation is not enough for understanding or a user wants to help any of his or her friends).
6) It should allow users to debug their code (run code line by line for those who want to see what is happening by writing a single command).
7) Users can save any piece of code or any animation for later use or revision (so that they can revise what have they done in the past).
8) It may have a forum where all the users can share their problems and any other user can share his/her code to visualize.
9) It may have a library of already made visualizations so that users can easily access without wandering on the internet and other websites.

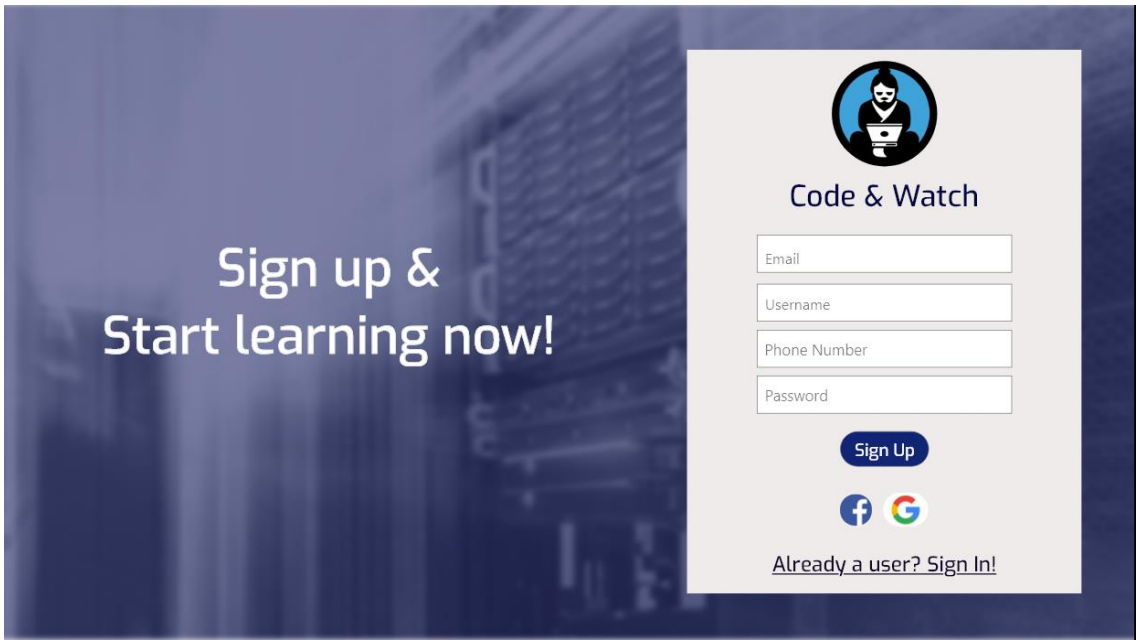
10) It should be scalable and can later be converted into an offline application or a mobile app.

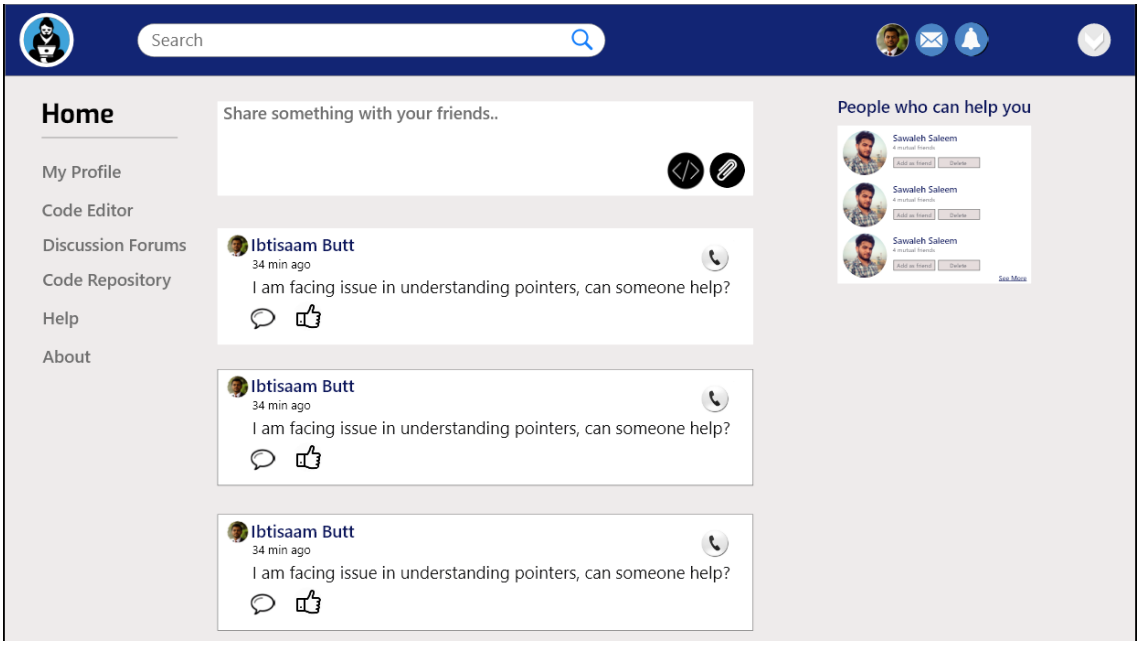
Constraints

1) It should be interactive to use in order to beat competitors.
2) Navigation within the application should be easy and quick to avoid wastage of time.
3) Application is related to education, and students get bored very quickly, so it should have features to accommodate those who want to enjoy while learning.
4) It must have all the information related to a topic available in order to save users' time.
5) It must not let users search for topics here and there on other websites.
6) It must be engaging and interactive to gain users' interest.
7) It must not violate users' privacy policies and it must take care of users' data.

Medium Fidelity Prototypes



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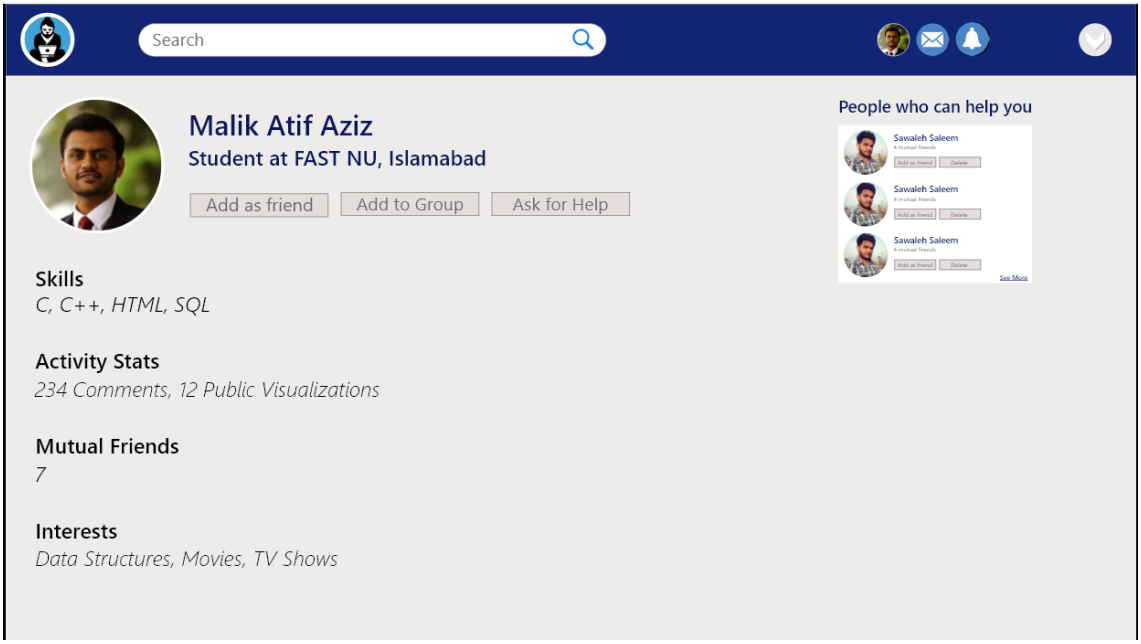
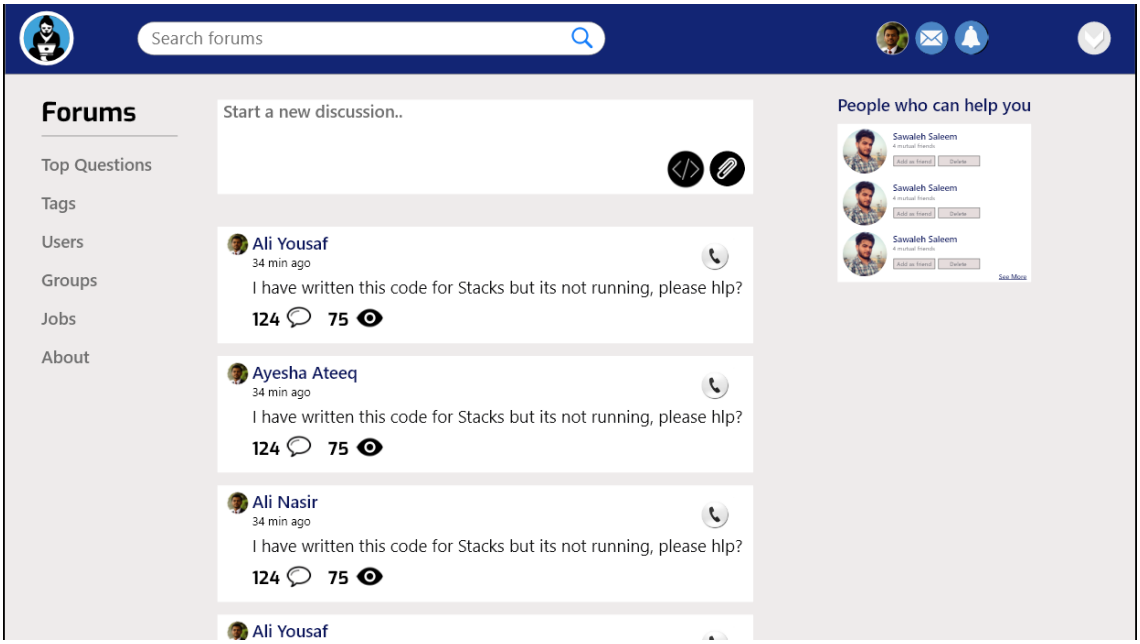
Ibtisaam Butt
34 min ago
I am facing issue in understanding pointers, can someone help?
Ibtisaam Butt
34 min ago
I am facing issue in understanding pointers, can someone help?
Ibtisaam Butt
34 min ago
I am facing issue in understanding pointers, can someone help?
People who can help you
Sawaleh Saleem
Sawaleh Saleem
Sawaleh Saleem


Search
Malik Atif Aziz
Student at FAST NU, Islamabad
Add as friend
Add to Group
Ask for Help
Skills
C, C++, HTML, SQL
Activity Stats
234 Comments, 12 Public Visualizations
Mutual Friends
7
Interests
Data Structures, Movies, TV Shows
People who can help you
Sawaleh Saleem
Sawaleh Saleem
Sawaleh Saleem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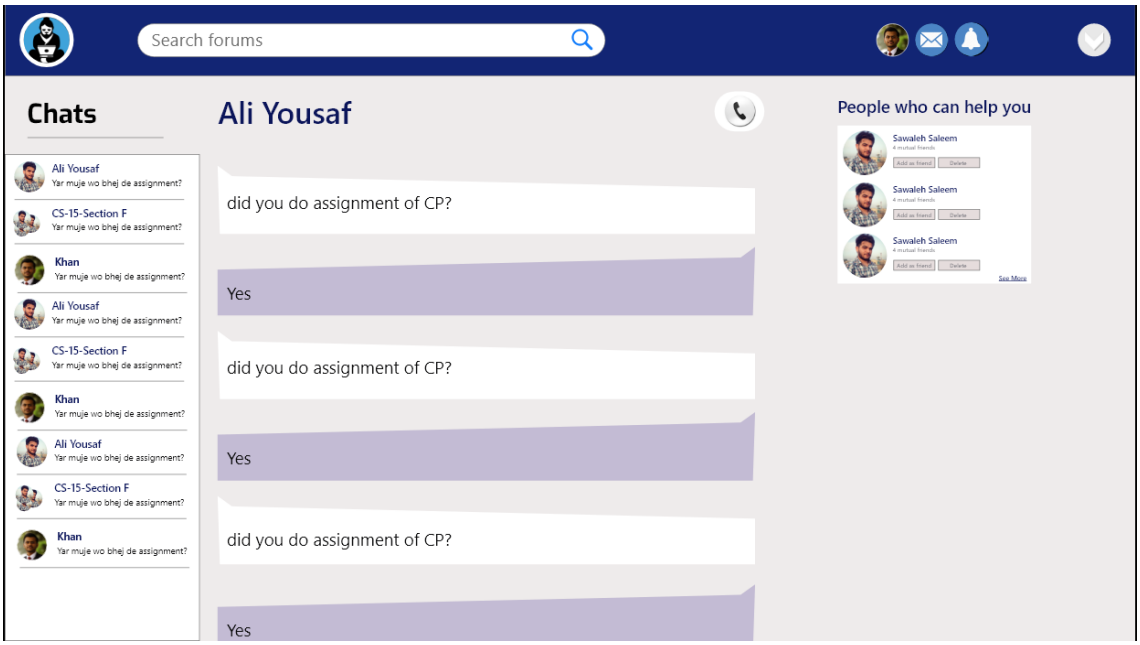
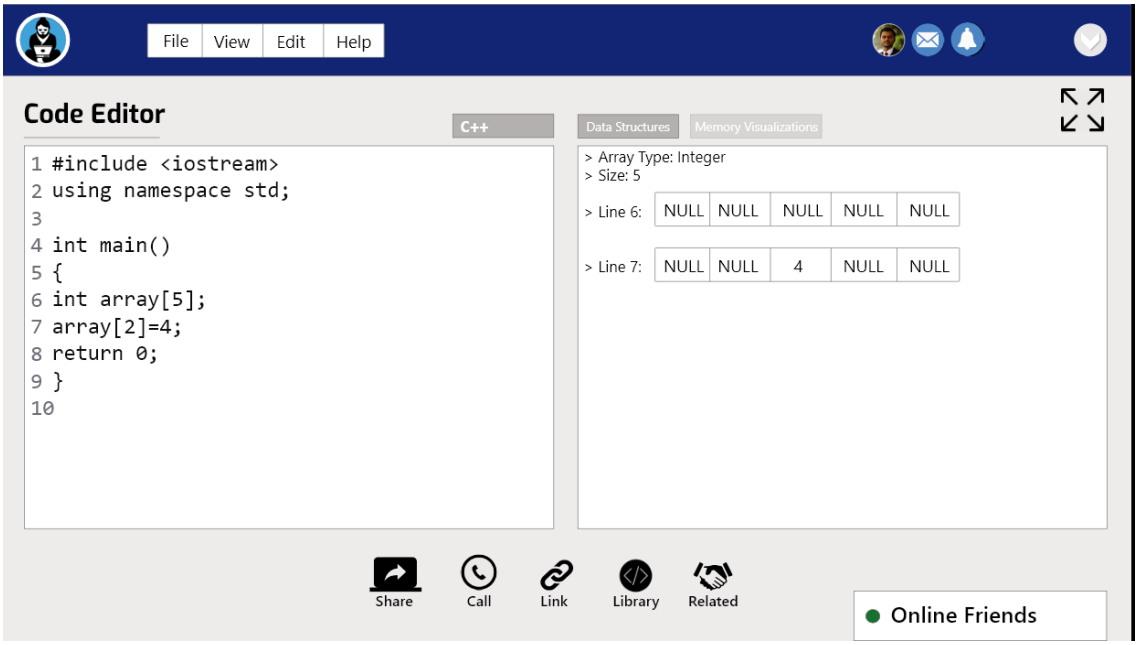
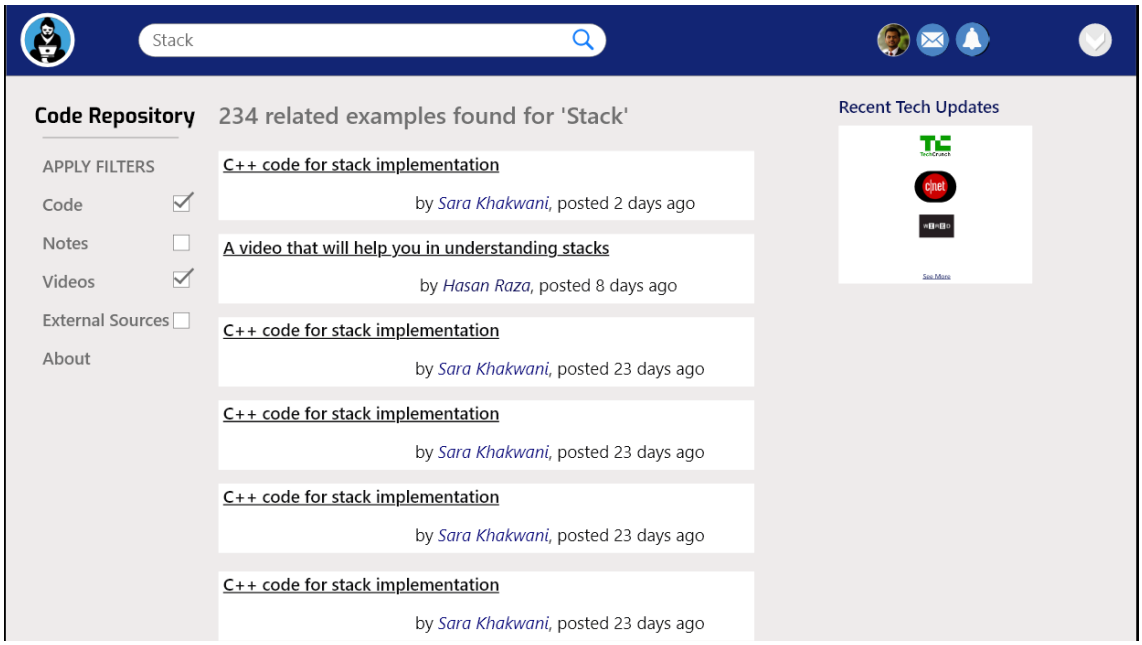
Groups
Jobs
About
Start a new discussion..
Ali Yousaf
34 min ago
I have written this code for Stacks but its not running, please hlp?
124
75
Ayesha Ateeq
34 min ago
I have written this code for Stacks but its not running, please hlp?
124
75
Ali Nasir
34 min ago
I have written this code for Stacks but its not running, please hlp?
124
75
Ali Yousaf
People who can help you
Sawaleh Saleem
Sawaleh Saleem
Sawaleh Saleem


Search forums
Chats
Ali Yousaf
Yar muje wo bhej de assignment?
CS-15-Section F
Yar muje wo bhej de assignment?
Khan
Yar muje wo bhej de assignment?
Ali Yousaf
Yar muje wo bhej de assignment?
CS-15-Section F
Yar muje wo bhej de assignment?
Khan
Yar muje wo bhej de assignment?
Ali Yousaf
Yar muje wo bhej de assignment?
CS-15-Section F
Yar muje wo bhej de assignment?
Khan
Yar muje wo bhej de assignment?
Ali Yousaf
did you do assignment of CP?
Yes
did you do assignment of CP?
Yes
did you do assignment of CP?
Yes
People who can help you
Sawaleh Saleem
Sawaleh Saleem
Sawaleh Saleem


File
View
Edit
Help
Code Editor
C++
Data Structures
Memory Visualizations
1 #include <iostream>
2 using namespace std;
3
4 int main()
5 {
6 int array[5];
7 array[2]=4;
8 return 0;
9 }
10
> Array Type: Integer
> Size: 5
> Line 6: NULL NULL NULL NULL NULL
> Line 7: NULL NULL 4 NULL NULL
Share
Call
Link
Library
Related
Online Friends


Stack
Code Repository
234 related examples found for 'Stack'
APPLY FILTERS
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Videos
External Sources
About
C++ code for stack implementation
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A video that will help you in understanding stacks
by Hasan Raza, posted 8 days ago
C++ code for stack implementation
by Sara Khakwani, posted 23 days ago
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