Your Group Name
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Student #2 31: Student #2 Sara Mohamed Youssef

Project Name

1. Introduction

1.1. Scope

What is the problem that is solved by your project?

The problem is that the conferences should be held on campus.

Why do you think this is a problem?

As it may require travelling to attend a meeting or the world may face a lockdown for any reasons like what happened in Covid 19 .

1.2. System Overview

How do you think your proposed design ideas might overcome these?

our design provides all the possibilities the users use in the actual meeting with an alternative in the virtual meeting . ex :

- instead of talking and seeing each other,microphone and camera are used .
- Instead of presentation , a share screen is used .
- So on ...

1.2.1 Goals

Define SMART goals for your project

- Within 3 months we design a final prototype after evaluating it every month .
- For the next 6 months we try to communicate with companies to find a suitable fund for our app .

1.2.2 Tasks

What are the main task of your project

- To provide an alternative to the meeting on campus to be used by multiple categories of users .
- help disables using this application .
- Give more facilities to increase the productivity of meetings .

1.3 System Users

1.3.1 User Types

What are the primary, secondary and tertiary users?

Primary users : students , teachers and employees .

Secondary users : parents of students who use this app and the owner of companies where employees work .

Tertiary users : the designers of the app and the companies which fund this app .

1.3.1 Users Characteristics

What are the nature of the users who will use your project

No specific nature of users is required to use the project .

2. System Interaction Design

2.1. Establishing Requirements

2.1.1 Data Gathering

2.1.1.1 Selecting Participants

How did you select your data gathering participants? (i.e., sampling method?)

We used a non probability sampling :

- Convenience sampling : by doing interviews with a sample of students in our college .
- Volunteer panels : by sending the online questionnaire to different categories people and inviting them to fill it .

2.1.1.2 Participants

Who were your participants?

- People who filled the online form .
- Random students from our college .
- Calling 2 relatives who use these applications .

2.1.1.3 Participants Engagement

Did your participants know about your scope of work? (refer to your ICF forms)

Yes as we mentioned in the ICF that we are doing a research project of HCI -Human Computer Interactive- course, third year Computer and Systems Engineering department, Faculty of Engineering.

2.1.1.4 Techniques Used

Which data gathering techniques are used? (refer to your questionnaires and interviews)

2 data gathering techniques are used :

- Questionnaire " using online form " .
- interviews (physical and online).

2.1.2 Data Analysis

2.1.2.1 Participants Responses

What were your user responses? (use rigorous notations)

All charts and response analysis are collected in the following file: **https://docs.google.com/document/d/1LNrsc7hrsgOi0dH8mxDsm27BhRFaGgGOKha3CxLLFDQ/edit?usp=sharing**

2.1.2.2 Responses Interpretation

What are the main specifications that you can conclude from responses?

- This application will be used mainly by students to join classes
- The most important feature is to be easy to understand and use
- The most used feature is Screen Sharing
- The most needed feature is confirmation message before opening the camera or the microphone

2.1.2.3 Data Representation

What are the main use cases for your system? (use stories & scenarios or use-case diagram)

The scenario is included in the following file:
https://docs.google.com/document/d/16ROGMiUSU63uz_l2yQ_GQyLu1dOlx3LZ1fqs_VIvNAQ/edit?usp=sharing

2.1.3 Requirements

List your requirements here as bullets, and use 3-5 Volere cards for some of them

- Captions
- Annotation
- Voice Filter
- Scheduling
- Private chat
- Screen share
- Meeting record
- Unlimited meeting
- Virtual background
- Hardware Access Permission
- Functional access permission
- Controlled by voice instructions
- Support live watching by connecting record to cloud
- Confirmation message to open the camera or the microphone

Voice Filter

Requirement #: **2** Requirement Type: **4** Event/Use case #: **1**

Description: **Filter participant voice during talking in any meeting**

Rationale: **Sometimes there is a problem to hear the speaker because of his surround environment that has much noise, so it's better to filter his voice for more clarity**

Source: **First raised by Ray Dolby**

Fit Criterion: **the effect of noisy environment during speaking should be more than some prespecified value**

Customer Satisfaction: **7** Customer Dissatisfaction: **0**

Dependencies: **None** Conflicts: **None**

Supporting Materials: **audio noise reduction techniques**

History: **raised in 1966**

Private chat

Requirement #: **4** Requirement Type: **3** Event/Use case #: **2**

Description: **adding private chat where two participants can communicate privately.**

Rationale: **Sometimes one participants need to share data or message with only one person without making this data available to all participants in the same meeting**

Source:**Doug Brown**

Fit Criterion: **If a message is specified to be sent to only one participant, other participants shouldn't be able to see it or even know it is sent.**

Customer Satisfaction: **7** Customer Dissatisfaction: **0**

Dependencies: **None** Conflicts: **None**

Supporting Materials: **public chat materials supplied in current apps**

History: **1973**

To see more requirements cards :

https://drive.google.com/file/d/1uHYGlqyRmLB5iL2ZADlEVUCpjSyJF0Hg/view?usp=sharing

2.1.3.1 Functional Requirements

What are your system requirements?

- Captions
- Controlled by voice instructions
- Meeting record
- Scheduling
- Annotation

2.1.3.2 Non-Functional Requirements

What are your system requirements?

- Hardware access permission
- Functional access permission
- Unlimited meeting
- Confirmation message to open the camera or the microphone

2.1.3.3 Data Requirements

What are your system requirements?

- Screen share
- Can translate captions up to 10 different languages
- Support live watching by connecting record to cloud

2.1.3.4 Environment Requirements

What are your system requirements?

- Voice filter
- Virtual background
- Private chat

2.2. Design Alternatives

How did you employ User Empathy to design your alternatives?

- **Students:** users need this app for attending classes and education staff, we are part of this category so User Empathy here is implemented by default.
- **Parents:** users have young children who may face difficulties to deal with such an app alone, we simulated a virtual meeting with a child where one of us tried to help him, acting as his parent.

2.2.1 Conceptual Design

What are the main concepts used in your design?

The main concepts are; join meetings, record the meeting, share screen, use microphone and camera, send messages and interaction between participants.

What are the metaphors used in your design? and How good is your metaphor on a scale of 5? (Use the 5 metrics used in the lecture on slide “What is the best Metaphor?”)

Used Metaphors are features icons, these bullets represent the metaphors and how good are they on a scale of 5 points:

- **Microphone:** to mute and unmute participants, **5** points
- **Speaker:** refers to voice filter, **3** points
- **CC:** refers to captions which is standard icon used in many websites referring to subtitles, **4** points
- **Lock:** refers to lock screen; if the lock is it locked then this feature is enabled, else it is disabled, **4** points
- **Image icon in windows:** refers to virtual background, **2** points

2.2.2 Alternatives

What are the alternatives that you proposed?

- Turning on the microphone or the camera:
    - confirmation message appears
    - responds immediately
- Fixed icons on screen or list containing all of them

2.2.3 Interactions

Identify the methods of interactions that you will exploit in your design. You may assume any hardware requirements for some advanced features of your system

- **Instructing:** users can control this application by voice instructions
- **Exploring:** users can use virtual backgrounds

2.2.4 Assumptions and claims

What are the main assumptions and claims you have made?

- Many users won't pay for this application so supported features must be for free
- Users are familiar with other online meeting applications and their icons
- Many faults may happen due to touch screen so features icons must be out of access range to reduce faults
- Number of participants are quite small so handling participants list doesn't need complex structure
- Each meeting must be connected to cloud to support live watching

2.2.5 The 'un-dreamed-of' Need

Think about the needs that user can benefit by using your system that are not easily found in physical systems

- **Captions:** our system provides captions in several language for live conversation to help participants from different nationalities or disabled people to communicate better
- **Controlled by voice instructions:** this feature helps many disabled people who can't interact physically with the application to control the application easily.
- **Voice Filter:** this feature helps to reduce surrounded environment noise to provide better communication with high quality

2.3. Prototyping

2.3.1. Technique

Which method did you use for prototyping? and why do you think it is suitable here?

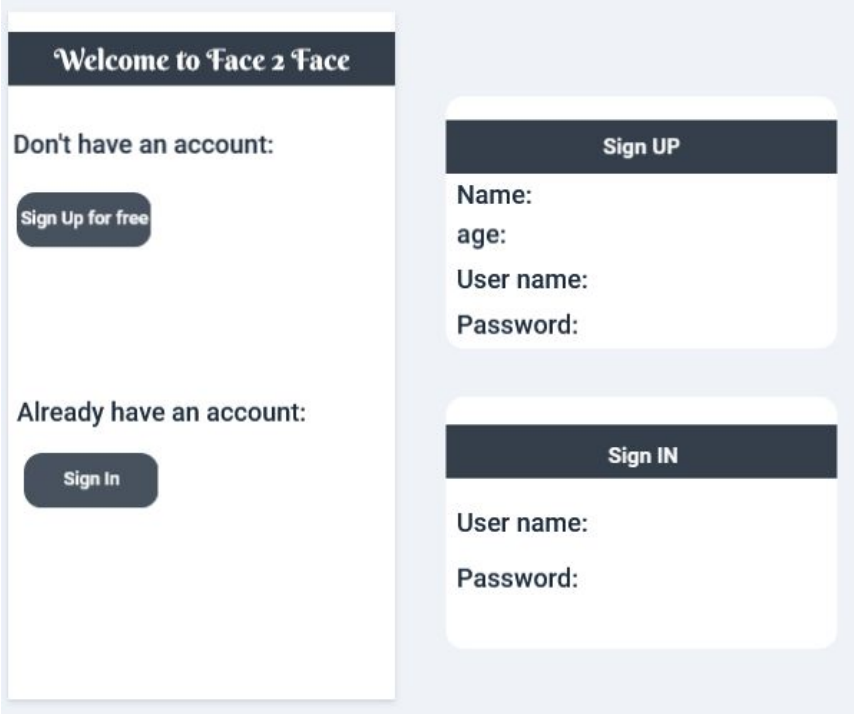
Sketching

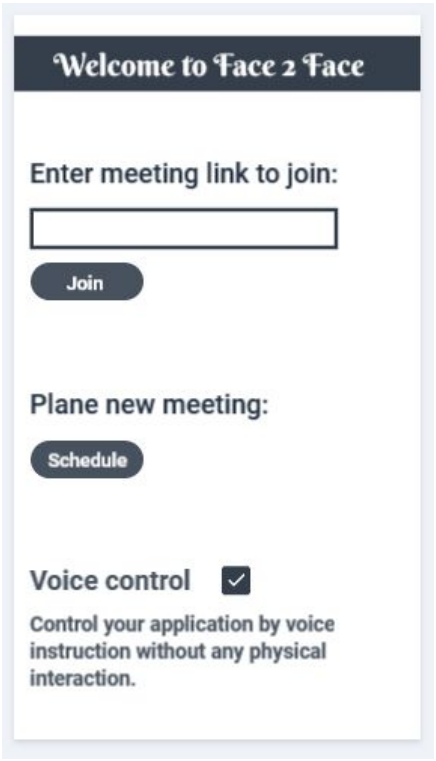
As the application consists of many layers so sketching is the best method to provide important details of each layout

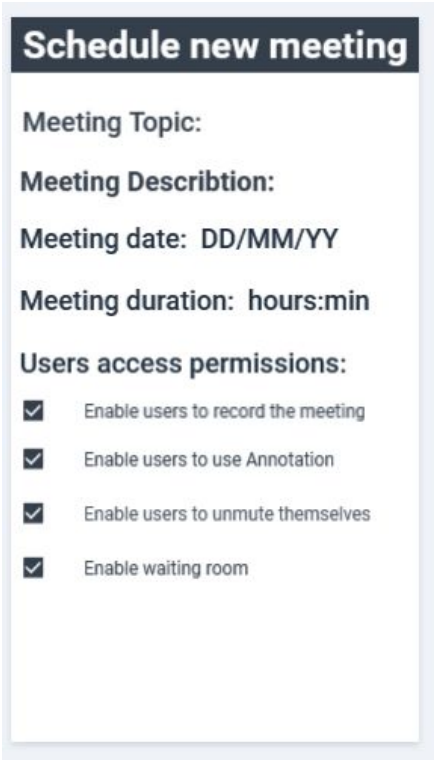
2.3.2. Low-Fidelity Prototyping

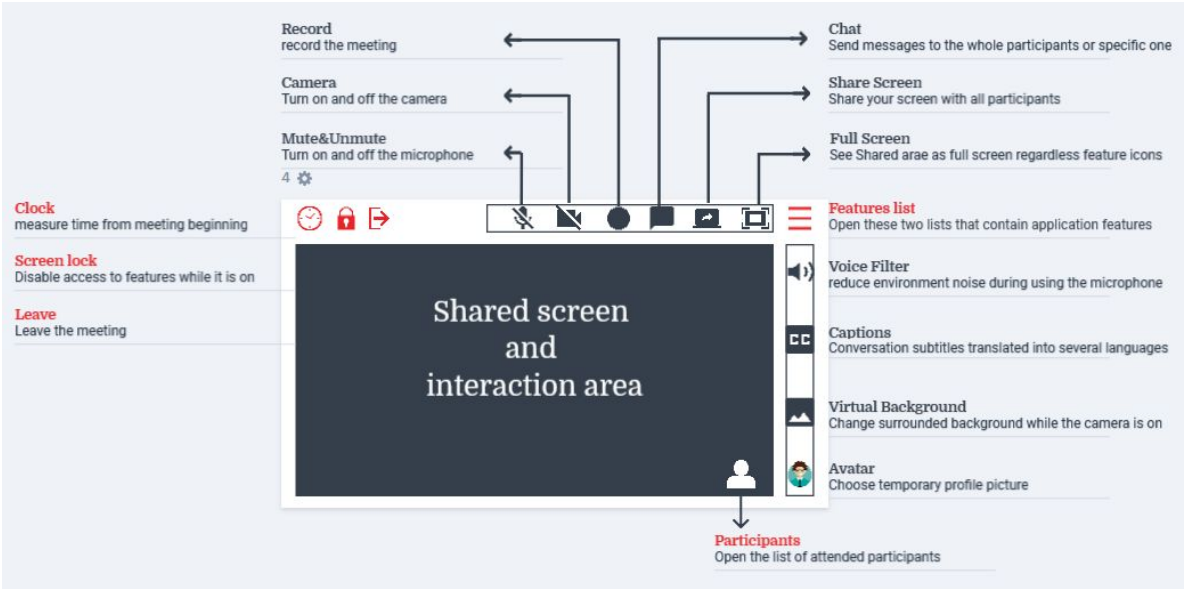
Show your designs wireframes here

1. **Phone**

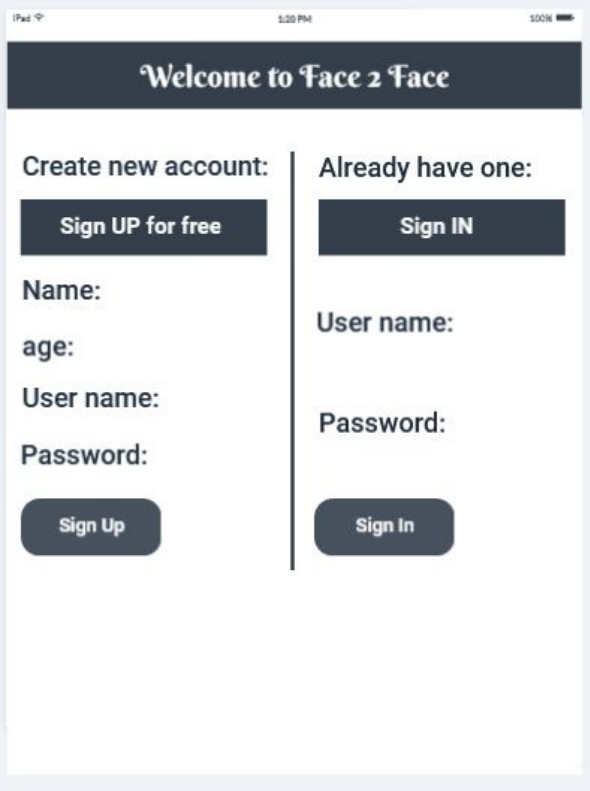


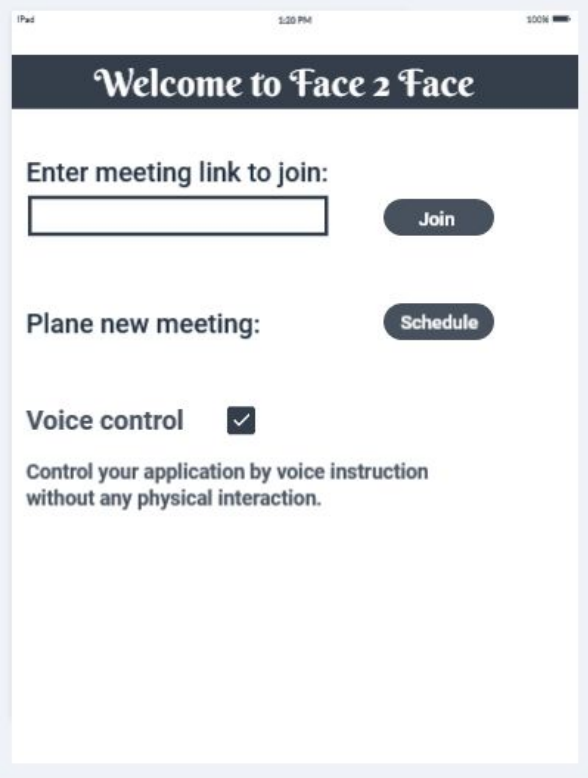

Welcome to Face 2 Face
Enter meeting link to join:
Join
Plane new meeting:
Schedule
Voice control
Control your application by voice instruction without any physical interaction.

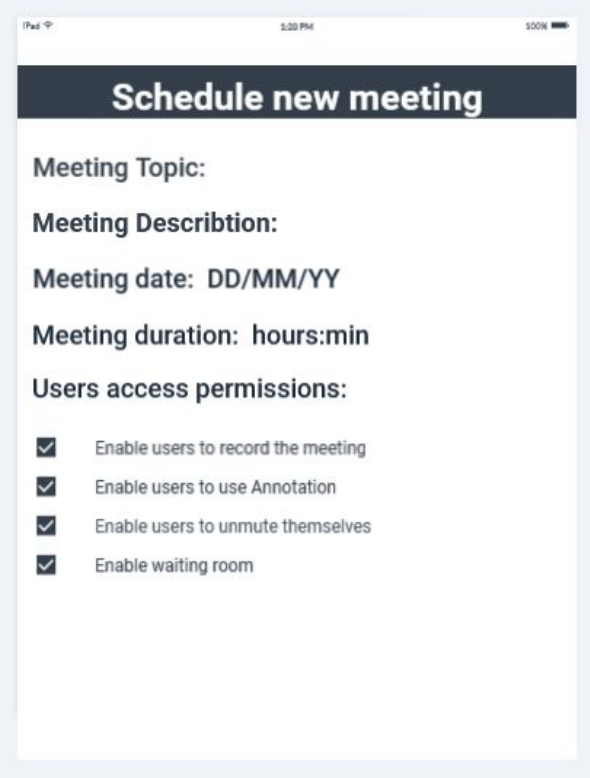

Schedule new meeting
Meeting Topic:
Meeting Describtion:
Meeting date: DD/MM/YY
Meeting duration: hours:min
Users access permissions:
Enable users to record the meeting
Enable users to use Annotation
Enable users to unmute themselves
Enable waiting room

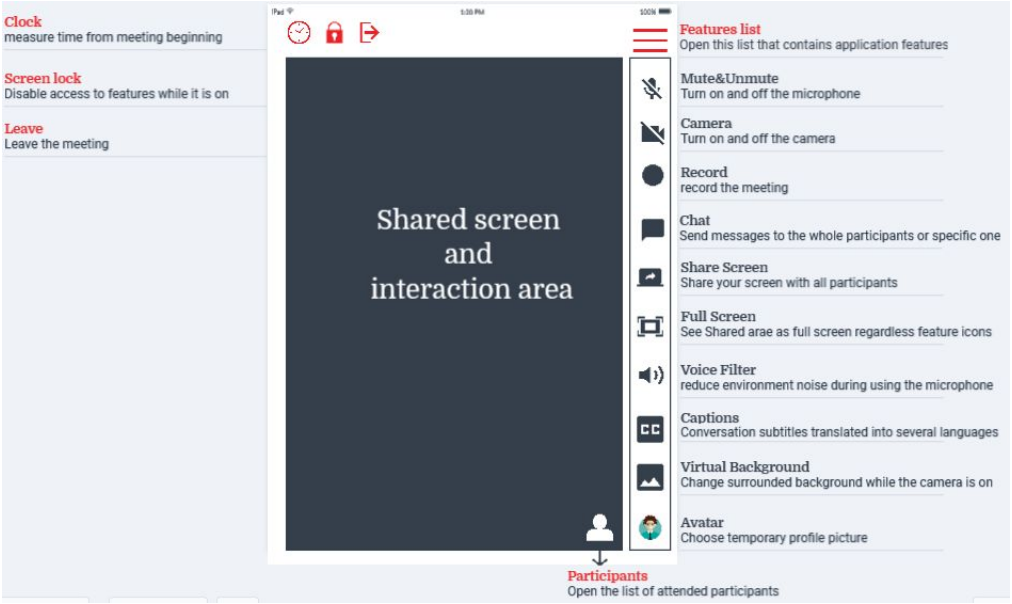

Record
record the meeting
Camera
Turn on and off the camera
Mute&Unmute
Turn on and off the microphone
4
Chat
Send messages to the whole participants or specific one
Share Screen
Share your screen with all participants
Full Screen
See Shared arae as full screen regardless feature icons
Clock
measure time from meeting beginning
Screen lock
Disable access to features while it is on
Leave
Leave the meeting
Shared screen and interaction area
Features list
Open these two lists that contain application features
Voice Filter
reduce environment noise during using the microphone
Captions
Conversation subtitles translated into several languages
Virtual Background
Change surrounded background while the camera is on
Avatar
Choose temporary profile picture
Participants
Open the list of attended participants

2. IPad

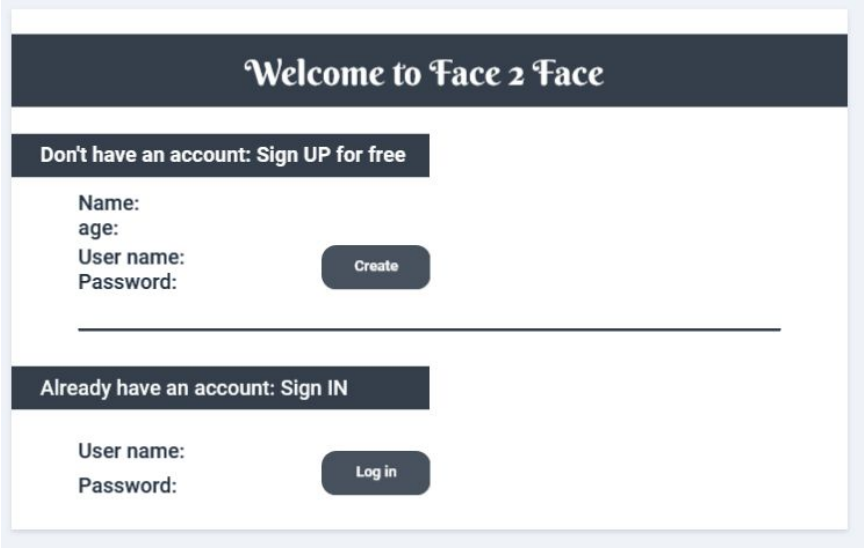

Welcome to Face 2 Face
Create new account:
Sign UP for free
Name:
age:
User name:
Password:
Sign Up
Already have one:
Sign IN
User name:
Password:
Sign In

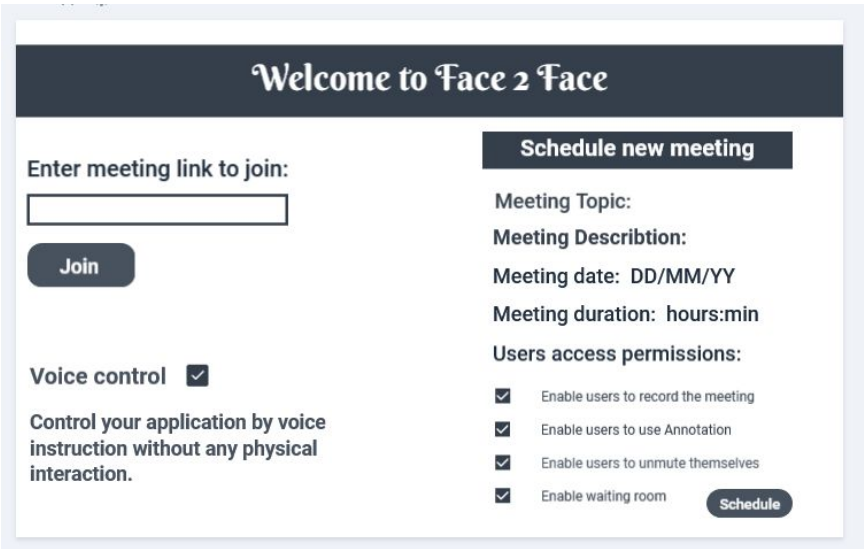

Welcome to Face 2 Face
Enter meeting link to join:
Join
Plane new meeting:
Schedule
Voice control
Control your application by voice instruction
without any physical interaction.


Schedule new meeting
Meeting Topic:
Meeting Describtion:
Meeting date: DD/MM/YY
Meeting duration: hours:min
Users access permissions:
Enable users to record the meeting
Enable users to use Annotation
Enable users to unmute themselves
Enable waiting room


Clock
measure time from meeting beginning
Screen lock
Disable access to features while it is on
Leave
Leave the meeting
Shared screen and interaction area
Features list
Open this list that contains application features
Mute&Unmute
Turn on and off the microphone
Camera
Turn on and off the camera
Record
record the meeting
Chat
Send messages to the whole participants or specific one
Share Screen
Share your screen with all participants
Full Screen
See Shared arae as full screen regardless feature icons
Voice Filter
reduce environment noise during using the microphone
Captions
Conversation subtitles translated into several languages
Virtual Background
Change surrounded background while the camera is on
Avatar
Choose temporary profile picture
Participants
Open the list of attended participants

3. Desktop


Welcome to Face 2 Face
Don't have an account: Sign UP for free
Name:
age:
User name:
Password:
Create
Already have an account: Sign IN
User name:
Password:
Log in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Control your application by voice instruction without any physical interaction.
Schedule new meeting
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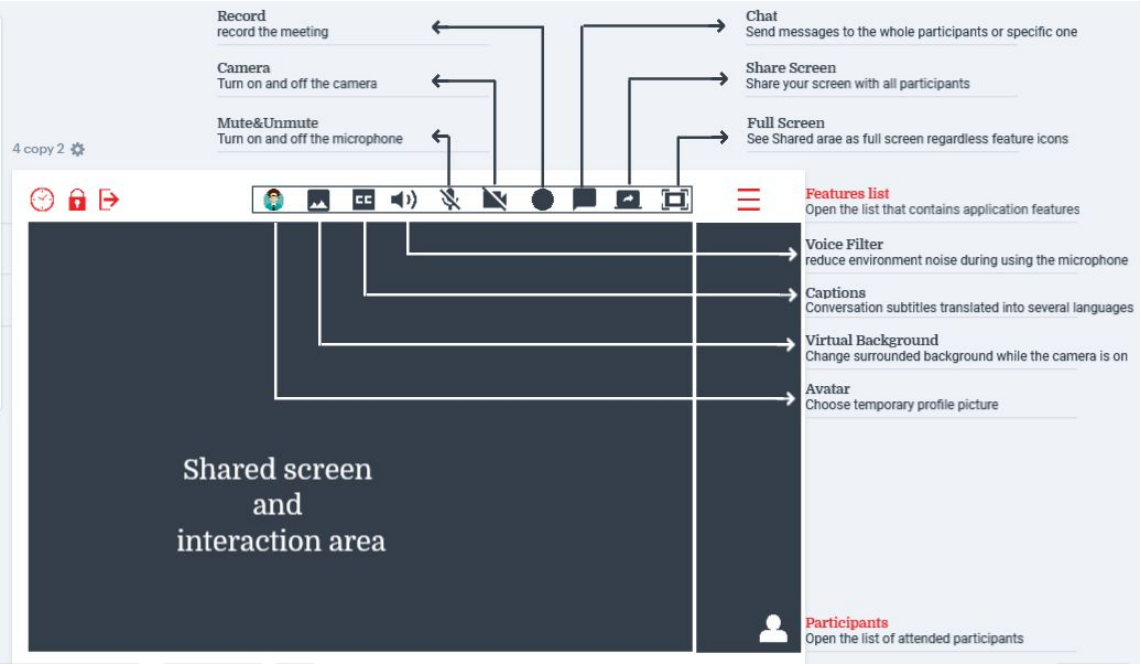
Meeting Describtion:
Meeting date: DD/MM/YY
Meeting duration: hours:min
Users access permissions:
Enable users to record the meeting
Enable users to use Annotation
Enable users to unmute themselves
Enable waiting room
Schedule


Record
record the meeting
Camera
Turn on and off the camera
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Turn on and off the microphone
Chat
Send messages to the whole participants or specific one
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Share your screen with all participants
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See Shared arae as full screen regardless feature icons
4 copy 2
Features list
Open the list that contains application features
Voice Filter
reduce environment noise during using the microphone
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Conversation subtitles translated into several languages
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Change surrounded background while the camera is on
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Choose temporary profile picture
Shared screen and interaction area
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Open the list of attended participants

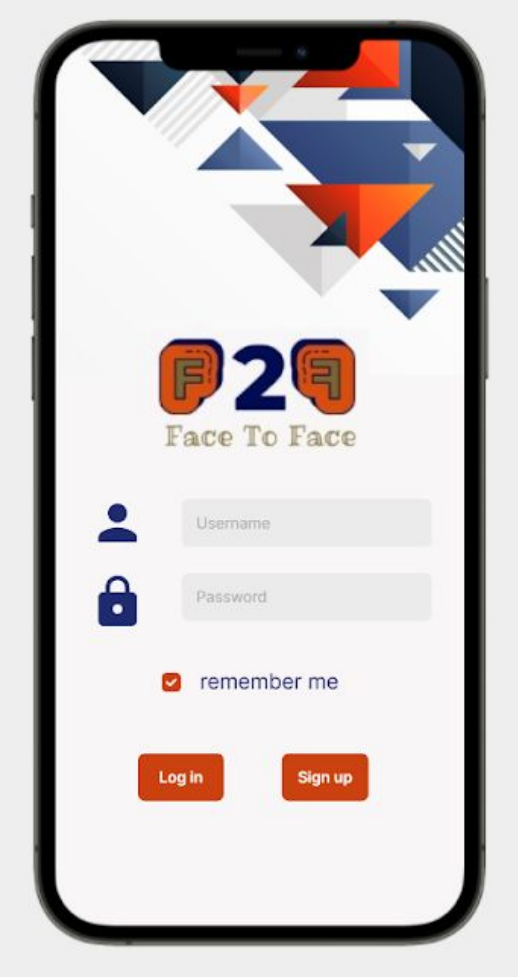
2.3.2. High-Fidelity Prototyping

What are the compromises you made here? (check the Compromises Tables in the lecture)

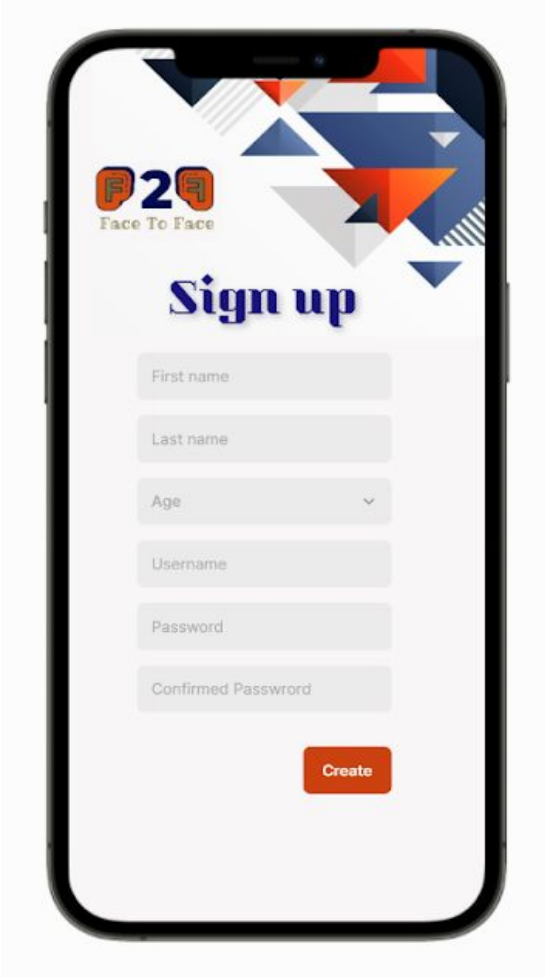
- Data .
- Functionality ,
- Interactivity .
- Spatial structure .

Show your high fidelity screens here, or a link to a video showing it in action

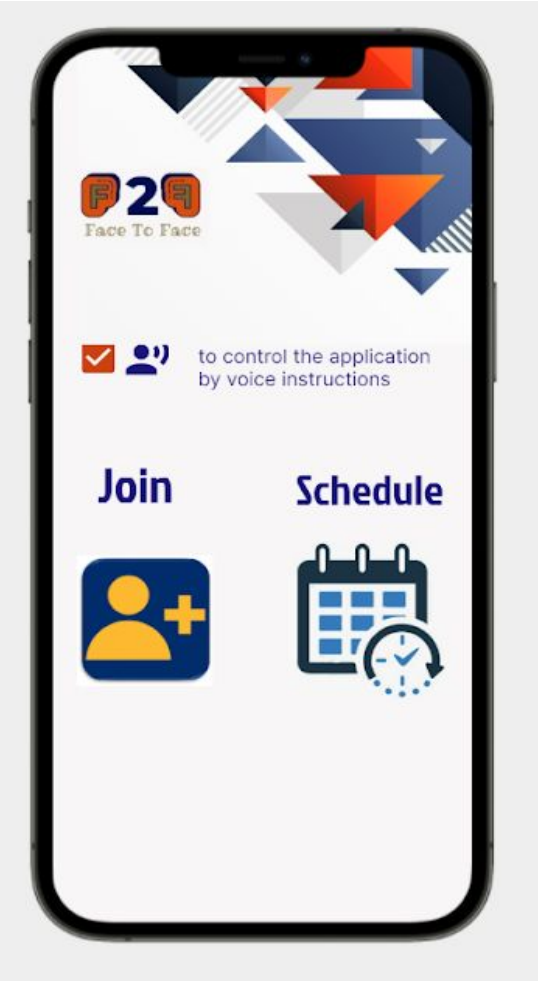
/* Starting page */



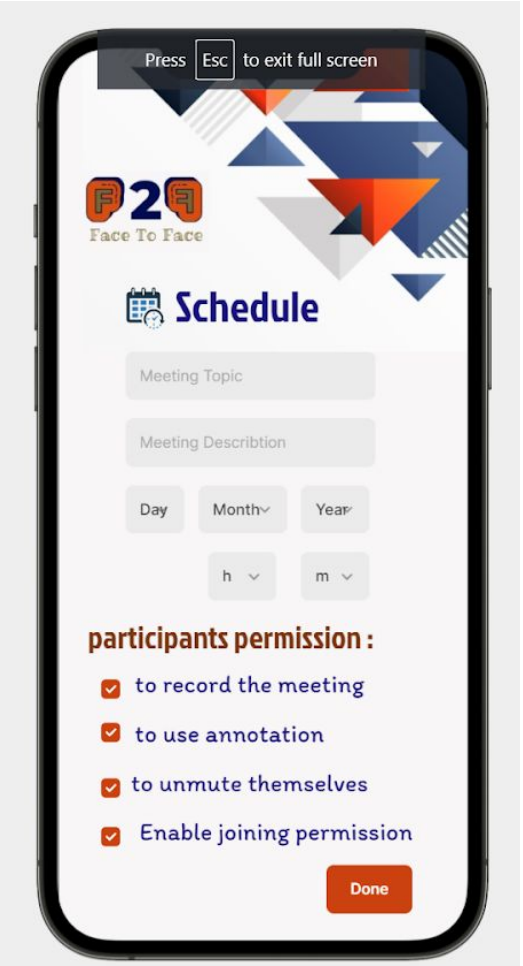
/* Sign up page */



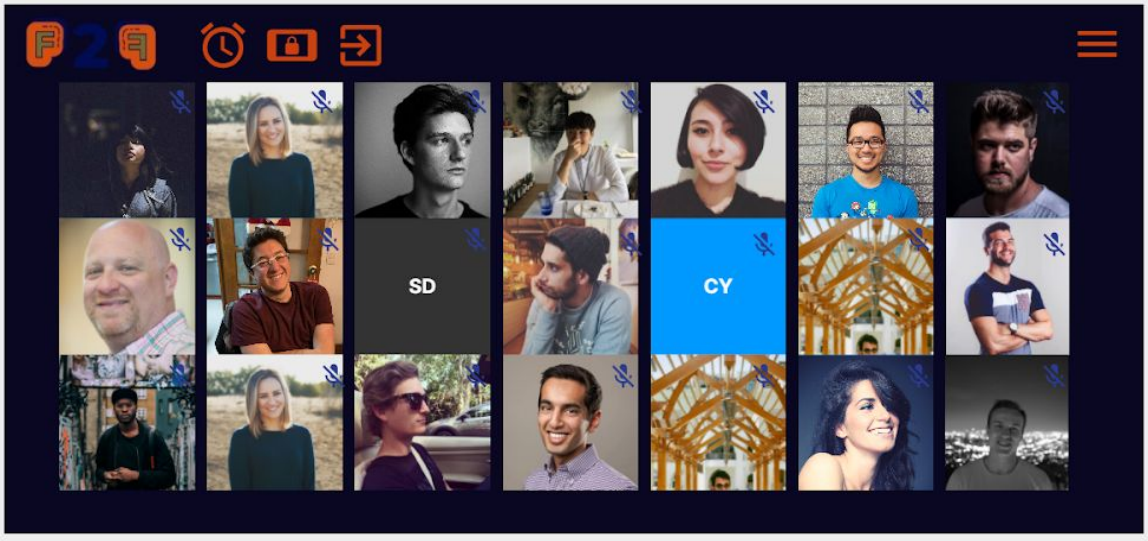
/* Main page */



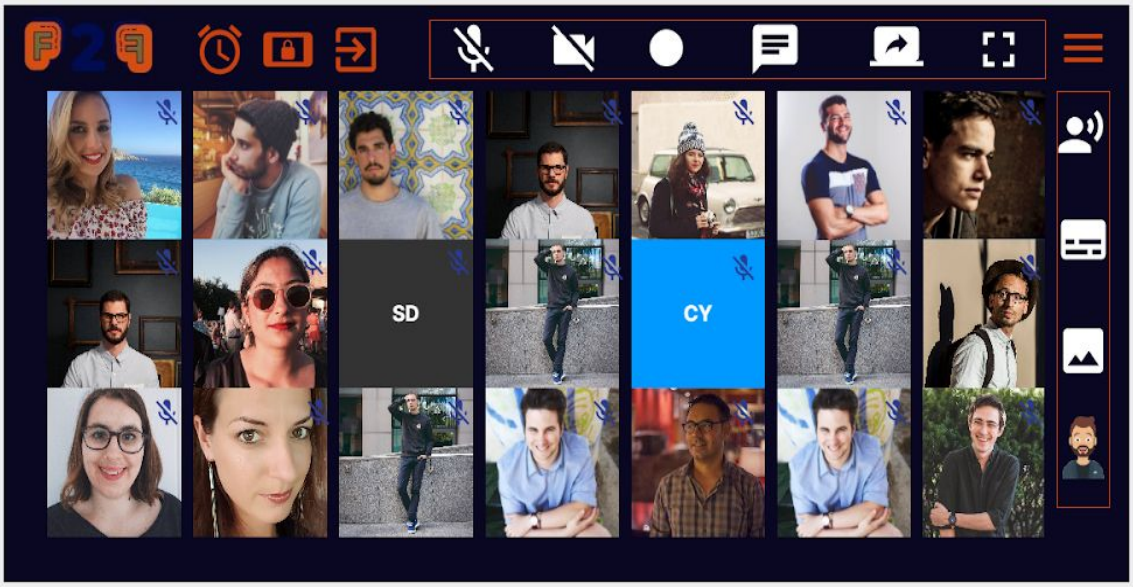
/* Schedule page*/



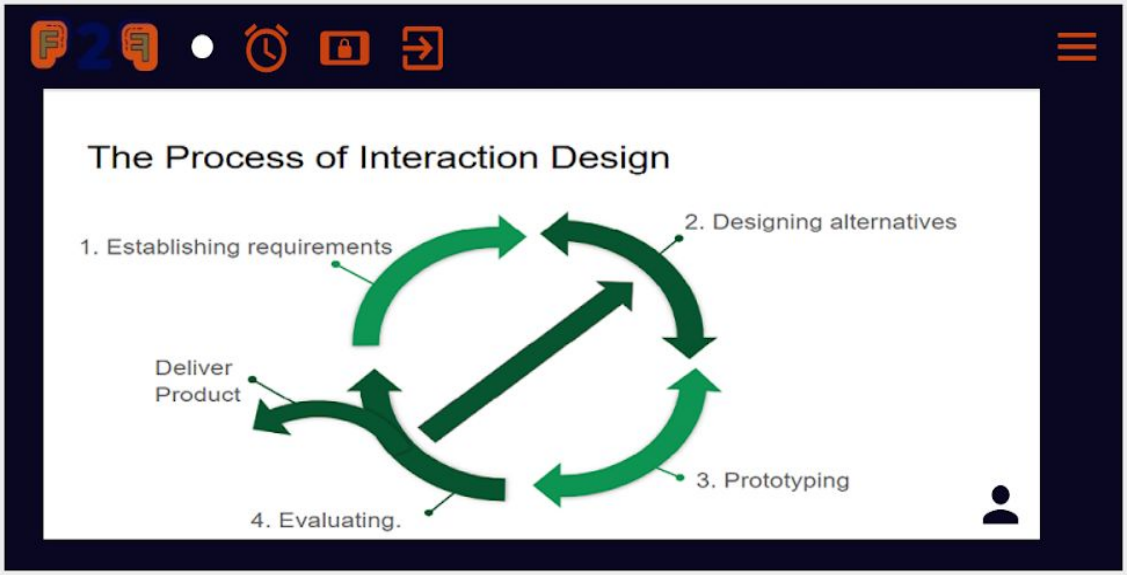
/* Meeting page */



/* After opening the setting icon */



/* After sharing screen and clicking record */



Video Link :

https://drive.google.com/file/d/1d_8WiSNirnHx6VKGXXMy4oqn4gtuNaK-/view?usp=sharing

2.4. Evaluation

2.4.1 Usability Measures

List the top 4 usability goals for the system.

Why did you choose them?

- Effectiveness : as the system provides its main task .
- Efficiency : as the system does what it is supposed to do accurately .
- Learnability : as we used all icons related to the realistic shapes to make it easier to use without manual .
- Utility : as the system permits users to do what they want or need .

Why did you exclude the other usability goals ?

- Safety : as we tried to handle the user faults said in data gathering techniques but not all of them .
- Memorability : as we put all the features in one window " meeting window " the user may face a problem to memorize them .

2.4.2 Methodology

Which method of the three ones studied did you use for evaluation?

Natural settings involving users

2.4.3 Evaluation Study

Explain how you conduct your evaluation study with real users?

Through holding online meetings in which our prototype is shared with the user, giving him control to deal with it and observing his interactions then taking his feedback about the application.

Who were the users involved in the evaluation?

School and college students, parents, teachers and graduated engineers.

2.4.3 Results

Summarize the results of your evaluation

- Interaction with the application is smooth
- New added features as captions and voice filter are very helpful and make this application unique
- Some modifications should be done to design including supporting dark and light mode