SA Certification - Part 3 (45 points)

Attached is a project provided by a customer implementing the scenario from part 2 (A). (Choose one: either Android or iOS)

Requirements:

1. Support Android and iOS.
2. Allow a maximum of 10 hosts in a room.
3. Allow hosts in the room to text chat with each other.
4. Prioritize audio, which needs to be clean and clear. (Video can be sacrificed if a host's uplink/downlink network has problems.)

Android Project: [Android Assessment](https://apprtcio-my.sharepoint.com/:u:/g/personal/shankara_agora_io/EXscyrjxEv5PlxhycW4trWUBlKhAsNF9PIo3kGOv9Skk-A?e=lAW0h6)

iOS Project: [iOS Assessment](https://apprtcio-my.sharepoint.com/:f:/g/personal/yaniv_agora_io/Ek6XMXveL9JHoDUE-xEhS7wBcD7FeWzdnFX1HU0eh7OWOQ?e=LGQXra)

1. Help the customer fix his code, get the project to build/compile and run, including joining a channel. Please make sure to include detailed steps, screenshots including Argus channel showing a user in a call. Make sure all the buttons work and show/explain how you tested them. Pay attention to the requirements details (15 points).
2. After running the code, you will see that the customer didn’t implement all the best practices as you suggested. Help the customer correct that. Pay attention to the requirements details

i. Review the code and show what APIs are wrong or missing for the recommended best practices per the requirements. Be very detailed on the APIs with relevant links and explain things to watch for. make sure you cover all the required best practices. (15 points)

ii. Implement the needed changes in the code and submit the project. Make sure to comment your code with your name. Add proper comments as to why/what the reason for specific code changes. (15 points)

Answer 1: Fixing the build/compiler error on the iOS project

A screenshot of a computer

Description automatically generated with medium confidence

* Missing Pod files.

A screenshot of a computer

Description automatically generated with medium confidence

* Adding required libraries to the application’s pod file, we need updated RTM and RTC libraries.

# Pods for Agora-RTC-iOS

pod 'AgoraRtcEngine\_iOS'

# Pods for Agora-RTM-iOS

pod 'AgoraRtm\_iOS'

Now run:

pod install --repo-update

Text

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* Project complaining duplicate frameworks. Fixed by removing, one of the duplicate AgoraRtcKit.framewords that was not under the frameworks folder.

Multiple commands produce '/Users/amarchitimalli/Library/Developer/Xcode/DerivedData/17-Multistream-azwkvdjvesodqidbwgamvpotwzcd/Build/Products/Debug-iphonesimulator/17-Multistream.app/Frameworks/AgoraRtcKit.framework':

* Fix and add the right Project Id obtained from Agora Dev Console.

A screenshot of a computer

Description automatically generated with medium confidence

* Project now successfully running on iOS simulator.

Graphical user interface, text, application, Teams

Description automatically generated

Answer 2: Implement best practices:

**Best practice 1: Enable Tokens for joining channel**

* Use Token to Join the channel.
* The user was not using any Token to join the channel.
* I have created a Temp Token from the console, and copied it into thy Keystore file for this APPID: fd41395843fd4224b818c09c7a7d88e9
* I have tested to join the channel with name “hello” without the token and was unable to join the channel.
* Once I copied the Token, and used it across to join the channel “hello” from the web test url along with the Temp Tike was able to join the session as broadcaster..

Graphical user interface, text

Description automatically generated

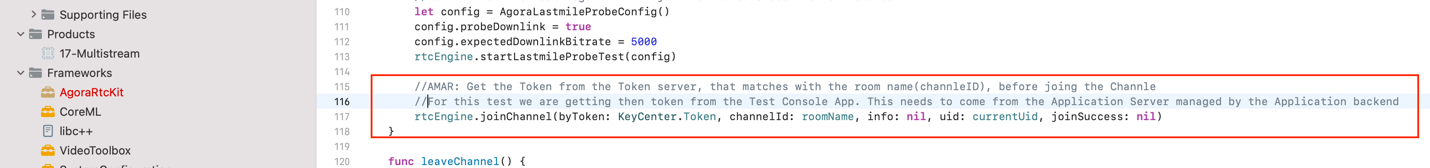
Graphical user interface, text, application

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Graphical user interface, text

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Here, the temp token is added to the KeyStore, that has been generated from the console, used in the mobile APP and browser and the users are now connected as seen below.



Connecting from multiple browsers. Using the same Token from the Console Agora.

Graphical user interface, application

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A collage of a person

Description automatically generated with medium confidence

1. **Best practice 2: Enable Agora Logs**

**Text

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1. **Best practice 3: Right video configuration and implement the Fallback options for remote and Local video, by setting the fallback to Audio only**
   1. Implement enable Dual streaming along with fallback options so that the sound is prioritized in case of bad N/W on the uplink or downlink side of the users
   2. This will prioritize Audio if the N/W goes bad.

Graphical user interface, text

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Finally, to Limit a Max of 10 hosts, we will need to keep a count on the RTC Channel MetaData, or on the RTM channel attributes, and see if the Max limit has been reached.

To Do:

* Add RTC to pod and SDK to the project – Done
* Add UI and create a chat room overlayed for Hosts to chat
* Add a Channel attribute, called **Host\_count** and check if the **Host\_count** is under 10, before letting a new host join the channel
  + Have a button that says join as Host another to join as Audience
  + When Join as Host is clicked, check the channel attributes if it has reached a Max of 10, if 10 show an error message Max Host and join them as audience role
* Only, now that we know if the use is Audience or Host,
  + If Host user, Show Chat UI to input text for Chat messages with send button
  + Show Audience, only show channel Chat