



Digital Youth Life - Health Platform

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- The DYL-HP application will be created in a desktop and mobile version.
- The application will enable users to contact specialists.
- Doctors and sports/yoga trainers represent specialists.
- Users represent people who will receive health and sports services.
- The users will have to register in order to receive services from this application.
- Users will be able to meet and talk with the relevant specialists through audiovisual connections.
- Meetings will be able to be recorded both on the side of users and the application.
- The application will create a quality assessment of specialists. This result will depend on many factors (number of patients treated, number of canceled visits, ethics, based on the analysis of recordings, etc.)

My tasks in the project concern:

- analysis and selection of a server application for establishing audiovisual connections between users and specialists.
- server application implementation and configuration.
- creating procedures for adding, registering and deleting users, as well as recording meetings.
- implementation of the created desktop application for mobile devices operating under the control of the Android system.

ф P2P vs SFU vs MCU

μ

Peer-to-peer mesh (messy) architecture:



P2P vs SFU vs MCU

Multipoint Conferencing Unit architecture:



P2P vs SFU vs MCU

Selective Forwarding Units architecture:





Conclusion:

- Each of these three types of implementations has its own advantages and disadvantages.
- P2P is the least efficient in terms of bandwidth and CPU usage, and it requires a high-speed Internet connection and is not as reliable as SFU or MCU.
- MCU is the most reliable, uses the least bandwidth, and requires a lot of resources, it is also the most complex to set up and maintain.
- SFU is more reliable and requires significantly less resourcess.

Asterisk was proposed as the server, which has the following functionalities:

- support for SIP, IAX, H.323, ADSI, MGCP, SCCP protocols,
- support for cards working in PSTN, ISDN, GSM and LTE networks,
- audio (MCU) and videoconferences (SFU),
- voicemail,
- call recording,
- saving call information,
- call queuing support,
- IVR (interactive voice response) support.





Browser Phone¹ was selected as a web application designed to work with Asterisk PBX. This application does not use any cloud systems or services and has the following features:

- AGPL-3.0 license, fully featured browser based WebRTC SIP phone for Asterisk,
- SIP Audio and Video Calling,
- 3rd Party Conference Call,
- Call Recording (Audio & Video),
- Screen Share during Video Call,
- Scratchpad Share during Video Call,
- Video/Audio File Share during Video Call,
- SIP (text/plain) Messaging,
- Works on: Chrome (all features work), Edge (same as Chrome), Opera (same as Chrome), Firefox (Most features work), Safari (Most feature work),
- Asterisk SFU Including talker notification and Caller ID.









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- implementation of the created desktop application for mobile devices operating under the control of the Android system (at the moment, the mobile application, based on the WebView component, allows you to make calls using the Browser Phone web application),
- integrate the Browser Phone or native VoIP Android client (this needs a lot of additional work) with the main application.



Thank you for your attention

