

FCT

Fundação para a Ciência e a Tecnologia
MINISTÉRIO DA EDUCAÇÃO E CIÊNCIA

FCCN

Computação
Científica Nacional

WEBTUT

WebRTC in context application

TF-WEBRTC

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- Challenge
 - To demonstrate WebRTC as a viable technology today
 - NRENs and Universities
 - To test “how hard can it be?”
 - What can it be done within 3 months?
 - To create a product useful for the community
 - In context communication
- Brainstorm Result: **Web Tutoring Application**

- Goals:
 - WebRTC based
 - Easily integrated with current webpages
 - Accessible to anyone (professor, student, staff)
 - EduGAIN integrated
 - TURN federation use case
 - Multi-language support
 - Focused on video, but extendible to other tools
 - Logging facilities for data extraction
 - Ready before the end of January
- Resources
 - Rui Ribeiro (20%)
 - Stefan Otto (20%)
 - Mészáros Mihály (<10%)

Analysis

- Define use cases
 - Teacher/Student
 - Helpdesk/Users
 - Doctor/Patient
 - Expert/Learner
- Set features
 - 1-to-1
 - Queue
 - Embed mechanism
- Review libraries available
- Set data structures

UI/UX Design

- Mockups
- Usage tests (UX)



Mockup
walkthrough


Implementation

- Development environment setup
- Production environment setup
- Firewall!
- SSL Certificates
- EduGAIN Setup
- HTML, PHP, NodeJS
- Translations


WebTUT Home WebTUT Login Language

WebTUT

WebTUT is a "Tutoring Application", where a teacher can "publish" a websnippet beside their on-line course or content and the student uses that to access the tutoring. The application provides a teacher interface that he can use from any device to talk with their students, allows him to define the tutoring time window, get information about the queued students and statistics about the sessions.



Create new WebTUT



Enter WebTUT as a teacher



Demo integration

1

Setup WebTUT (Teacher)

- Access WebTUT Website
- Change Language
- Create WebTUT
 - Login
 - Configure WebTUT
 - Set messages
 - Publish WebTUT on website
- Logout

2a

Teacher waits for Students

- Access WebTUT Website
- Access WebTUT
- Open Teacher interface


2b

Student Contact Teacher

- Access Class Website
- Get Queue Information
- Call Teacher

- HTML
 - Bootstrap
 - JQuery
- PHP
 - SLIMFramework
 - IDIORM
 - TWIG
 - SimpleSamlPHP
- NodeJS
 - PeerJS



- **Firefox and Chrome behave differently, test both!**
 - **Mobile/tablet UI interface is different, must go beyond responsive.**
 - **NodeJS server crash silently, run with watchdog and monitor both.**
 - **Must have self view and sound bar to monitor, people won't realize that it is working otherwise!**
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- Mockup before any coding
- Don't code alone and use Git!
- Use as much “standard” code as possible
- EduGAIN isn't as straight forward
- You have to push the team to make language translations
- Be aware of Timezones and “working habits”!
- Use GEANTS TURN's Service! It Rocks!

- Clean up code, add GPL License and make it available on GitHub
 - Extend developer community
- Review and remake server code
 - Move application communication from REST against PHP to JSON over WS provided by NodeJS
- Add mail messages and alerts
 - If not on-line, teacher gets notified once a student enters
- Review queue behavior policies
 - Automatic student selection, open/close queue functionality
- Review information presented to user
 - Embed information and in session interface
- Review Mobile/Tablet usage
 - Further UI/UX tests using these devices
- Local Login / User management
 - Login, register, renew password interface
- Data processing
 - Nice graphs and admin data
- Dissemination
 - New logo? Push GÉANT & NRENs to use it?



- **Goals:**
 - **WebRTC based**, supported by PeerJS library
 - **Easily integrated with current webpages**, as easy as copy paste a link or a <script> snippet
 - **EduGAIN integrated**, thru the Portuguese NREN
 - **TURN federation use case**, very easy integration
 - **Multi-language support**, many others can be added
 - **Focused on video, but extendible to other tools**, chat feature added
 - **Logging facilities for data extraction**, data logging virtually to every event within the application.
 - **Ready before the end of January**, 4th Jan first functional version, 3rd Feb registered on EduGAIN, announced on Symposium.
- **Resources**
 - Rui Ribeiro (6 weeks work)
 - Stefan Otto (4 weeks work)
 - Mészáros Mihály (1 week work)

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