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Article

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## Using FHIR to Interact with Natural Language

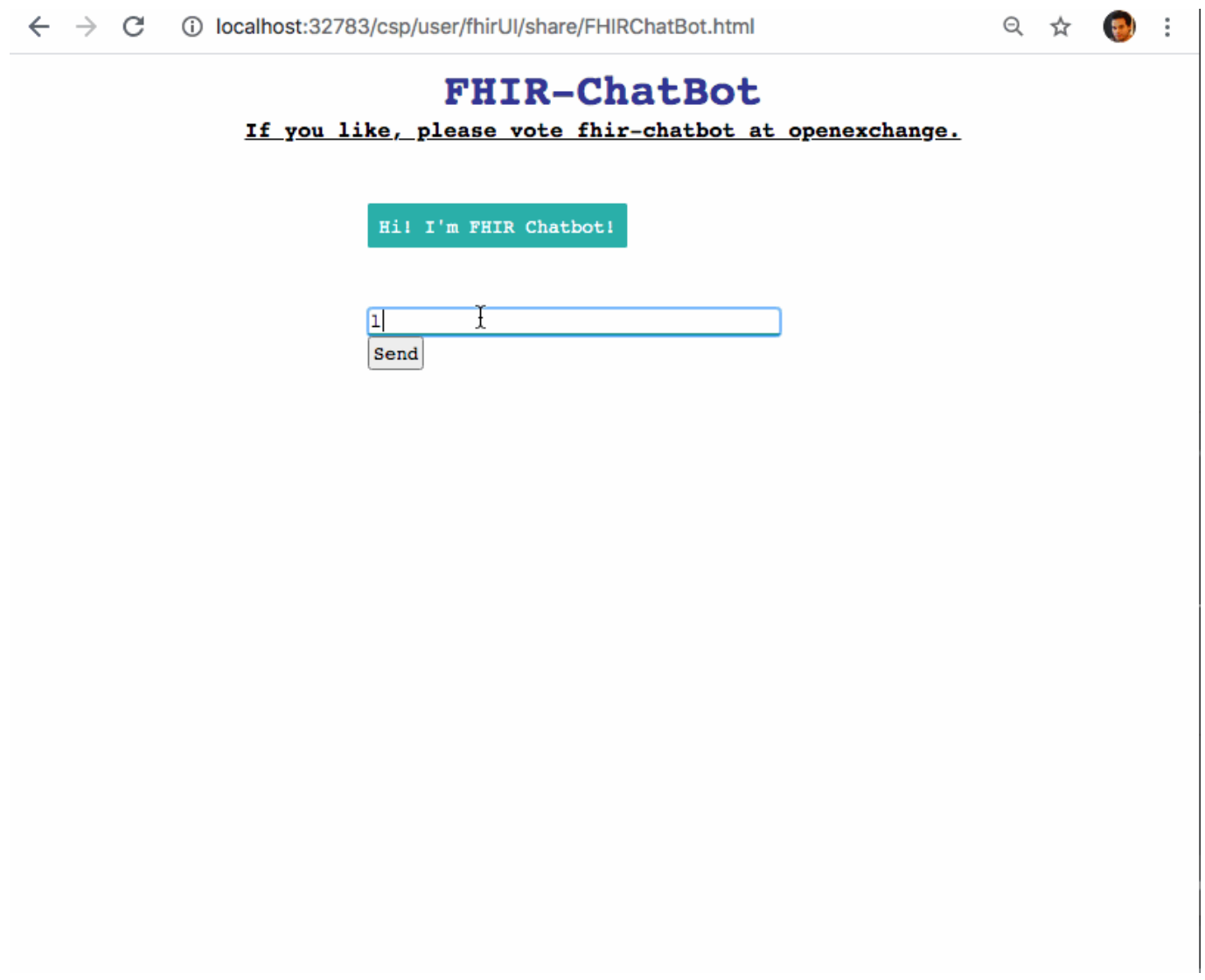
### Whats NLP Stands For?

NLP stands for Natural Language Processing which is a field of Artificial Intelligence with a lot of complexity and techniques to in short words "understand what are you talking about".

### And FHIR is...???

FHIR stands for Fast Healthcare Interoperability Resources and is a standard to data structures for healthcare. There are some good articles here explaining better how FHIR interact with InterSystems IRIS.

### My Solution



The screenshot shows a web browser window with the address bar displaying 'localhost:32783/csp/user/fhirUI/share/FHIRChatBot.html'. The page content features a title 'FHIR-ChatBot' in a large, bold, blue font. Below the title is a line of text: 'If you like, please vote fhir-chatbot at openexchange.' in a smaller, bold, black font. Further down, there is a teal-colored message bubble containing the text 'Hi! I'm FHIR Chatbot!'. Below this, there is a text input field with a blue border and a cursor, containing the character 'l'. To the right of the input field is a 'Send' button.

## Chatbot to query FHIR

The most common approach in chatbots is use machine learning to train the model based in old conversations. But when the chatbot need to use "live" data the challenge is improved. If you already know how a machine learning model works, you know that in most of cases the trained model is a kind of "hardcore" application with all decision embedded inside. If you need more data without retraining the model you will need to create by yourself the integrations and put your mind to work part in machine learning and part in software engineering.

## First Approach

To show more about FHIR I have decided to first work on questions that a healthcare professional could do to a chatbot. And to do this I keep the software engineering simple, using just javascript and regular expressions to look for intentions and entities on the chat.

## Regular Expressions

This is my favorite subject in processing texts. Regex are a powerful way to work text and match patterns. With regular expressions I can search for what patient the person chatting wants to know about and what question or chart he wants to see.

If this article help you or you like the content vote:

This application is at the current contest on open exchange, you can vote in my application fhir-chatbot [here](#)

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