Databáze SRGS gramatik
s webovým rozhraním

Obsah

Zadanie

Studenti navrhnou a implementují webovou aplikaci, která bude umožnovat správu gramatik ve formátu SRGS a bude p#ístupná pomocí webového rozhraní a REST API. Data budou uložena v nativní XML databázi. Aplikace bude umož#ovat:

- p#ídání gramatiky,

- vyhledání gramatiky podle ko#enového pravidla,

- p#ídání pravidla do gramatiky.

Teória

XML databáza

- Návod 1 [http://exist-db.org/exist/apps/doc/devguide_xmldb.xml]

- Návod 2 [http://cdi.uvm.edu/exist/devguide_xmldb.xml]

XML gramatika

- Špecifikácia [http://www.w3.org/Voice/]

- Teória [http://www.w3.org/TR/speech-grammar/]

- Teória - Wikipédia [http://en.wikipedia.org/wiki/Speech_Recognition_Grammar_Specification]
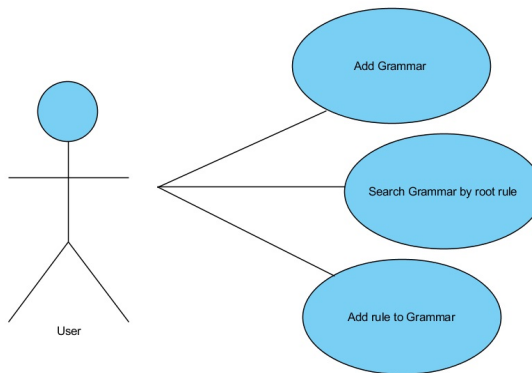
- Jednotlivé elementy gramatiky [https://msdn.microsoft.com/en-us/library/office/hh361653(v=office.14).aspx]
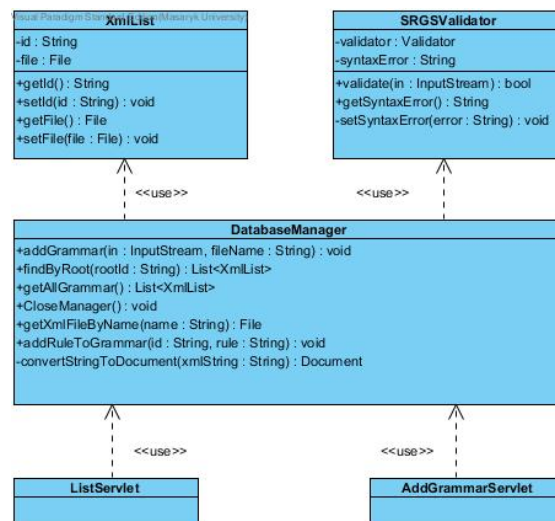
REST API

- Wikipédia [http://en.wikipedia.org/wiki/Java_API_for_RESTful_Web_Services]

- Tutoriál [http://rest.elkstein.org/2008/02/using-rest-in-java.html]

- Tutoriál + Konfigurácia [http://crunchify.com/how-to-build-restful-service-with-java-using-jax-rs-and-jersey/]

UML diagramy

Use Case diagram

Class diagram

Riešitelia

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Role

- Web + Rest API : Tomáš, Maroš

- XML databáza + SRGS : Svetlana, Richard

- Organizácia : Richard

- Dokumentácia : Maroš, Richard

Linky

- Github [https://github.com/fRandOmizer/SRGSDBWeb]

- FB skupina [https://www.facebook.com/groups/818604184890799/]

- Trello [https://trello.com/b/KjSXauQa/pb138-project]

Dokumentace

Servlets

ListServlet

Shows list of grammars and allows user to filter grammar by root rule or add rule do already existing grammar.

- @requestParameter grammars ListXmlList - containing required grammars

- @requestParameter success String - indicates successful operation

- @requestParameter error String - indicates not successful operation

- @requestParameter id String - unique grammar id - name

- @requestParameter rule String - rule to add to a grammar

- @requestParameter searchValue String - root rule for searching

- @requestParameter rule String - rule to add to a grammar

- @requestParameter fileName String - name of the file to download

- @jsp /grammarList.jsp

addGrammarServlet

Allows users to upload new grammar.

- @requestParameter file to upload

- @requestParameter success String which indicates successful operation

- @requestParameter error String which indicates not successful operation

- @jsp /addGrammar.jsp

Database Manager

DatabaseManager

Constructor, initialization of Database

void addGrammar(InputStream in, String fileName)

Add grammar to database

- @param in InputStream of the file

- @param fileName Name of the file

List findByRoot(String rootId)

Execute XQuery on database to find files that have desired root id

- @param rootId name of the root rule in grammar

- @return list of files where given root exist

List getAllGrammar()

Find all grammars with their rootId by XQuery

- @return list of files with root id

void CloseManager()

Close database and connection

File getXmlFileByName(String name)

Returns required XML file

- @param name name of the file

- @return File file

void addRuleToGrammar(String id, String strRule)

Add rule to given XML

- @param id root name

- @param strRule rule to add to file

- @throws AddRuleException

- @throws IllegalArgumentException

Document convertStringToDocument(String xmlStr)

Converts String to Document format (needed in addRuleToGrammar)

- @param xmlStr xml string to convert

- @return Document xml document

SRGSValidator

SRGSValidator()

Class constructor

boolean validate(InputStream in)

Check if file is in valid SRGDv1.0 format

- @param InputStream in file to be validated

- @return true if file is valid SRGDv1.0 file