



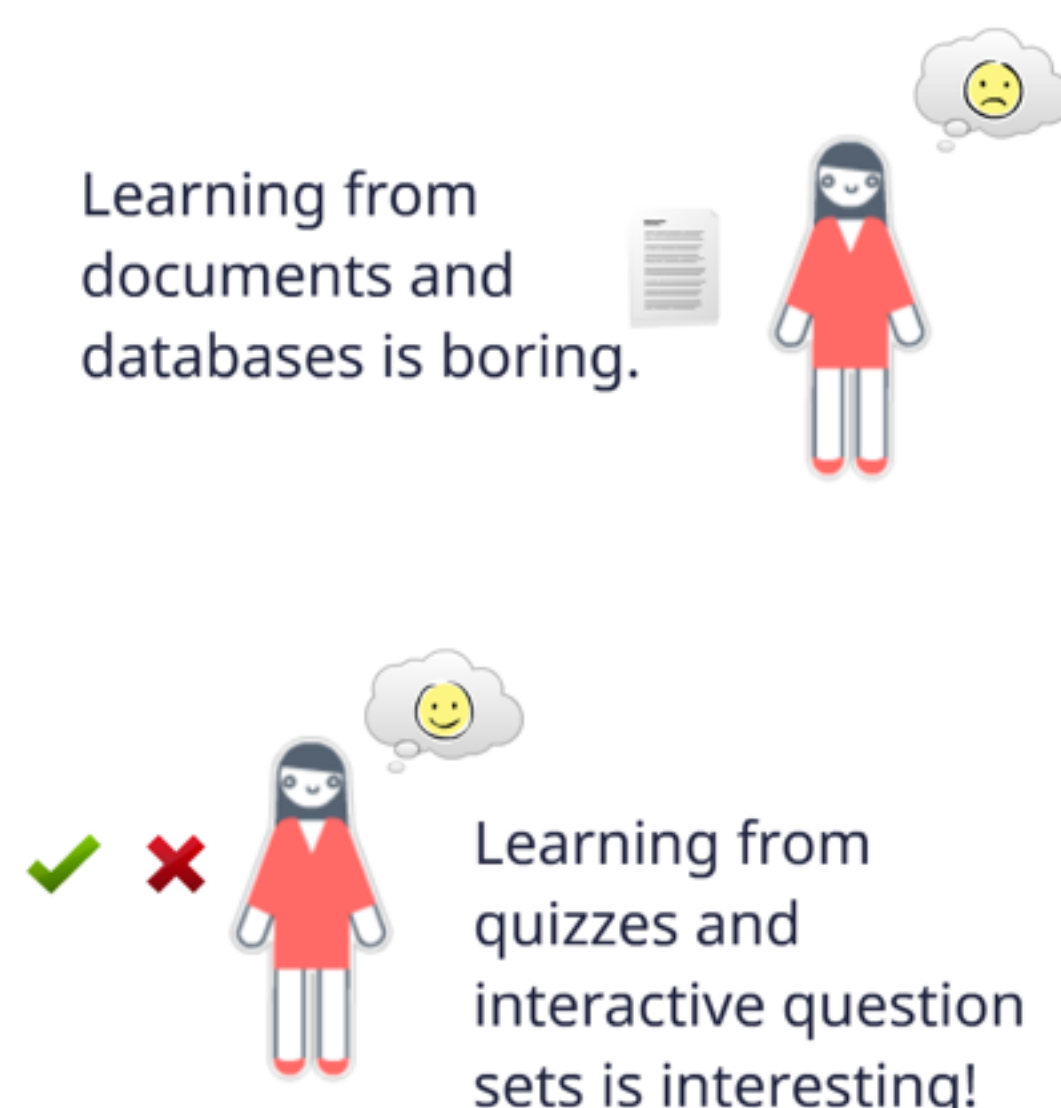
Generation of Quizzes and Solutions based on Ontologies - a Case for a Music Problem Generator



Overview

Generation of problem sets and quizzes forms an important part of education technologies. Although some systems have been built for quiz generation, they mostly focus on abstract logic and mathematical constructs. Knowledge in other domains is relational rather than propositional, and many systems use dedicated knowledge databases. We present a method to present this knowledge in the form of objective question sets and drills. We implement a four-fold approach - ontologies, propositional logic, similarity finding, and hierarchies - as a way to generate quizzes as well as to solve human generated problems of a similar nature.

Motivation



Dataset

Nodes

ID	Class	Label
id1	raga	Bahar
id2	thaat	Kafi

Edges

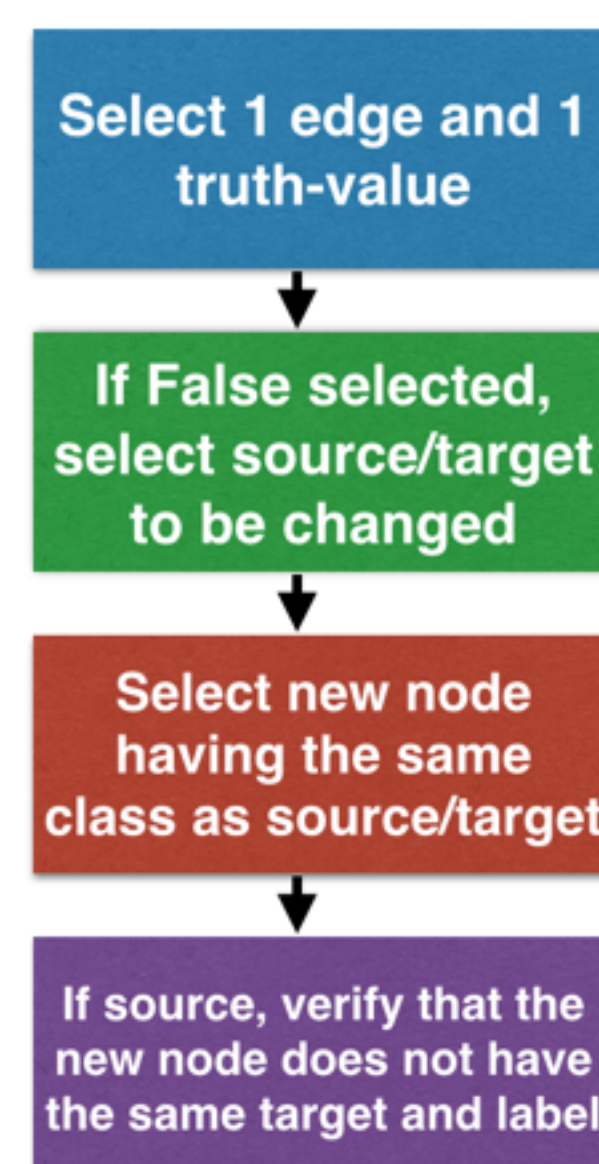
Source	Target	Label
id1	id2	thaat
id3	id4	vadi

Our music ontology

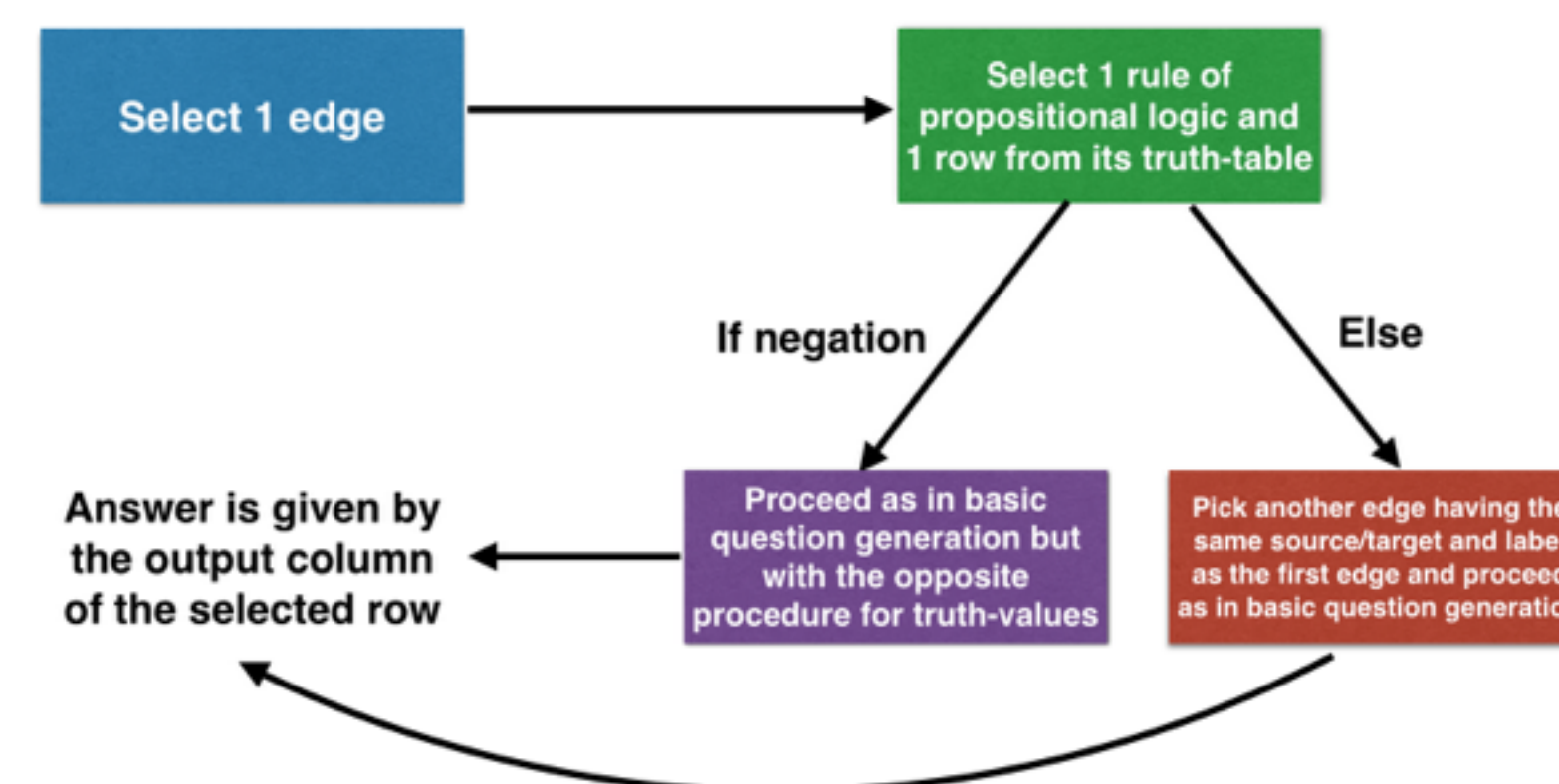


Four-Fold Approach

1. Ontologies and Hierarchies



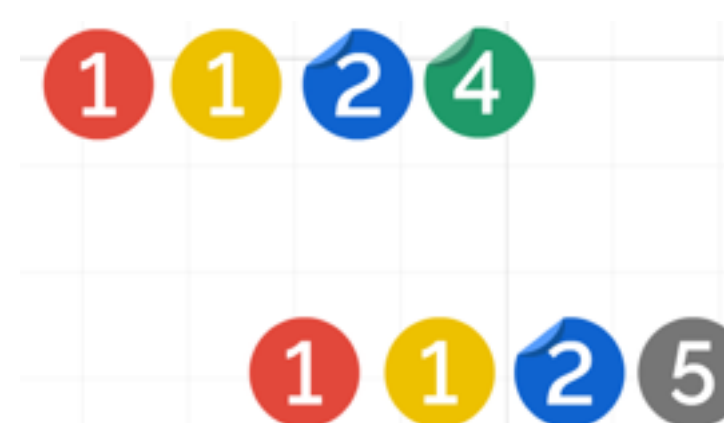
2. Logic Constraints



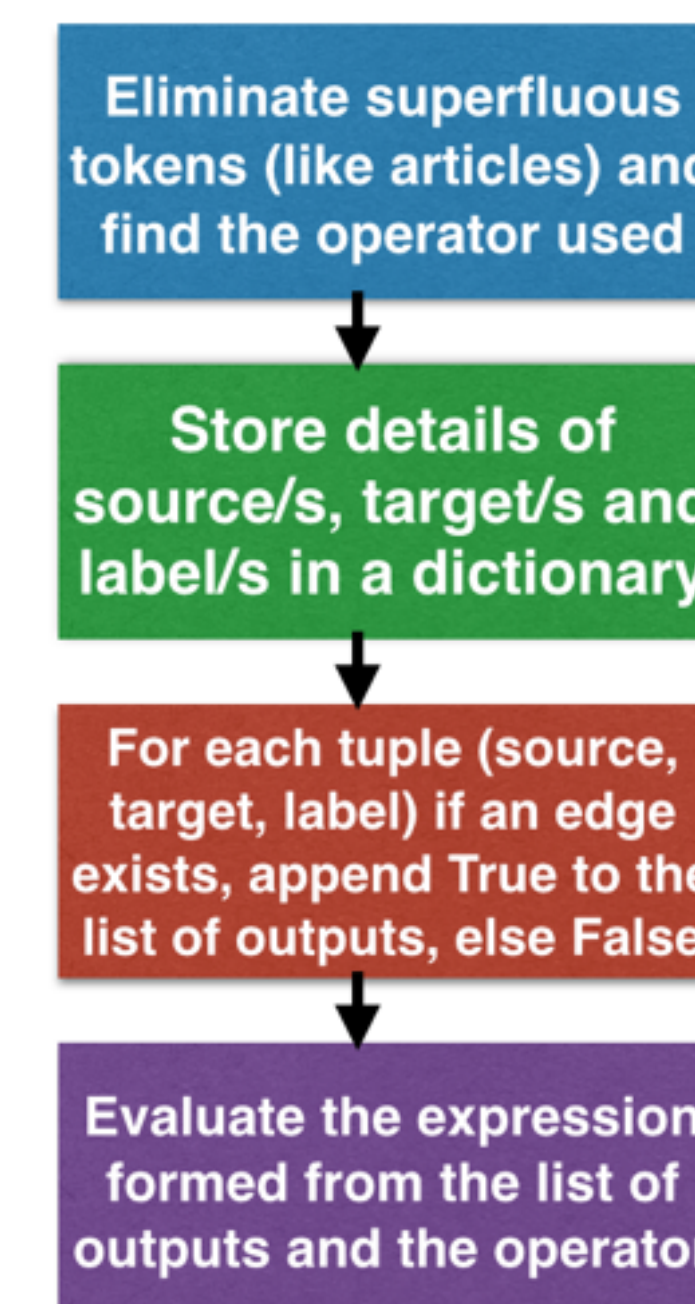
3. Knowledge relations

- 1) raga, thaata => svar
- 2) raga, jati => aaroh/avroh
- 3) raga, aaroh/avroh => svar
- 4) raga, aaroh/avroh=>thaata

4. Similarity Finding



Human Generated Problem Solving



Future Work

We plan to make this system more robust so that it can generate intuitive questions for any kind of database or knowledge base.



musicvirtuallab



@musicvlab



<http://music.virtual-labs.ac.in>

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