MUSICAL TUTOR SEARCH

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ABOUT THE PROJECT

- Musical tutor search is a web-based semantic search engine which enables users search desired musical tutor online efficiently.
PREVIOUS PROJECT VS. OUR PROJECT

Previous Project
- Project installed in local system
- Search musician who plays a specific instrument

Our Project
- Web-based search interface
- Search tutors who teach a specific instrument including tutoring price they would take, teaching level and contact information
IMPROVEMENT

- Web-based interface.
  - Enable users around the world to access the search engine.

- Fixed search box
  - Allow users to search tutor’s information both by inputting instrument and selecting instrument from the Instrument Class Tree
PROJECT DESIGN

- Data collection
  - Tutor data:
    - Contact music school students
    - OneStart->Classifieds->Jobs
  - Instrument data
    - Wikipedia
    - Google

- Tools used in our project
  - Protégé
  - Eclipse
Music Instrument Ontology

- Instrument ontology generated based on:
  - Previous instrument project
  - Wikipedia
<!-- sub class of wind -->
<!-- woodwind -->
    <rdfs:comment></rdfs:comment>
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#Class"/>
</rdf:Class>

<!-- sub class of woodwind -->
<!-- flute -->
<rdf:Class rdf:about="http://www.easaier.org/scottish-music-instruments/Flute" rdfs:label="Flute">
    <rdfs:comment></rdfs:comment>
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#Class"/>
</rdf:Class>

<!-- reed -->
<rdf:Class rdf:about="http://www.easaier.org/scottish-music-instruments/Reed-Instrument" rdfs:label="Reed-Instrument">
    <rdfs:comment></rdfs:comment>
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#Class"/>
</rdf:Class>

<!-- reed -->
<!-- double reed -->
    <rdfs:comment></rdfs:comment>
    <rdfs:subClassOf rdf:resource="http://www.easaier.org/scottish-music-instruments/Reed-Instrument"/>
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#Class"/>
</rdf:Class>
<rdf:Description rdf:about="#person/102">
  <mo:instrument rdf:resource="http://www.easaier.org/scottish-music-instruments/Piano"/>
  <vocab:Person_PersonID rdf:datatype="http://www.w3.org/2001/XMLSchema#int">102</vocab:Person_PersonID>
  <foaf:givenName>Lillian</foaf:givenName>
  <foaf:familyName>Chen</foaf:familyName>
  <rdfs:label>Lillian_Chen</rdfs:label>
  <foaf:price>30</foaf:price>
  <foaf:email>lianchen@indiana.edu</foaf:email>
  <foaf:level>beginner, intermediate, advanced</foaf:level>
  <rdf:type rdf:resource="http://xmlns.com/foaf/0.1#Person"/>
</rdf:Description>
SPARQL QUERY

```
PREFIX foaf: <http://xmlns.com/foaf/0.1#>
PREFIX mp: <http://purl.org/mpeg21/mp#>
PREFIX play: <http://www.easler.org/scottish-music-instruments/>
PREFIX rdf: <http://www.w3.org/2000/01/rdf-schema#>

WHERE {
  ?x mo:instrument ?instrument.
  FILTER (?instrument = play:Piano)
  ?x foaf:price ?price .
  ?x rdf:type foaf:Person.
  OPTIONAL (?x foaf:email ?email)
  OPTIONAL (?x foaf:level ?level)
}
ORDER BY ?price
```

<table>
<thead>
<tr>
<th>name</th>
<th>instrument</th>
<th>email</th>
<th>level</th>
<th>price</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Lillian Chen&quot;</td>
<td>play:Piano</td>
<td>&quot;<a href="mailto:llanchen@Indiana.edu">llanchen@Indiana.edu</a>&quot;</td>
<td>&quot;beginner, intermediate, advanced&quot;</td>
<td>&quot;30&quot;</td>
</tr>
<tr>
<td>&quot;Kate Brumer&quot;</td>
<td>play:Piano</td>
<td>&quot;<a href="mailto:kate@Indiana.edu">kate@Indiana.edu</a>&quot;</td>
<td>&quot;beginner, intermediate&quot;</td>
<td>&quot;35&quot;</td>
</tr>
</tbody>
</table>
DEMONSTRATION

- Musical Tutor Search
LIMITATION

- Tutor’s information is limited in Bloomington area. Users outside of Bloomington would not be able to benefit from this search engine.

- Due to technical issue, user input is extremely strict. If users didn’t input the instrument exactly as the instrument listed in the instrument class tree, there will be no search results.
FUTURE WORK

- Improve the search function
  - Users would be able to choose the price range, location and even learning level.

- Add new function
  - Users are able to submit their tutor advertisements and the system will automatically generate the data in RDF.
GROUP MEMBER CONTRIBUTION

- **Ying Wang**
  - Created RDF schema
  - Modify existing JSP and Java code

- **Ying-wan Ku**
  - Data collection
  - Created RDF and SPARQL query
  - Styled web interface

- Both of us worked together in creating instrument ontology, writing final report and preparing presentation slides
Question?

Thank you!!!