MUSIC SEARCH MANIA
(MUSIC SEARCH PORTAL)

S636 project
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Introduction

- Why music search portal?
  - Generic search engines

- What's special in Music Search Mania Portal?
  - Semantic web technology i.e. RDF dataset and SPARQL queries
System Architecture

Interface

Keyword: Andy Cummins (Artist)

ProcessingModule
[ArtistInfo, AlbumInfo…]

Connector

Musicbrainz’s sparql endpoint

Sparql query

RDF data

Yahoo music API

HTTP REST-based API call

XML data

Databas e

Artist Name: Andy Cummins ...

RDF data

RDF sparql endpoint

HTTP REST-based API call
Connector: Jena

Jena

- Java framework for building Semantic Web applications
- The Jena Framework includes:
  - A RDF API
  - Reading and writing RDF in RDF/XML, N3 and N-Triples
  - An OWL API
  - In-memory and persistent storage
  - SPARQL query engine

PREFIX mo: <http://purl.org/ontology/mo/>
SELECT ?artist
WHERE {?artist a mo:MusicArtist}

http://dbtune.org/musicbrainz/sparql
Sources: Musicbrainz

- Community music metadata
- Views:
  - Website
  - RDF export /endpoint

A graphical representation of some MusicBrainz RDF data about a "Portishead".
Ontologies used

map:<file:/home/moustaki/work/motools/musicbrainz/d2r-server-0.4/mbz_mapping_raw.n 3#>

rdfs: <http://www.w3.org/2000/01/rdf-schema#>
owl: <http://www.w3.org/2002/07/owl#>
event: <http://purl.org/NET/c4dm/event.owl#>
rel: <http://purl.org/vocab/relationship/>
lingvoj: <http://www.lingvoj.org/ontology#>
foaf: <http://xmlns.com/foaf/0.1/>
rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
tags: <http://www.holygoat.co.uk/owl/redwood/0.1/tags/>
db: <http://dbtune.org/musicbrainz/resource/>
geo: <http://www.geonames.org/ontology#>
dc: <http://purl.org/dc/elements/1.1/>
bio: <http://purl.org/vocab/bio/0.1/>
mo: <http://purl.org/ontology/mo/>
vocab: <http://dbtune.org/musicbrainz/resource/vocab/>
xsd: <http://www.w3.org/2001/XMLSchema#>
mbz: http://purl.org/ontology/mbz#
Musicbrainz: metadata

Following is the schema (list of properties) for artist (artist is subject):

- is mo:alter_ego of - artist (mo:MusicArtist)
- vocab:alias- string
- vocab:artist_quality - xsd: short
- vocab:artist_tag_count
- vocab:artist_type- xsd: short
- is rel:collaboratesWith of - artist (mo:MusicArtist)
- is mo:choir of
- bio:event - Birth (bio:birth)
- foaf:homepage
- rdfs:label - string literal
- is event:agent of - performance (mo:Performance)
- is mo:singer of
- is mo:performer of - performance (mo:Performance)
- is foaf:maker of - track
- foaf:member
- mo:musicbrainz
- foaf:name
- owl:sameAs
sparql query

PREFIX foaf: <http://xmlns.com/foaf/0.1/>
PREFIX bio: <http://purl.org/vocab/bio/0.1/>
PREFIX vocab: <http://dbtune.org/musicbrainz/resource/vocab/>

SELECT ?name ?alias ?homepage ?bdate
WHERE {
  <http://dbtune.org/musicbrainz/resource/artist/000002a0-8f8a-4320-ac61-7f60e8b44f32> foaf:name ?name.
  OPTIONAL {
    <http://dbtune.org/musicbrainz/resource/artist/000002a0-8f8a-4320-ac61-7f60e8b44f32> vocab:alias ?alias;
    foaf:homepage ?homepage;
    bio:event ?birth.
    ?birth bio:date ?bdate
  }
}
Connector: Jaxon

- an open source XPath library written in Java

```xml
<Artists start=1 count=23 total=23 errorCount=0>
  <Artist id="256352" rating="-1" name="Madonna" catzillaID="0" hotzillaID="1800038606" trackCount="2816" website="http://www.madonna.com/" url="http://new.music.yahoo.com/madonna" flags="124611">
    <ItemInfo>
      <Relevancy index="723"/>
    </ItemInfo>
  </Artist>
  <Artist id="198395817" rating="-1" name="Madonna Tassi" catzillaID="0" hotzillaID="0" trackCount="13" website="" url="http://new.music.yahoo.com/madonna-tassi" flags="2">
    <ItemInfo>
      <Relevancy index="415"/>
    </ItemInfo>
  </Artist>
  <Artist id="25254295" rating="-1" name="Madonna Parsons" catzillaID="0" hotzillaID="1809287259" trackCount="10" website="" url="http://new.music.yahoo.com/madonna-parsons" flags="8194">
    <ItemInfo>
      <Relevancy index="415"/>
    </ItemInfo>
  </Artist>
  <Artist id="25428930" rating="-1" name="Madonna Hip Hop Massaker" catzillaID="0" hotzillaID="1809287258" trackCount="26" website="" url="http://new.music.yahoo.com/madonna-hip-hop-massaker" flags="8194">
    <ItemInfo>
      <Relevancy index="415"/>
    </ItemInfo>
  </Artist>
</Artists>
```
User Interface

Search Mania

About Us

This is a music search portal. We search your queries on MusicBrainz and Yahoo music and give you all the information you want. Currently you can search for artists, albums and instruments by their names. In future we wish to add searches for chords, tracks by lyrics and also search by birthdate of an artist and/or release date of an album. We hope you will enjoy searching on music search mania.

Sources

MusicBrainz is a community music metadatabase that attempts to create a comprehensive music information site. You can use the MusicBrainz data.
Artist Search Example

Results - for Artist named michael [32 music-related artists]
1. Jeff Michaels
2. Michael Hanafin alias Mike Hanafin
3. Ilse Fromm-Michaels
4. Michael Hanselmann
5. Michael Vincent
6. George Michael & Mutya
7. Michael Laird Brass Ensemble
8. Michael Kelly Blanchard
9. Michael Jackson
11. Michael W. Smith [homepage: ]
12. Michael Bloomfield [homepage: ]
13. Michael Hedges [homepage: ]

Tracks made by the artist:
1. Miss McLeod's Reel / Greenfields of Rossbeigh

Collaborates with other artists:
1. Michael & Connie Hanafin

Michael Jackson
Artist's Homepage: http://www.michaeljackson.com/
Similar artists:
1. La Unión
2. Amistades Peligrosas
3. Presuntos Implicados
4. Sinsemilia
5. Cafè Quijano
6. Jamelia
7. Mecano
8. Miguel Bosé
9. Ella Baila Sola
10. Hombres G
11. El Canto Del Loco
12. Los Lobos
Album Search Example
Instrument Search Example

Results - for Instrument named piano [9]
1. Piano
2. Grand piano
3. Rhodes piano
4. Upright piano
5. Toy piano
6. Electric piano
7. Piano accordion
8. Fortepiano
9. Tangent piano

Rhodes piano
This instrument is subclass of: Electric piano

Electric piano
This instrument is subclass of: Piano
Future Work

- Search on basis of country or genre of artist
- Search artist/album using track name
- Integrate search for ‘chord’ using ‘A chord symbol service’ RDF dataset.