Music Warehouses: Challenges for the Next Generation of Music Search Engines

Metadata

- Acoustic information
- Cultural information
- Editorial information
- Physical information

Case study

Challenges

- Time series
- Standards compatibility
- Data Impeffection
- Precision aware retrieval
- Versioned irregular hierarchies
- Fuzzy hierarchies
- Many-to-many relationships

Data aggregation and query processing of end user requests

Query generators and user interfaces

Online Music Store, Personal Computer, Portable Music Player, Online Radio

Acoustic

Genre

Editorial

Physical

Genre

Cultural

seed

Rhythm

Pitch

Loudness

Melody

precision
time

time

original

dimension

branch 1

branch 3

branch 2

TRock

Pop Rock

1

60

10

30

50

Data model enriched with multidimensional navigation features

Notion of neighborhood, intersections, landscape, fuzzy borders

Primary and secondary itineraries with various lengths to fit the musical taste of the user

Aggregates for dimensional reduction

Reduce dimensionality using fused dimension rather than using projections.

Ex: Rhythm, pitch, loudness summarized into a fused dimension.

Complexity reduced, essence maintained.

Integration of new data types

Provide access to external data such as web sites and flash applications.

Specific extractors enabling analysis.

Ex: list of concerts

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