

A Proposal of information retrieval method based on TPO metadata

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Background

- Spreading the Internet coverage
 - Mobile phone, PDA, laptop PC...
 - Accessing to the Internet in Hot Spot
- Users have a lot of information
 - Clock : 14:26
 - GPS sensor : Latitude:34.41, Longitude:135.45
 - Schedule : 11:00~13:00, Meet the teacher

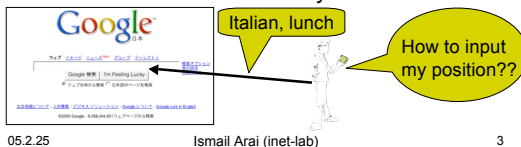
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A scenario of mobile computing

- Searching the information of restaurant
 - Time -> at noon (lunch)
 - Position -> around the current space
 - Occasion -> budget, lunch...
- A user hard to find some keyword



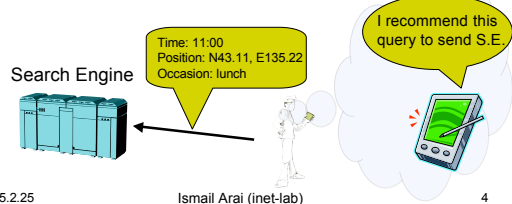
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Purpose of this research

- Reflecting a user's circumstantial information
- Supporting a user to input keywords which are hard to find in plain text



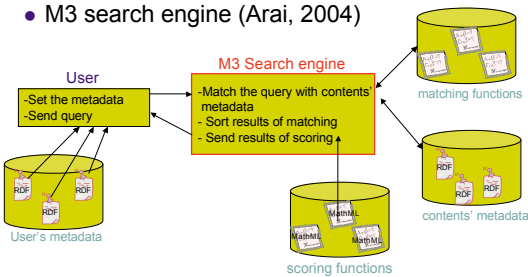
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A platform of information retrieval

- M3 search engine (Arai, 2004)



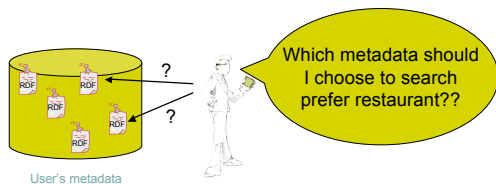
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A focus

- Query generation mechanism
 - Choosing suitable metadata for a user



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Related Work

- Context-Aware system
 - CONSORTS (Sashima at el., CARC, AIST)
 - aim at only location information
 - CoBrA (Chen at el., Maryland university)
 - adapting to semantic web technology (SOAP, RDF)
 - aim at devices (treating only sensor's context)
- User cannot recycle those metadata to other systems

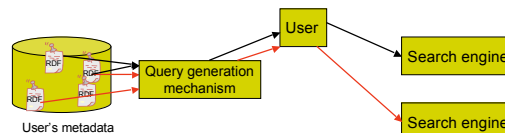
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Requirements

- A framework for recycle user's metadata for some portal search engine.
 - converting metadata
 - rule based
 - making a use of data mining techniques



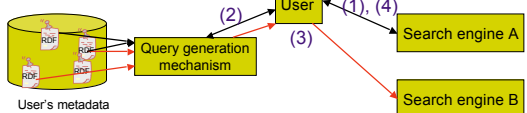
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A sequence of the proposal

- A user receives query requirements of a search engine
- A user send the requirements to query generation mechanism
- A user confirm the query and send it to the search engine
- A user gets the results from search engine



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A syntax of user's metadata

- Written in RDF (Resource Description Format)

- Current time
 - from a clock
- Current location
 - from a GPS sensor
- Schedule time
 - from iCalendar

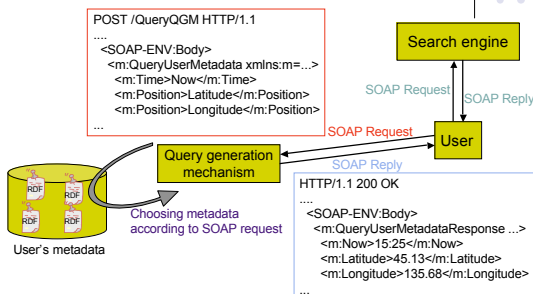
```
<?xml version="1.0"?>
<rdf:RDF
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:ut="http://hoge.naist.jp/classes/"
  <rdf:Description
    rdf:about="user@is.naist.jp">
    <ut:Time>
      <rdf:Description>
        <ut:now>15:25</ut:now>
        <ut:open>11:00</ut:open>
        <ut:close>19:00</ut:close>
      </rdf:Description>
    </ut:Time>
    <ut:Position>
      <rdf:Description>
        <ut:latitude>35.57</ut:latitude>
        <ut:longitude>135.57</ut:longitude>
      </rdf:Description>
    </ut:Position>
  </rdf:Description>
</rdf:RDF>
```

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Query generation mechanism



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Future Works

- Surveying data mining techniques
 - Removable method on the system
- Mounting a Query generation mechanism
 - To evaluate the load of processing in SOAP messaging

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Summary



- To realize information retrieval reflecting user's circumstantial information...
 - Supporting a user to input keywords
 - Proposing a framework for recycle user's metadata
 - Designing a Query generation mechanism