LUDWIG-
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MÜNCHEN

LFE Medieninformatik – Susanne Keck

Travel Route Recommendation

Diploma Thesis

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Motivation

• Limited knowledge of the city, but many different information sources

• Much effort for travellers to select and organize the preferred actitivties

• No overview provided to view different sights and their locations, no personal recommendations

• Route suggestions do not consider opening times
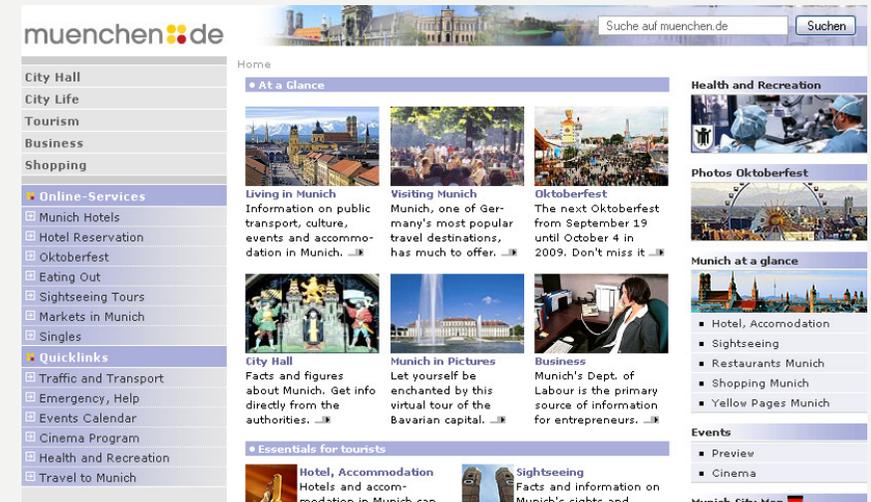
www.muenchen.de
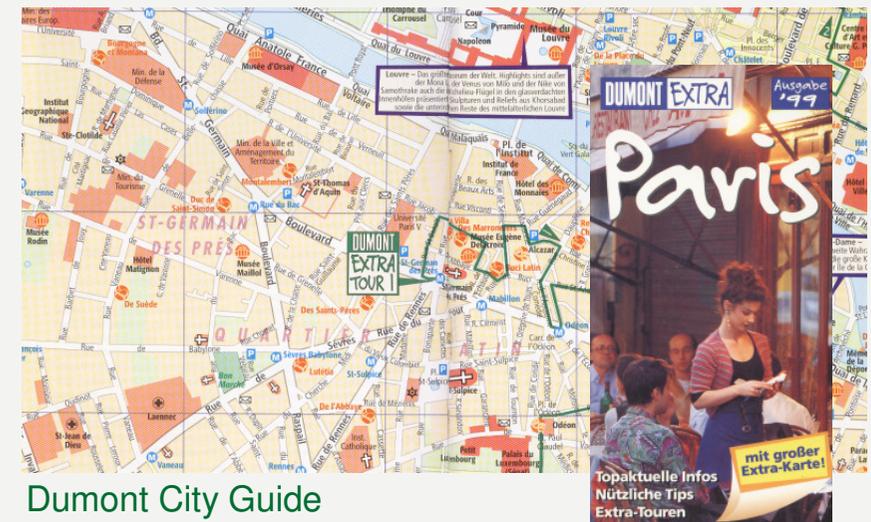
Dumont City Guide

Topic of the Thesis

• Online application that helps travellers to plan their city trips

• Combine information from different sources in one single application

• Recommend the user certain activities based on his own personal preferences

• Support the user in constructing routes for each day of the trip
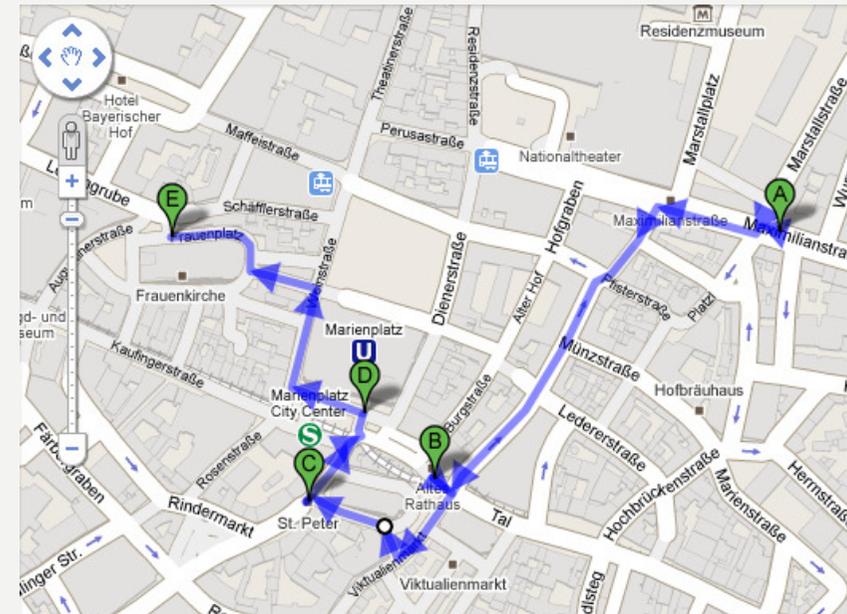
www.maps.google.com

Overview

- Related Work

- Expert Interview

- Online Survey

- Application Design

- Interaction Design

- Workflow

- Outlook

Related Work

• **Carolis (2007):** *MyMap - Generating*

personalized tourist descriptions

   • Mobile application

   • Recommendations based on user
   preferences and the user's current context

   • UI: map containing icons for objects of
   interest, list of all objects displayed on the
   map, detailed description of selected object

Carolis (2007)

Related Work

- **Sebastia (2008): *e-Tourism - a tourist recommendation and planning application***

  - Recommendation of sights and attractions according to the user's preferences

  - Let the user choose the sights he wants to visit

  - System constructs a tour plan telling the user when to perform which activities

  - No route provided, only time schedule for single activities

Sebastia (2008)

Expert Interview

• Interview with an employee of the travel agency „Singer Reisen"

• Identification of different customer categories and different motivations to travel

• Important factors for city travellers: opening times, photos, map, so called „Must Haves" of a city

• Non-important factors for city travellers: weather, exact routes for each day

Online Survey

• Participants: 100

• Age: 21-65 (average age: 27)

• Gender: 46% male, 54% female

• Travel frequency: 3 times a year

• Planning duration: 5 days (40% on planning sights to visit)

Online Survey

• Planning before the trip:
hotel, sights to visit

• Influence factors:
recommendations from others,
popularity

• Recommendation based on:
personal interests, typical
things for the city

Which things will you arrange during the city trip planning?
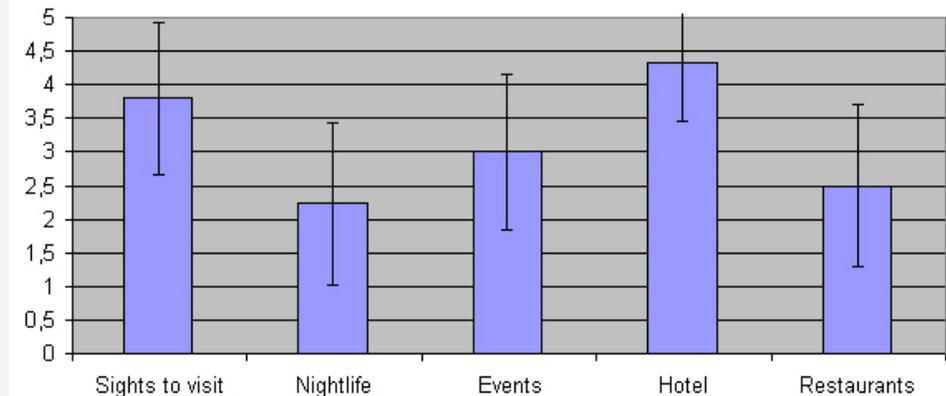
During the city trip planning, which factors influence your selection of sights?
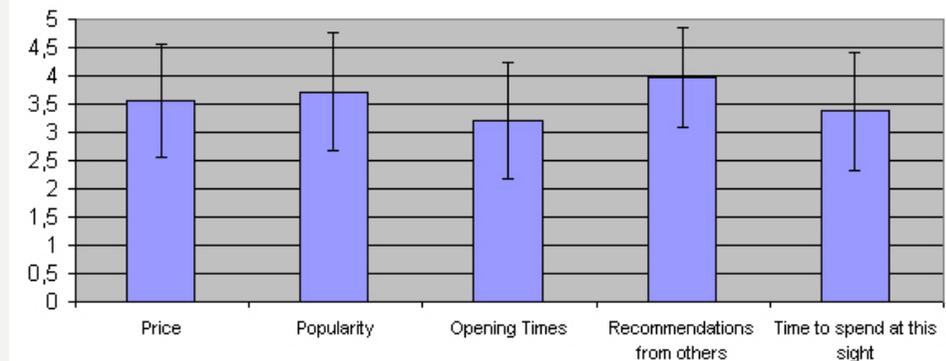
Online Survey

• User acceptance of filling out a short profile form

• UI visualization:
display with map vs. display with list

• Route importance:
very important, especially for female users

• Route visualization:
display in a map with both sights and exact route
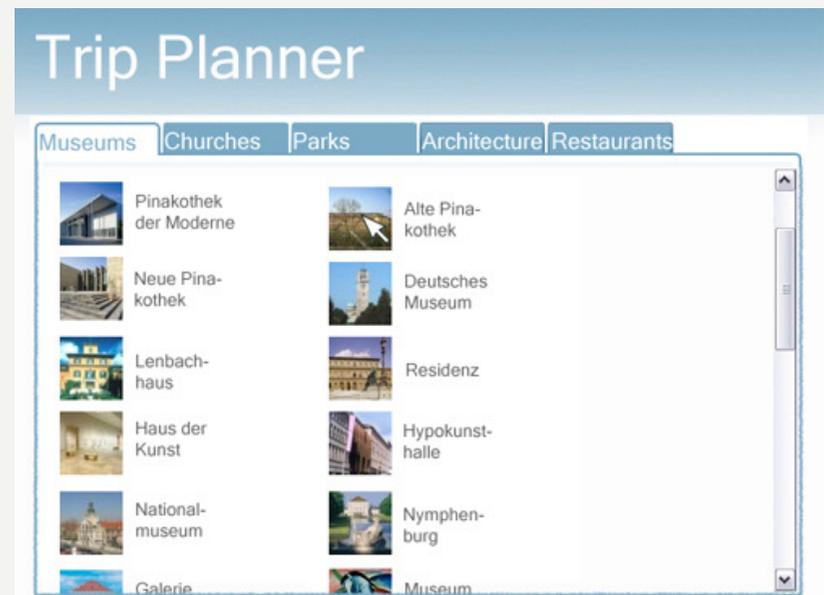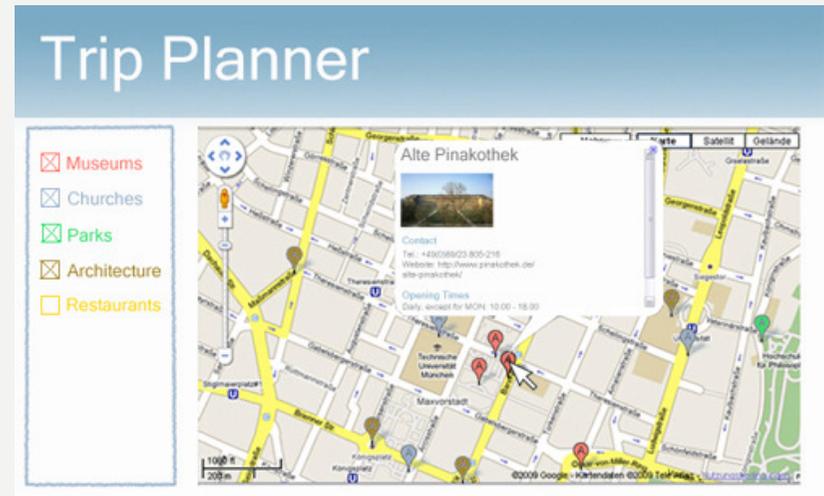
Main Sources

- **Yahoo Travel**

  (**www.travel.yahoo.com**)

  - Title, address, description

  - Opening hours, user rating, popularity

- **Google Maps**

  (**www.maps.google.com**)

  - Address, coordinates

  - Distance, duration

Sight Recommendation

- **User preferences**
  - Input form where the user has to rate different sight categories
  - Search for items according to the users preferences (content-based filtering)

- **History data (optional)**
  - Assume user preferences from history data, search for similar users (collaborative filtering)

Kang (2006)

Route Recommendation

- **Problem 1: Route Finding Algorithm**
  - System has to consider walking distances and opening times

- **Problem 2: User Interaction**
 - No reasonable way for the user to interact with the finished routes

- **Solution: Route Construction Support**
  - System suggests sights regarding the current time
  - User selects sights on his own
 - Route is constructed step by step
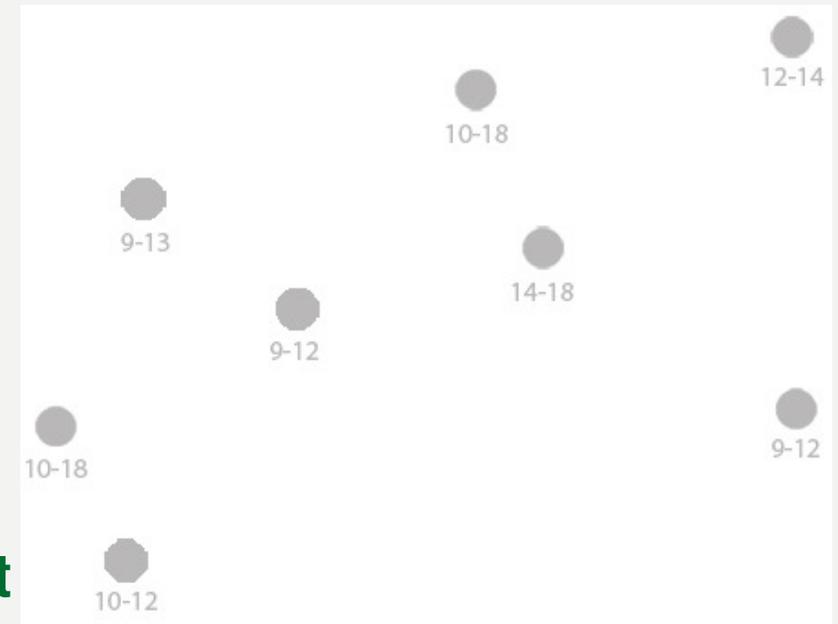
Interaction Design – Step 1
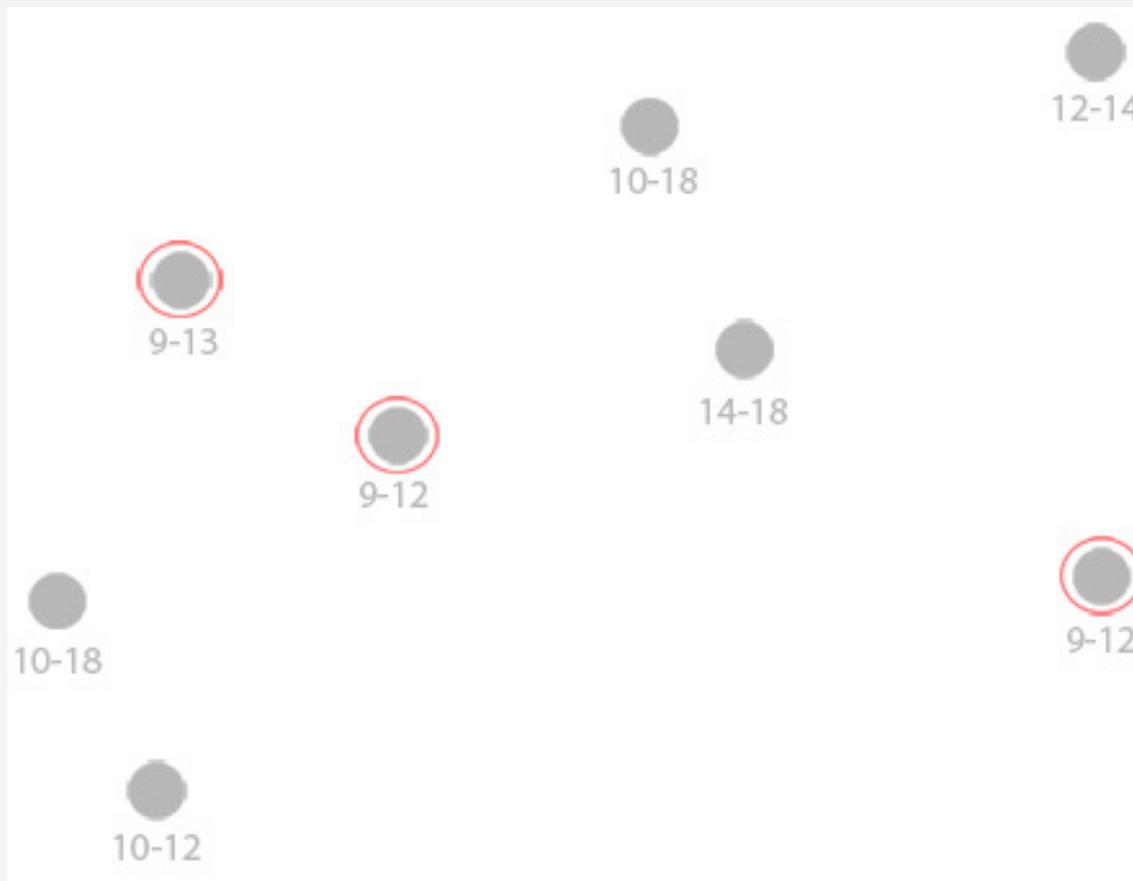
Time: 9 am

Interaction Design – Step 2
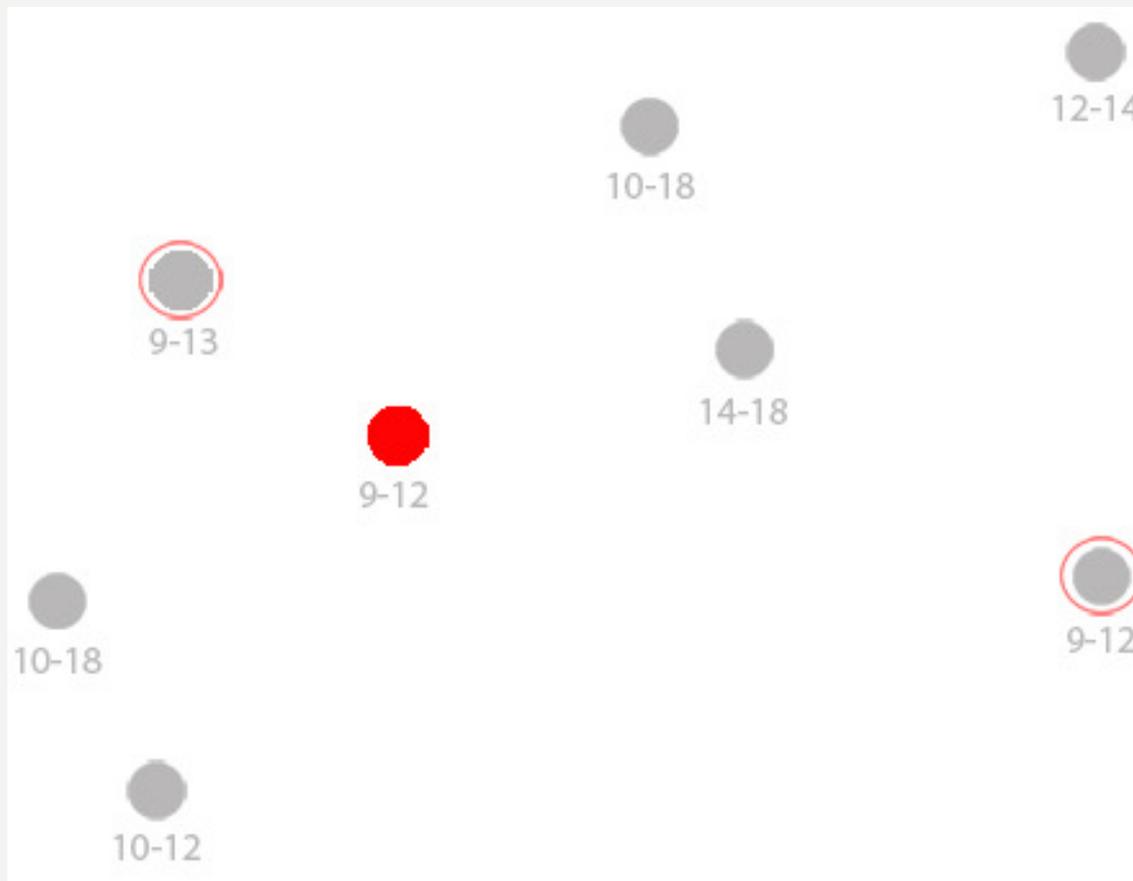
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Interaction Design – Step 3
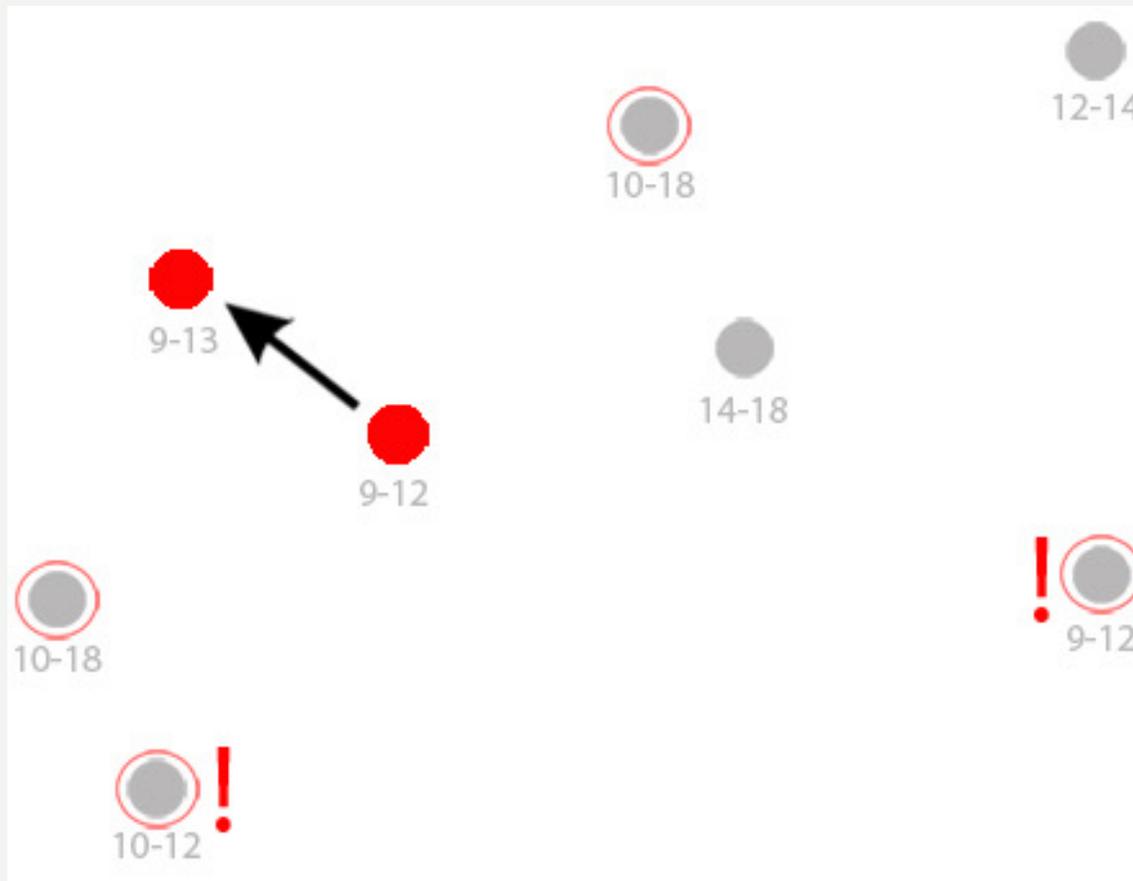
Time: 10.40 am

Interaction Design – Step 4
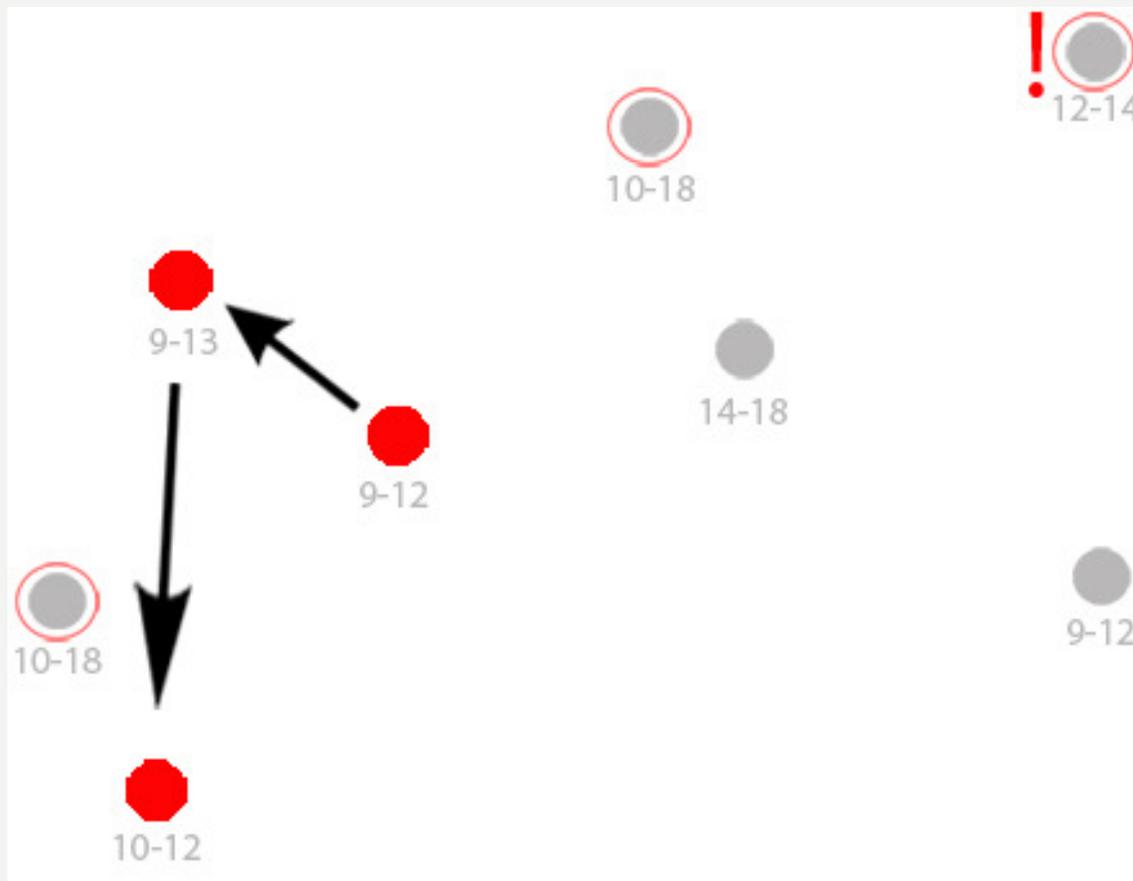
Time: 11.55 am

Workflow

• User Input:
user data, user
preferences, search query,
selection of items

• System Output:
recommendation of sights,
proposal for adequate
items, finished travel
routes
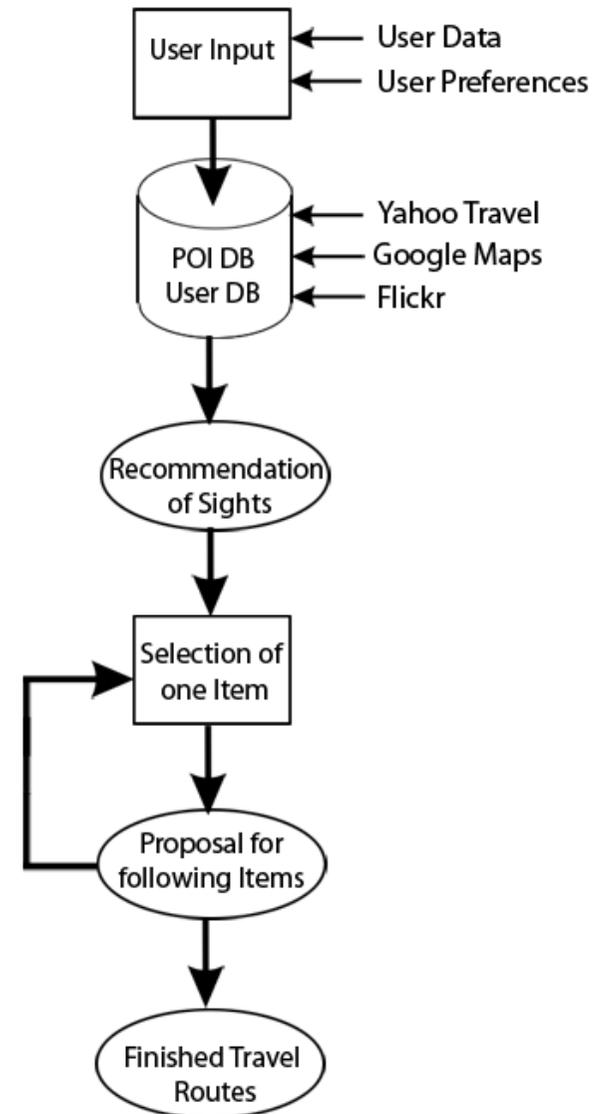
Outlook

• Analysis of Existing Travel Systems and Guidebooks

• Research on Related Work

• Expert Interview

• Online Survey

• Workflow and Design of System

• Implementation and Design

• User Study

• Formulation of the Thesis

Thank you for your attention!