

The Web Engineering 3

Introduction to Semantic Web

Lecture 1

Introduction to Semantic Web

Presented by
Prof. Khaled Wassif

Course Topics

- Introduction to the semantic web.
- Semantic web technologies and layered approach.
- Structured web documents in XML.
- Describing web resources in basic elements of Resource Description Framework (RDF).
- Web Ontology Language: OWL.
- Ontologies Applications.

Course References

1. Grigoris Antoniou, Paul Groth, Frank van Harmelen, Rinke Hoekstra, "A Semantic Web Primer", 2012.
2. John Domingue, Dieter Fensel, James A. Hendler, "Introduction to the Semantic Web Technologies", 2011.

Lecture 1 Outline

- Practical example showing the current web data management.
- What are the problems with the web?
- What is the semantic web?
- Knowledge Management (KM)

Let's organize a trip to Budapest using the Web!

Step 1: You try to find a proper flight with ...

... a big, reputable airline, or ...

Book flights - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.klm.com/travel/nl_nl/apps/ebt/ebt_home.htm

Stel hier uw vraag (in me ?)

KLM Royal Dutch Airlines **nwa**

Book flights You are not logged in

1 Vlucht zoeken 2 Datum kiezen 3 Tijd kiezen 4 Uw gegevens 5 Bekijken & betalen

Contact KLM Service Center

E-mail een vriend(in) Print deze pagina

Kies uw heen- en terugvlucht.



Vertrek: Amsterdam (Schiphol) naar Boedapest (Ferihegy Airport)

☒ Alleen vluchten gebaseerd op Alleen de beste verbindingen (10 van 13)

☐ Alleen rechtstreekse vluchten tonen (5 van 13)

☐ Laagste tarieven (9 van 13)

☐ Alle vluchten (13)


Kies	Prijs	Vertrek	Aankomst	Vlucht
Rechtstreekse vluchten				
<input checked="" type="radio"/>		10:00 Vr 15 Aug 08 Amsterdam (Schiphol) Totale reistijd: 2 uren 0 minuten Uitgevoerd door MALEV Hungarian Airlines Vliegtuigtype :Boeing 737	12:00 Vr 15 Aug 08 Boedapest (Ferihegy Airport)	KL3201
<input type="radio"/>		12:20 Vr 15 Aug 08 Amsterdam (Schiphol) Totale reistijd: 2 uren 0 minuten Uitgevoerd door MALEV Hungarian Airlines Vliegtuigtype :Boeing 737	14:20 Vr 15 Aug 08 Boedapest (Ferihegy Airport)	KL3203

Kies tarief

Take Off


RETOUR tarieven per persoon incl. belasting en toeslagen (excl. reserveringskosten)

Take Off (25% FB Miles)


 300


☒ Geselecteerd


Take Off

 341

Take Off (Flexibel)

 383

 455

 537

... a big, reputable airline, or ...

Review - Mozilla Firefox

File Edit View History Bookmarks Tools Help

https://booking.malev.com/BookingSite/Review/Review.aspx

BOOK YOUR TRIP
FLIGHTS, SCHEDULES
PREPARE FOR FLIGHT
FLYING WITH MALEV
DUNA CLUB
CUSTOMER CARE
CORPORATE INFO






MALEV Hungarian Airlines
ONE MORE REASON TO TRAVEL

English


1 Search 2 Select 3 Review 4 Traveller data 5 Purchase 6 Confirmation

SELECT DELIVERY METHOD

Please select ticket delivery method below!

Delivery method	Service fee	Address
<input checked="" type="radio"/>  E-ticket	EUR 10 View service fee breakdown	with e-invoice
<input type="radio"/>  Airport	EUR 30	KLM ticket office, departure hall 2.
<input type="radio"/>  Office	EUR 30	KLM ticket office, departure hall 2.
<input type="radio"/>  Courier		Courier or mail delivery is available only within the country of departure! You will be asked to provide a delivery address on the next page. Please note that in case of courier delivery we will be unable to deliver your ticket(s) to a PO box.
<input type="radio"/>  Mail	EUR 30	

BOOKING GUIDE
Book Cheap!
Card payment
About ticket pickup
If you are not among the travellers
Online Client Service


Check III!

FLIGHT SUMMARY

Outbound flight	Return flight
From: Amsterdam, Schiphol (AMS), Netherlands Budapest, Ferihegy 2A (BUD).	From: Budapest, Ferihegy 2A (BUD), Hungary To: Amsterdam, Schiphol (AMS), Netherlands

... a big, reputable airline, or ...

Online booking | Select Flights - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://wizzair.com/skylights/cgi-bin/skylights.cgi?step=1

wizzair.com

new destination from London Luton:
Timisoara (from 17 December)

online booking | useful information | destinations | travel services | partners

important changes regarding checked-in baggages - Please click here for more details...

flights | agency login | my account | search bookings | log in

search | **select** | contact | passengers | purchase | confirmation

The flights available for the date(s) that you have selected are shown below. Review and select that you wish to purchase by ticking the dot next to the fare price or use the form to the left hand search for new flights. All times are local.

Fares shown below are for one way flights and per adult, child and infant. The total price includes the taxes and the charges. Payments made with debit and credit cards are subject to a payment Click here to find out the exact amount. The fee depends on the type of card that you wish to use for payment.

going out ✈

Eindhoven » Budapest-Terminal 1

date	fareclass	flight	departs	arrives		price excluding tax	taxes and charges
Fri 15 Aug 08	Web	W6 228	13:25	15:20	<input type="radio"/>	Adult 94.99 EUR	26.00 EUR
Sun 17 Aug 08	Web	W6 228	13:25	15:20	<input type="radio"/>	Adult 73.99 EUR	26.00 EUR

Book a Flight

Round Trip
One Way

From:
Eindhoven

To:
Budapest-Terminal 1

Depart:
14 Aug

Return:
03 Sep

Passengers:
1 Adult Over 14 years
0 Child 2 to 14 years

Next Week >

Let's organize a trip to Budapest using the Web!

Step 1: You try to find a proper flight with ...

Step 2: You have to find a hotel, so you look for...

... a really cheap accommodation, or ...

The screenshot shows the HostelTraveler.com website interface. The browser window title is "Hostels - online booking at Youth Hostels and Backpackers Hostels - instant online reservations and reviews with HostelTraveler.co...". The address bar shows "http://www.hosteltraveler.com/index.php". The website has a yellow header with the "HostelTraveler.com" logo and navigation links like "Hostels", "Reviews", "Best deals", and "Top Cities". A search bar is present with a "Search Hotels/Cities" button. Below the header, there's a section titled "Find Hostels and Lodging at your destinations." with a subtext "Look for **iwb** for instant online booking." and a "Sign in" button. A sidebar on the left contains links for "Home", "Start Over", "Members", "Lodging Operators", and "About this Site". The main content area displays search results for "Balaton, Hungary". It states "3 accommodations have been found matching your criteria." and provides instructions on how to select accommodations and make reservations. A "Sort by:" section allows filtering by "Price (Lo-Hi)", "Price (Hi-Lo)", "Traveler Rating", "Hostel Class", and "Hostel Name". The results list includes "Unity Hostel Balaton" with details like "Rakoczi Ut 268", "Hostel 8 Units", and a price starting from "€12". A description mentions its location relative to Budapest and nearby amenities.

Hostels - online booking at Youth Hostels and Backpackers Hostels - instant online reservations and reviews with HostelTraveler.co...

File Edit View History Bookmarks Tools Help

http://www.hosteltraveler.com/index.php

HostelTraveler.com

Welcome member travelers! Sign in

Hostels Reviews Best deals Top Cities

everything for travelers:

Search Hotels/Cities

Check Reservations

Free Membership

Find Hostels and Lodging at your destinations.

Look for **iwb** for instant online booking.

How it Works

Step 1-Find Lodging

Step 2-Make Reservations

Secure online hostel booking at worldwide youth hostels, backpackers, and budget hotels.

Home

Start Over

Members

Lodging Operators

About this Site

Selection Status

3 accommodations have been found matching your criteria.

Select your accommodations and click **Make Reservations** for rates, availability, and reservations.

Click on names to see photos, reviews, and more information.

Tip: Click **Instant** for rates and instant secure confirmations.

Sort by: ☒ Price (Lo-Hi) ☐ Price (Hi-Lo) ☐ Traveler Rating ☐ Hostel Class ☐ Hostel Name

View Advanced Display Options

Balaton, Hungary **Make Reservations**

<input type="checkbox"/>	Unity Hostel Balaton Rakoczi Ut 268 Hostel 8 Units Write a Review		Instant Booking	2hours from Budapest,we are located right behind a free beach access to the lake, right opposite a large shopping and dinning court, only few minutes from the best clubs.lots of freebies!!!	From €12
--------------------------	---	--	------------------------	---	-----------------

... or a really luxurious one, or ...

Search Results - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.hilton.com/en/hi/hotels/search/newresults.jhtml?searchType=city&sta

Hilton
Travel should take you places®

Sign in Username or HHonors #: Password or PIN: Register Forgot password? Remember Me

View Text Only Customer Support 1-800-HILTONS

Specials & Packages Reservations Meetings Social Gatherings Hilton HHonors Things to Do eBrochures My Favo

Search Results

Hilton Hotels

Change Your Search

Location

City: Budapest

Search Within: 40 mi km

State/Province: State / Province

Country: Hungary

Brand

☒ Hilton Hotels
☐ All Hilton Family Hotels

Search Results Print Help

The following locations matched your request.
Rates displayed may be non-refundable.
Please review rate rules and restrictions prior to booking your stay.

Sort by: Brand Show: All Hotels Go View Hotels on a Map >

Hilton Hotels

Hilton Budapest WestEnd Compare Hotel

Vaci ut 1-3
Budapest, Hungary, 1062
36-1-288-5500

Available

Select up to Compare S

... an intermediate one ...

Szállás Utazás Magyarországon - Wellness-Szállás, Nyaralás, Utazás, Programok - Magyarországon - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.travelsinhungary.hu/view_kat.php?katid=1&megye=budapest

TRAVELS HUNGARY
www.travelsinhungary.hu

MAGYAR ENGLISH DEUTSCH

Keresés Az összes kategóriában OK

TÖRZSVENDÉG KEDVEZMÉNYEK

REGISZTRÁCIÓ

ELÉRHETŐSÉG

VENDÉGKÖNYV

Szállás (Wellness, Aktiv pihenés, Gyógyturizmus)

Étterem

Programok, Látnivalók

Szórakozás (Élményfürdők, Kalandparkok)

Rendezvényszervezés (konferenciák-tréningek)


AJÁNLATOK

Szálláshely \ Budapest

Válasszon megyét:
Válasszon!

Válasszon várost:
Válasszon!

Ajánlatok száma a kategóriában: 1.



Airport Hotel Budapest****

★★★★☆

SZÁLLÁSHELY
Budapest(Vecses)
Ferihegyi repülőtéri szálloda és konferencia központ

részletesen...

Let's organize a trip to Budapest using the Web!

Step 1: You try to find a proper flight with ...

Step 2: You have to find a hotel, so you look for...

- oops, that is a problem, the page is in Hungarian that almost nobody understands, but...

Let's organize a trip to Budapest using the Web!

Step 1: You try to find a proper flight with ...

Step 2: You have to find a hotel, so you look for...

- oops, that is no good, the page is in Hungarian that almost nobody understands, but...

Step 3: You may want to watch some photos about the city you will visit...

... on Google ...

budapest - Google Image Search - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://images.google.nl/images?hl=en&q=budapest&btnG=Search+Images&gbv=1

Web Images Maps News Video Gmail more

Sign in


Google


budapest


Search Images Search the Web Advanced Image Search Preferences


Moderate SafeSearch is on


Images Showing: All image sizes Results 1 - 18 of about 19,900,000 for budapest [definition]. (0.25 seconds)



E-mail this photo E-mail.
Budapest
550 x 412 - 40k - jpg
www.tripadvisor.com



Budapest, Hungary
450 x 338 - 43k - jpg
www.transitionsabroad.com



Budapest looks its most beautiful at ...
1024 x 768 - 161k - jpg
web.kvif.bgf.hu



Beautiful-Budapest
430 x 320 - 34k - jpg
www.budapesthotels.com
[More from
www.budapesthotels.com]



Hotel Victoria Budapest
575 x 473 - 92k - jpg
www.victoria.hu



Fly to Budapest and experience one ...
909 x 682 - 347k - jpg
www.sterling.dk



Danube Bridge Elisabeth in Budapest ...
1024 x 768 - 194k - jpg
budapest5.freeblog.hu


Budapest had 2421831 inhabitants in ...
422 x 425 - 29k - jpg
www.squidoo.com


budapest night
575 x 352 - 206k - jpg
www.wayfaring.info


Budapest - Things to Do with a Day ...
400 x 300 - 32k - jpg
cruises.about.com


Jewish Cultural Heritage in Budapest
452 x 360 - 67k
www.budapesthotels.com


Hungary, Budapest, Parliament
640 x 480 - 199k - jpg
www.hungary.travelphotoguide.co

... or a (social) travel site

Budapest Travel Guide | Budapest Tourism - RealTravel - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://realtravel.com/budapest-hungary-travel-guide-d13081-1.html

realtravel™ Real People. Real Advice. Real Experiences.™

Free Travel Blog Free Trip Planner Sign

Travel Guides Hotels Attractions Things To Do Editor's Picks Deals Search

You are here: Destinations > Europe > Hungary > Budapest > Travel Guide

BUDAPEST TRAVEL GUIDE AND TOURISM

Introduction **Guides** Trips Photos Flights Hotels Restaurants Attractions Deals




photo by Taisteal

[more Budapest photos >](#)
[Destinations near Budapest >](#)

Budapest Travel Guide

This capital city - made up of two parts, Buda and Pest - sits on one of the most beautiful areas of the Danube River and it shows. Often dubbed the "Paris of Eastern Europe", it is a combination of Old World grandeur and a thriving cultural scene. Budapest has a vibrancy and vitality that never slows and the numerous sights can occupy travelers for weeks. With so much history and culture to explore, no traveler leaves unsatisfied.

Price Compare Tool

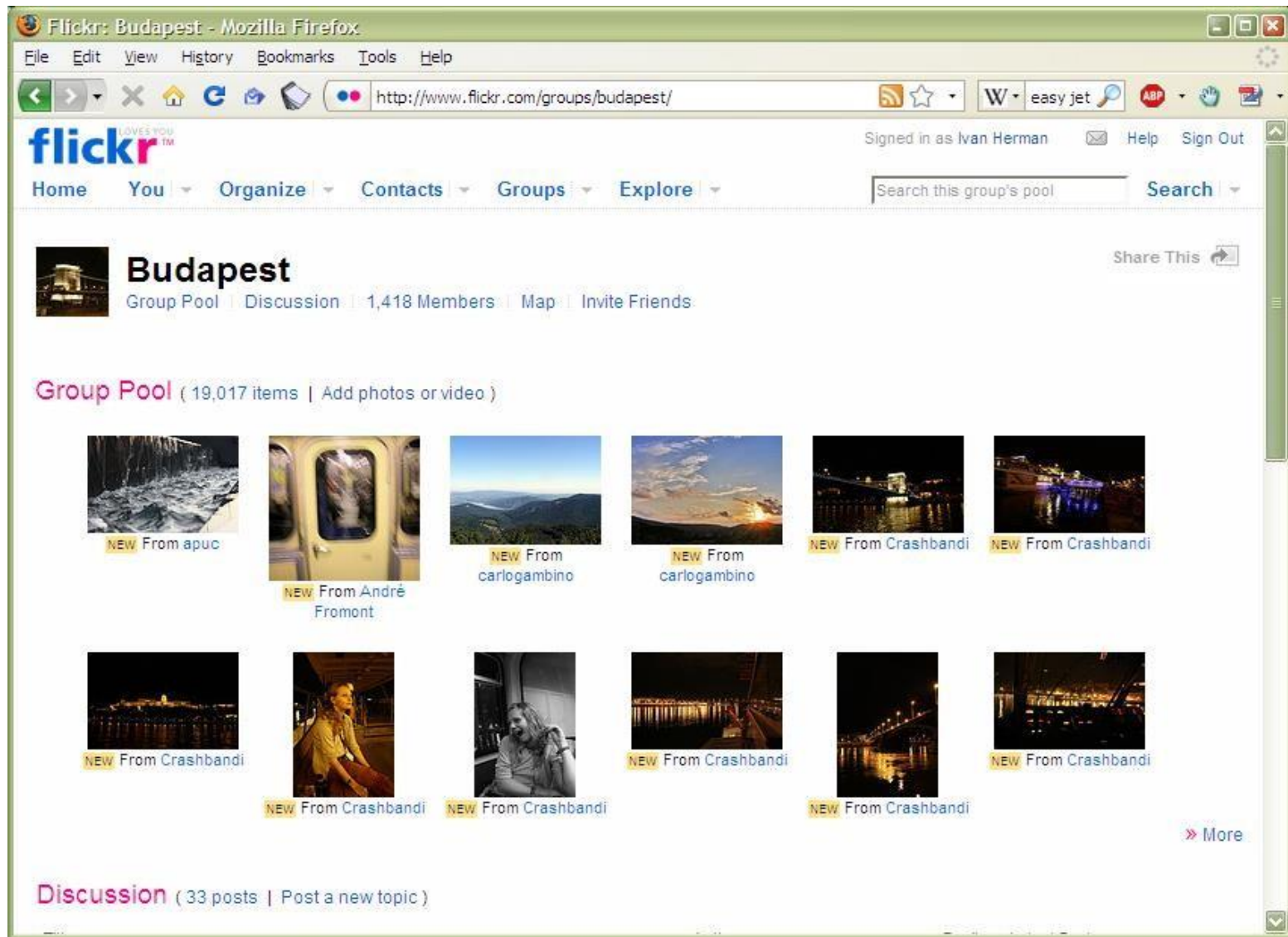
Search multiple sites for the best rate in Budapest

[COMPARE FLIGHTS](#)

[COMPARE HOTELS](#)

Travel Guide Information From Our Partners

... on Flickr ...



Flickr community: home to tens of billions of photos and 2 million groups.

What happened here?

1. You had to consult a large number of sites, all different in style, purpose, possibly language...
 2. You had to mentally integrate all those information to achieve your goals
 3. We all know that, sometimes, this is a long and complex process!
- All those pages are only the user interface that displays on the sites: (there are two main issues)
- ❖ The real *data* is hidden somewhere in databases, XML files, Excel sheets, ...
 - ❖ You have only access to what the Web page designers allow you to see in the interface.

What happened here?

Mashup websites: is a web page, or web application, that uses content from more than one source to create a single new service displayed in a single graphical user interface such as Booking website (www.booking.com)

- Specialized sites (TripAdvisor, Booking, Expedia) do a bit more:
 - ❖ they gather and combine data from other sources (usually with the approval of the data owners)
 - ❖ but they still control how you see those sources
- But sometimes you want to personalize: access the original data and combine it yourself!

... this one could work


← → ↻ booking.com/index.html?aid=376363;label=booking-name-L*Xf2U1sq4*GEklwcLOALQ5540988882221:pl:ta:p1:p22,563,000:acap:neg:fi:tikwd-65526620:lp9112395:li:dec:dm:ppccp=UmF... ☆ ⚙️ 👤


Booking.com EGP 🇺🇸 ⓘ [List your property](#) [Register](#) [Sign in](#)


[🛏 Stays](#) [✈ Flights](#) [🚗 Car rentals](#) [🎪 Attractions](#) [TAXI Airport taxis](#)

Find your next stay

Search deals on hotels, homes, and much more...


 Where are you going?

 Check-in — Check-out







 2 adults · 0 children · 1 room ⌵

[Search](#)

☐ I'm traveling for work

 Get the advice you need. Check the latest COVID-19 restrictions before you travel. [Learn more](#)

Browse by property type



➤

... or this one

Budapest Hotels: Read Budapest Hotel Reviews and Compare Prices - TripAdvisor - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.tripadvisor.com/Hotels-g274887-Budapest-Hotels.html

est tourist

My TripAdvisor
Register Now!

22,582,888 Travelers from 190 Countries Planned Trips Here This Week!

Home Destinations Fun & Games Just For Members

Search
Go

Budapest Overview
Budapest Hotels
Flights to Budapest
Budapest Deals
More On Budapest
Before You Go
Things to Do
Restaurants
Map
Traveler Photos
Traveler Videos
Forum
Budapest Deals
Discount Hotels

Home → Europe → Hungary → Budapest

Budapest Hotels

ADD TO MY MAP WRITE A REVIEW EMA

Hotels (272) B&Bs / Inns (24) Specialty Lodging (83)

Find Hotels Travelers Trust

Check-in: Any date
mm/dd/yyyy

Check-out: Any date
mm/dd/yyyy

☒ My dates are flexible

Price: Any Price U.S. Dollars

Hotel class: Any Class

Adults: 2

Recommended For: All

Best deals: Budapest hotels

- [Budapest: Book en bespaar tot 75%.](#)
Booking.com Geen reserveringskosten!
- [Great Budapest Hotels](#)
www.Venere.com/Budapest_Hotels See maps & pics, read book online. Relax and enjoy your stay!
- [Budapest easyHotel Deals](#)
www.easyHotel.com City Centre from just €15 per night from founder of easyJet
- [Cheap Hotels Budapest](#)
www.otel.com/BudapestHotels Fantastic rates on Budapest. Huge Savings, instant Confirmation!

[View all deals for Budapest](#)

Spon

Recommended Hotels

(1-20 of 272)

Sort by: Popularity [next >>](#)

Free Budapest Guide

Get the best picks for where to eat and play.

... like this one, or...

Create your package from Amsterdam to Budapest (and vicinity) - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.expedia.com/pub/agent.dll?qscr=cmsh&subm=1&CMBTX_0_rgnm=Bud

Welcome - Already a member? My Itineraries | My Account | Customer Support

Search Expedia

Home Flights Hotels Cars **Vacation Packages** Cruises Activities DEALS & OFFERS Maps Business Travel Rewards

Start search over

Change your search

Departing: 8/18/2008

Returning: 9/3/2008

Star Rating: Show all

Lodging Type: Show All

Name contains:

Go

Change Travelers

2 Adults
1 Room

Change travelers

Create your package from Amsterdam to Budapest (and vicinity)

Maps: Area map view Hotel map view


Hotel amenities: Narrow your search

Show hotels in this area:
Budapest (and vicinity) (all areas) Go

Not what you're looking for? Choose a different destination

View packages: 1 - 25 26 - 50 51 - 75 76 - 97 Previous Next

Sort by: ☒ Expedia Picks ☐ Price ☐ Hotel Name ☐ City ☐ Star Rating ☐ Traveler Opinion

Avg/person: \$2889	
	Corinthia Grand Hotel Royal Impressive landmark building with imposing Neo-classical façade and soaring glass atrium, set on Pest's busy Erzsébet Avenue, and housing shops, a spa, ... More lodging info Hotel promotion - Stay 3 Nights and Save 20% on Your Stay! ☆☆☆☆☆ Budapest, PEST Executive Double-Executive lounge usage Check in: 8/18/08 Includes: Free Wireless Internet, Spa Check out: 9/03/08 Credit, Breakfast Buffet Amsterdam (AMS) to Budapest (BUD) Depart: 8/18/08 6:00 PM - 8:00 PM Malev Hungarian Airlines

Total: Price details \$5778
Get ThankYou® Points

Traveler Opinion
4.7 out of 5
15+ reviews

1-800-55
Call now
for the same
great deals
plus expert
advice

... this one could work

Bestwestern.com, the World's Largest Hotel Chain - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://book.bestwestern.com/bestwestern/selectHotel.do?ata=00158210

Best Western

Welcome to bestwestern.com®

Customer Service Rewards Program Gift Card Groups & Meetings

My Profile

Email or Member#:

Password:

SIGN-IN

Forgot Password
Create Password
Enroll Now

HOME FIND A HOTEL CHECK RESERVATIONS TRIP PLANNER PROMOTIONS & PROGRAMS PACKAGES

RESERVATIONS HOTEL LOCATIONS BEST WESTERN PREMIER HOTELS NEW HOTELS QUESTIONS & ANSWERS

Hotel Search Results Select Occupancy Select Room Review & Reserve Confirmation

Find a Hotel - Select Hotel Page: 1

Modify Your Search:

City:

Select State or Province:

Select Country:

Check-In:

Check-Out:

Features & Amenities:

☐ High Speed Internet

☐ Complimentary Breakfast

5 Hotels Found within 50 Mi / 80 Km of the Budapest Area

Show: By:

Display Currency In:

Show Hotels on a Map

Best Western Hotel Hungaria

Stay at this 4-star Budapest hotel offering guests deluxe accommodations near some of Budapest's popular attractions and business locations. Visitors... More >

Photo Gallery

Rákóczi Ut 90,
Budapest, H-1074, Hungary
Distance from City Center: 0.86m / 1.38km

Hotel not available on selected dates.

Check Alternate Dates

Pet Policy

What would we be looking forward to reach?

- Use the data on the Web by the same way as we do with documents:
 - ❖ Be able to link to data (independently of their presentation).
 - ❖ Allow for applications to exploit the data directly.
 - ❖ Use that data by the way I want (present it, mine it, connect it, etc.)
 - ❖ Agents, programs, scripts, etc., should be able to interpret part of that data

We would like to extend the current Web to a standard way for a “Web of data”

What would we be looking forward to reach?

- What we need for a Web of Data:
 - ❖ Use Uniform Resource Identifiers (URIs) to publish full data, not only the interface that developer designed.
 - ❖ Allow the data to link to other data according to its types and meaning.
 - ❖ Characterize/classify the data and the links (the “terms”) to cover some extra meaning.
 - ❖ Use standards for all these!

Lecture Outline

- Practical example showing the current web data management.
- What are the problems with the web?
- What is the semantic web?
- Knowledge Management (KM)

What are the Problems with the current Web?

- The amount of information on the Web is huge and amazing sizes.
- The trillions of web resources cover every topic of human interest.
- There are two specific problems:
 1. Accessing data.
 2. Enabling delegation or authorization (Some level of automation needed)

The First Problem: Accessing data

- Documents are indexed and accessed via plain text:
 - That is, a string-based matching algorithms is used to retrieve documents.
 - This creates problems for ambiguous terms.
 - For example, “Paris” can refer to: the capital of France, history of Paris, French films, or referring to some events in Paris.
- Current Web activities are not well supported by software tools
 - Except for [keyword-based search engines](#) (e.g. Google)

Problems of Keyword-Based Search Engines

The First Problem: Accessing Data

- Results are highly sensitive to vocabulary.
- Human involvement is necessary to interpret and combine results.
- Results of Web searches are not accessible by other software tools.

Problems of Keyword-Based Search Engines

The Second Problem: Enabling Delegation

- When users browse the Web, their computers act simply as requesting devices.
 - Displaying text, graphics, audio, and video content.
 - All conclusion and computation is left to the user
- Delegating tasks such as **integration of information**, **data analysis**, and **meaningful to machines** became urgent and not available in **KBSE**.
- Now in reality, the meaning of Web content is not machine-accessible: lack of semantics.

Lecture Outline

- Practical example showing the current web data management.
- What are the problems with the web?
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What is the Semantic Web?

- 1) The Semantic Web is an extension of the World Wide Web through standards set by the World Wide Web Consortium (W3C).
 - The **World Wide Web Consortium (W3C)** is an international community where member organizations is a full-time staff, and the public work together to develop Web standards.
- 2) It provides software programs with machine interpretation of metadata of the published information and data.
 - Metadata is "data that provides information about other data". In other words, it is "data about data".

What is the Semantic Web?

3) In other words, we add further data descriptors to existing content and connect data on the Web.

➤ The goals of the Semantic Web:

- Is to make internet data content machine-readable and detailed accessible.
- Use intelligent techniques to take advantage of these representations.
- The Semantic Web will gradually evolve out of the existing Web, it is not a race to the current WWW.

Lecture Outline

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Knowledge Management (KM)

- Knowledge Management (KM): is the process of **creating**, **sharing**, **using**, and managing the knowledge and information of an organization's data using content management systems.
- There are two examples of KM methods:
 - **Portal**: is an idea of a website that offers a broad range of services, such as e-mail, search, news, quotes, and stocks.
 - **Dashboard**: is a user interface that, organizes and presents of information in a way that is easy to read.

Knowledge Management (KM)



Limitations or challenges of Current Knowledge Management Technologies

- Searching information:
 - Keyword-based search engines.
- Extracting information
 - Human involvement necessary for browsing, retrieving, interpreting, combining.
- Maintaining information
 - Inconsistencies in terminology, outdated information.
- Viewing information
 - Impossible to define views on Web knowledge

Relationship bet. Semantic Web and Knowledge Management

- Semantic Web enabling and enhancing knowledge management through:
 - ❖ Knowledge will be organized in conceptual methods according to its meaning.
 - ❖ Automated tools for maintenance and knowledge discovery.
 - ❖ Semantic query answering.
 - ❖ Query answering over several documents.
 - ❖ Defining who may view certain parts of information (even parts of documents) will be possible.

Thank you

Prof. Khaled Wassif