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## A Geospatial Website for Consulting Geographical Information in Casablanca city

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### CONTENTS

- Introduction
- Objectives
- Methodology
- Data preparation and processing
- Design and development of the Web site
- Functionalities of the Application
- Conclusion

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### INTRODUCTION

- great quantity of information
- traditional tools share this  $\Gamma$
- Internet as modern means for data carrier
- internet allows several services : consult GIS services, copy parts of maps and download several kind of GIS data

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### Objectives

- Methodology data preparation and restructuration to design a geospatial website for consulting geographic information concerning certain services located in Casablanca City such as: administrative services, shopping services and some public and private services as well.
- Using the general concepts of the deployment of geographic information via Internet.
- Design of a geospatial website that will allow consulting geographical information over the web using the ArcIMS software

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### METHODOLOGY

- strategies used to add GIS functionalities to the WEB :  
ArcIMS software
  - combines data from different sources
  - Data of different formats: raster, vectorArcSDE themes
  - possibilities of analysis, queries, measurement and visualization

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## METHODOLOGY

- **ArcIMS software**
- adds geographical dimension
- capacities of analysis that conveys with many applications: electronic trade, resource requirements planning,
- localization of services.
- Facilitates diffusion of GI via Internet
- managing data using tools for visualizing, analyzing and making decision as well

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## Data preparation and processing

- Data formats: shapefiles, ArcInfo coverages, text files and geocoding data.
- Map of Casablanca city, counties, blocks of streets (base layer)
- Road Network will be used to assign the names to streets, avenues, roadway network
- Geocoding data will be used to carry out research by address.

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## Example of Data file

Objet	Rue	Raison	Srv	Raison	Raison
Point	bd'Yacoub El Mansour (Mans)	Lunatic s.a		Etude, fouritures et installation	
Point	bd'MuhammadVI Jen de Mead	et de distribution de quincaillerie		Vente de quincaillerie	Sodige s.a
Point	ue Nationale	Lionel Optique s.a.s		Optique, lunetterie	
Point	ue Moninga El Mann	Daboussi Morata (avocat)		Avocat	
Point	bd'El Aziz	Pharmacie Val d'Herla		Pharmacie	
Point	bd'Ahmed ou Idris	Benchekroun Abdel (avocat)		Avocat	
Point	bd'Muhammad Zerkhour	Pharmacie Jada		Pharmacie	
Point	ue Idriss Lahrif	Mouan El Idriss Abdel-ade (m)		Avocat	
Point	bd'Abdullah Serkhou - mt C. de	Pharmacie Jada Brou Hagane		Pharmacie	
Point	bd'Rahal El Mediane	Adjour Alana Tareb (avocat)		Avocat	
Point	ue Kewach	Celia Center d'Expertise Comp		Expertise comptable, conseil	
Point	boulevard Rachid	Chaque Rachid		Médicin,Médecin,orthographe	
Point	ue Fala et Max Guad	Pharmacie Anouf		Pharmacie	
Point	ue de Libanne	Pharmacie du Marchour		Pharmacie	
Point	ue Moninga El Mann	Elmadouh Elmadouh (avocat)		Avocat	
Point	bd'Guad Mouloug	Pharmacie de la Village		Pharmacie	
Point	bd'Muhammad Zerkhour	et Elane Gracien		Ravitaillement des sols et des r	
Point	ue Mohamed el Fout & Mea	Echamou Abdelazem (avocat)		Avocat	
Point	ue de Chadouag	Dualyouss & Soudilila		Importation d'articles pour la ch	
Point	bd'Yacoub El Mansour (Beau)	Saru Carreau s.a	Bis	Tous commerces de rot, mur, tag	

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## Data

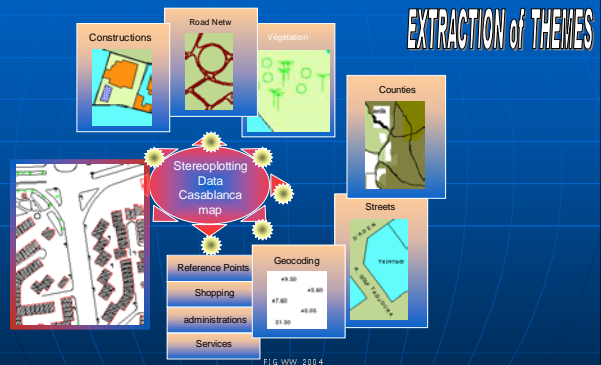


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## Data preparation and processing

- Data Structure varies from one theme to another
  - zones covered by these data are not complete, require updating some details
  - extraction and classification in a suitable group of services
  - polygonal elements should be converted into point elements.
  - design a library of cartographic symbols to represent the services that do not have a standard symbol.
- Therefore we proceed to the reorganisation of these data in order to guarantee **precise and complete information**

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## Data preparation and design

### Data Reorganisation

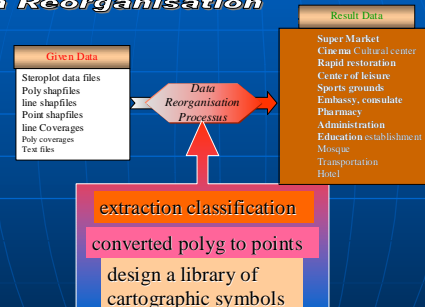


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## Results



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## Available Data

- Travel agencies = 94
- Counties = 36
- Insurance agencies = 127
- Banks = 162
- Blocks Streets = 7583
- Establishments = 355
- Doctors = 875
- Hotels = 25
- Restaurants = 133
- Supermarkets = 19
- Roads = 2074

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## Designing the Web site

- **ESTABLISHMENT OF AN ACCESS DATABASE**
- Access database that is quite compatible with internet specifications.
  - open the attribute tables using Excel software, make the necessary changes
  - correct spellings errors due to the nonconformity of regional parameters
  - create a new Access data base and import the Excel files
  - This procedure insures that the data base would contain consist tables with the original attribute tables of dBASE III

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## Web site developement process

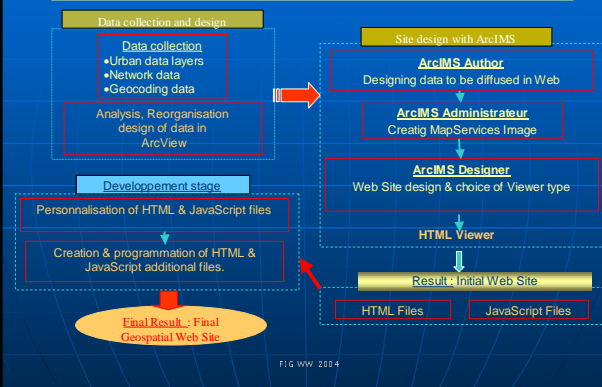


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## Designing the Web site

- **Map definition in ArcIMS Author**
  - Define the contents of the map to publish on the website.
  - Define the themes to use for the site,
  - Identify data
  - Order the layers
  - Define their displaying order
  - Once themes loaded, the affectation of the cartographic symbols is auto.

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## Designing the Web site

- **Map definition in ArcIMS Author**
  - geocoding addresses : localizing a point based on a given address and calculate its coordinates from information about street's indexes.
  - choose a style of address that is closer to the one adopted in Morocco:
    - *number* and *Avenue* or *street's name*
  - establish the link between the fields and the corresponding attributes of the style.

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## Map definition in ArcIMS Author

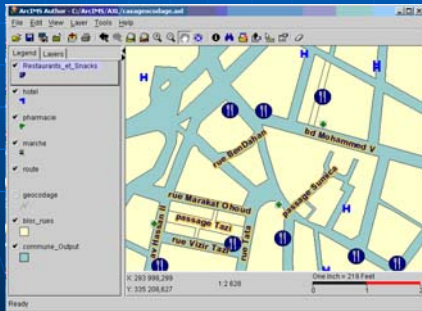


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## Designing the Web site

### ■ Design of menus

- good design of menus would facilitate the communication to the user and gives the site excellent visibility and fine aesthetics.
- create a dynamic navigation menu for all public services of the same category
- four categories of services are created

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## Designing the Web site

### Categories of services

- **first category: Points of reference**
  - movies, cultural centers, education establishments, hospitals, mosques, cults, sport centers, parks, etc.
- **second category: Public/Private Services**
  - travel agencies, banks, private stations, rail stations, road stations, hotels, restaurants and snacks etc.
- **third category: Shopping**
  - commercial services of the city: supermarkets, shopping centers, pharmacies, etc.
- **fourth category: Administrative**
  - administrations, embassies, consulates, states, counties etc.

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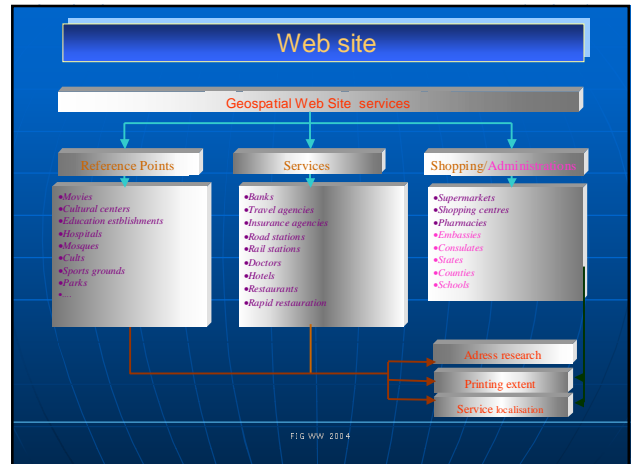


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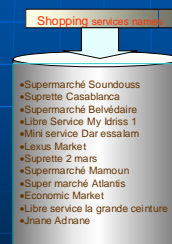
## Web site page view



## Designing the Web site

### ■ Displaying services names

- This page displays the set of names of the available services, as rolling list.
- With a click on a given name, descriptive data are displayed



## Functionalities

- **Consultation and localization of services:**
  - The consultation is a very rapid research
  - some auxiliary information could be found like the period of night pharmacy services.
  - localization of a service on a map informs on the site position and permits navigating using some offered tools (like zoom in out, displacement)
- **Research and localization of addresses:**
  - a very useful tool for several delivery societies, sanitary services, administrations;
  - Once the address introduced by keyboard, it is automatically displayed on the map shown on the screen.
- **Printing extent:**
  - prints the contents of a map extent with one click on the *Print* button
    - a new page asks for title of the map
    - a new page containing the chosen extent with a legend of different themes

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## Developing the address research page

This page would initialize the process of geocoding in ArcIMS  
The customer will have to introduce the address



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## Address localization

Then the map and the localization are shown on the screen



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## Service info

<b>Hyatt Regency</b>	
<b>ADRESSE</b>	Place des Nations Unies
<b>TEL</b>	022 26 12 34
<b>FAX</b>	022 22 01 80

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## Printing extent



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## CONCLUSION

### Web site

- Web site is open to other developments
- Constitutes a basis for diffusion of GI services
- meets several public needs
- Tested successfully for Casablanca city
- The result of this work reveals that Internet represents a suitable tool to deploy Geographical Data and make it accessible to large public of the community.

➔ Needs collaboration between several states departments

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■ Thank you for your  
Attention

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