



DISTRIBUTED AND WEB BASED GEO-INFORMATION SERVICES AND APPLICATIONS

Term Paper

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Submitted to

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CRP 514

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INTRODUCTION

What is Internet GIS?

It's Network-based geographic information services that utilizes

- ❖ *Wired*
- ❖ *Wireless Internet*

Network based indicates that whole framework of Internet GIS is sharable & exchangeable

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INTRODUCTION

Method of Telecommunication includes both wired and wireless

Mobile devices with wireless communication are integral part of Internet GIS framework

Contents of Internet GIS

- ❖ *Displaying Internet maps*
- ❖ *Sharing online geospatial information*
- ❖ *Virtual touring*
- ❖ *Children location monitoring*
- ❖ *Social services*

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INTRODUCTION

- ❖ *Distributed Internet GIS framework is an example of the revolution of information system*
- ❖ *Previously information system used to be confined*
- ❖ *but with new technology in network communication it becomes possible*
- ❖ *New languages such as Java, python, C+ provide interface for applications*
- ❖ *Distributed component technology allows clients to access heterogeneous servers dynamically*

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INTRODUCTION

- ❖ *The distributed services interfaces will provide greater economies due to cost efficiency and flexibility in usage*
- ❖ *It will increase the wide range applications of online geo-spatial such as*

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- A. *Digital Libraries*
 - B. *Digital Governments*
 - C. *on-line mapping*
 - D. *Data clearing houses*
 - E. *distance learning modules*

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DIFFERENT TYPES OF INTERNET GIS

Three Kinds of Internet GIS

Data Sharing

Applications

- On-line data warehouses (data archive)
- On-line data clearinghouse (metadata)

Information Sharing

Applications

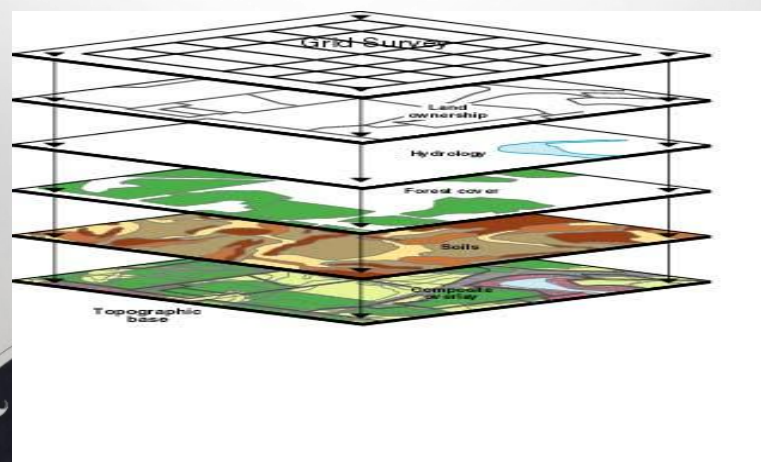
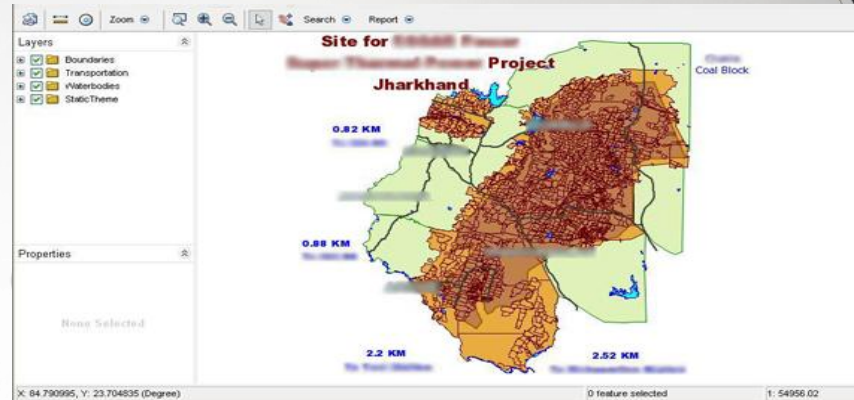
- Web-based map display
- Navigation Services

Knowledge Sharing

Applications

- On-line GIS models
- Web-based spatial analysis tools

DIFFERENT TYPES OF INTERNET GIS



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REVIEW ON HISTORY AND CURRENT STATE OF GIS

❖ *New software architectures, and new communication protocols have been introduced*

❖ *2 Web technologies have been discussed in this term paper*

I. Internet Map Servers

II. Java programming language

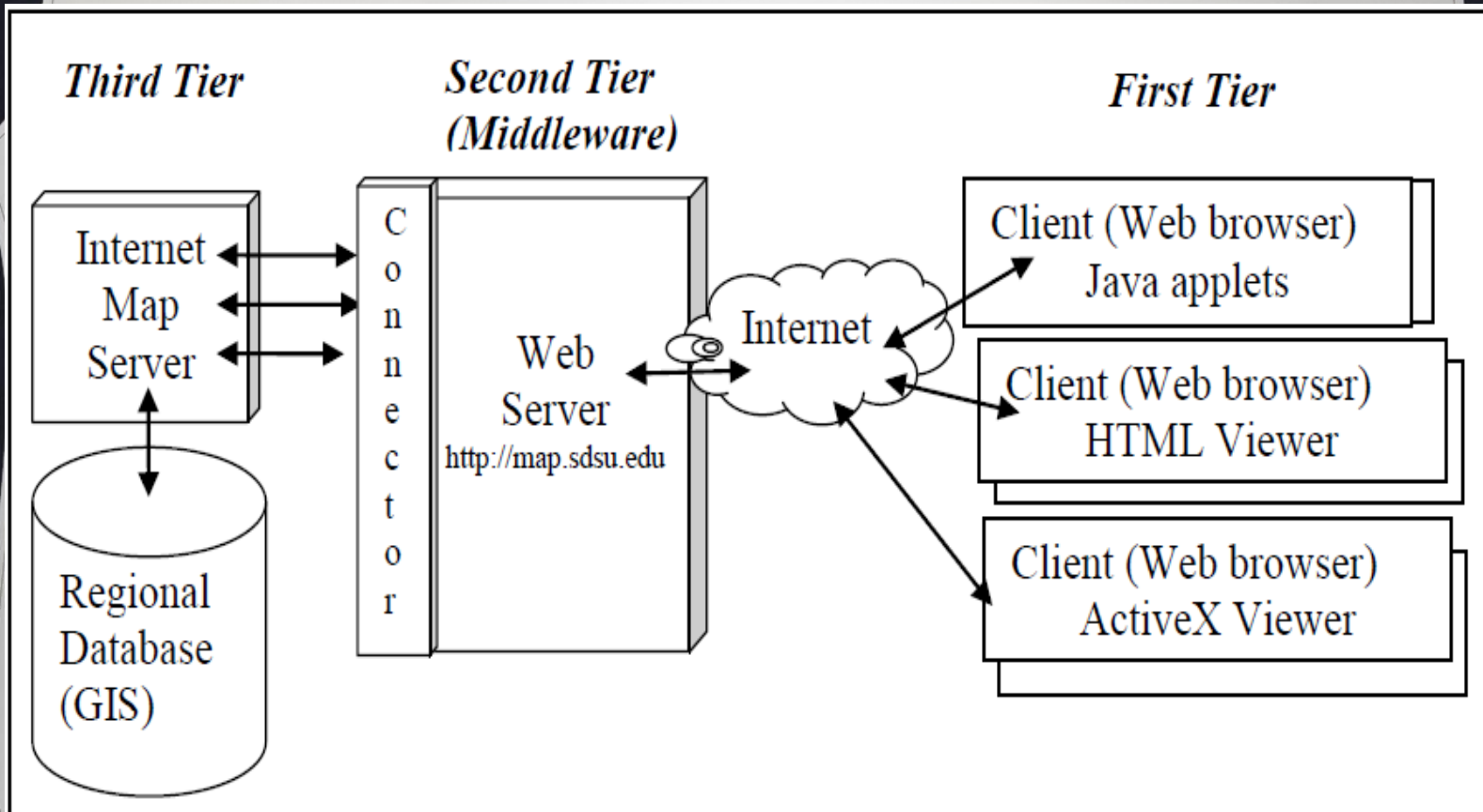
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REVIEW ON HISTORY AND CURRENT STATE OF GIS

- ❖ *Internet Map Servers provides integrated web-based map browsing, spatial query, and map overlaying capabilities*
- ❖ *Java language is commonly used for the development of on-line GIS tools and spatial analytical functions*
- ❖ *Internet map servers adopt three-tier architecture for the system implementation ,which is shown in next slide*

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REVIEW ON HISTORY AND



REVIEW ON HISTORY AND CURRENT STATE OF GIS

❖ *JAVA Programming language is used for developing on-line remote sensing*

❖ *This language is used to enable the development of secure , high performance and highly robust applications*

❖ *Current Java System Development Toolkits (JDK) provides a series of well-defined Application Programming Interfaces (API)*

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REVIEW ON HISTORY AND CURRENT STATE OF GIS

❖ *JDK is used for image processing and display, such as Java 2D API and Java Advanced Imaging (JAI)*

❖ *its also used for*

- 1. manipulating and displaying images*
- 2. cropping, and scaling to more complex operations*
- 3. geometric warping and frequency domain processing*

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STANDARDS FOR INTERNET GIS

❖ *To share data, information, and knowledge among the GIS community, a standardized communication protocol is used*

❖ *There are two major organizations that set standards for the development of Internet GIS now*

- i. Open GIS Consortium, Inc. (OGC) (<http://www.opengis.org>)*
- ii. Technical Committee tasked by the International Standards Organization (ISO/TC211). (<http://www.isotc211.org>)*

Both organizations are founded in 1994

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STANDARDS FOR INTERNET GIS

❖ *OGC's members come mainly from the private sector, including*

1. *software vendors and GIS companies, such as ESRI Inc., ERDAS Inc., INTERGRAPH Corp., AutoDesk Inc., etc.*

❖ *The goal of NASA activity has been to assure that NASA data and data services are compatible with emerging national and international standards.*

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STANDARDS FOR INTERNET GIS

❖ Earth Observation data from NASA satellites is engineered for global Earth systems science research and climate studies

❖ NASA Earth observations is relatively coarse compared to other data sources

❖ GIS sources is used to provide coverage and feature layers essential to a variety of applications

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THE FUTURE OF INTERNET GIS

- ❖ *Internet GIS services are user-centered*
 - ❖ *Internet GIS services focus on long-term, evolution-type operations*
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- ❖ *Diversified GIS services are required*
 - ❖ *Internet geographic information services will be integrated with many types of on-line information services*

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THANK YOU

Any Queries



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