Developing e-Governance application (LAND REGISTRY)

Project Report submitted in partial fulfillment of the requirement for the degree of

Bachelor of Technology.

in

Information Technology

under the Supervision of

DEEPAK DAHIYA

By

SAMITA ARORA (111430)

to

Jaypee University of Information and Technology

Waknaghat, Solan – 173234, Himachal Pradesh

Certificate

This is to certify that project report entitled "DEVELOPING E-GOVERNANCE APPLICATION", submitted by SAMITA ARORA in partial fulfillment for the award of degree of Bachelor of Technology in Computer Science & Engineering to Jaypee University of Information Technology, Waknaghat, Solan has been carried out under my supervision.

This work has not been submitted partially or fully to any other University or Institute for the award of this or any other degree or diploma.

Date: **DEEPAK DAHIYA**

12-05-2015   **Professor**

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12-05-2015   Samita Arora

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Abstract

This project creates software of one of the e-governance application for the registration of land. This project has been explicitly made for the state of Himachal Pradesh. It manages all the data needed to register a piece of land and their framework within the government. It includes the option to choose your district and your town/city within that district. The projects also let you select the authority to get the registration from: revenue officer or tehsildar. It also provides an option to make your account so as to check the status of your requested document. It helps you calculate the amount of stamp duty that need to be submitted for the registration of the land.

It has a database administrator who has access to the entire database, in regards with viewing and update of information. This exclusive right is implemented using authorized access. Communication between personnel and administrator has also been provided for through enquiry forms.

The data can be accessed, manipulated and retrieved very easily. The interface has been made very user friendly. The data is well protected for use and the data processing i.e., result of query functions has been made very quick and efficient.

CHAPTER 1
ABOUT THE PROJECT

1.1 INTRODUCTION

The term 'Governance' is wider than 'Government'. Governance may be an activity of governing/controlling a country by its Government, controlling of an organization Accordingly E-governance may also involve governing of a country, organization, company or a household, however with the help of Information and Communication Technology (ICT).

There are various e-governance services that are or should be available online to possibly every citizen of the country. I have taken an initiative to implement one of those services, i.e. LAND REGISTRATION. In the project, the user (citizen of India) needs to sign up to avail this facility. He/she can then calculate the stamp duty, depending on the value of their property, which they need to pay before registration. The person, then has to fill a form requesting the registration of the land. He/she can also file an enquiry form in case of any complaints, feedback or in convenience. The application is solely for Himachal Pradesh.
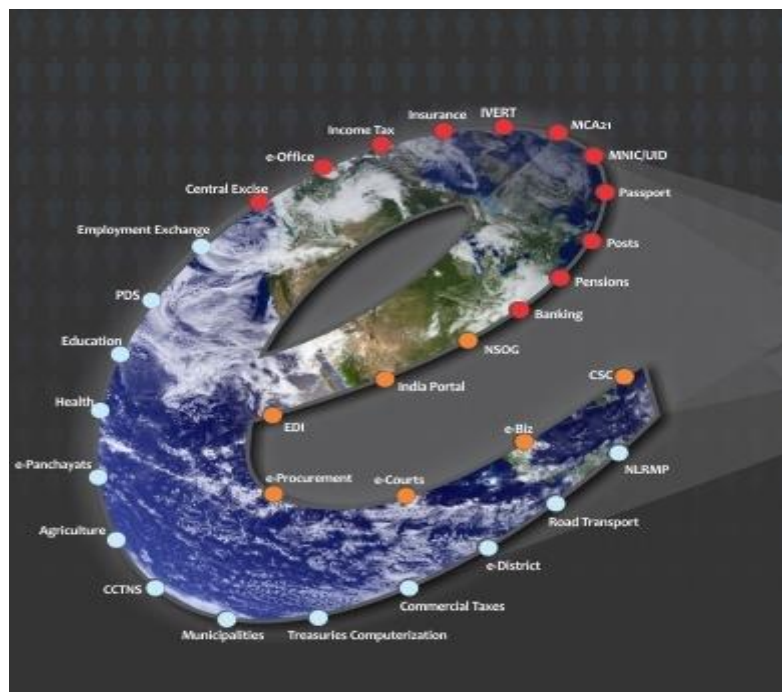
1.2 ADVANTAGES

- ➢ Ensure data accuracy
- ➢ User friendly
- ➢ Interactive
- ➢ Less time consuming
- ➢ Helps in the advancement of government services
- ➢ Can be availed even from the remotest part of the state

1.3 BENEFITS OF e-GOVERNENCE

a) Fast, Convenient and Cost Effective Service Delivery

With the advent of e-Service delivery, the government can provide information and services at lesser costs, in reduced time and with greater convenience. For instance, after the computerisation of land records in Karnataka, farmers can obtain a copy of their Records of Rights, Tenancy and Crops (RTC) within 30 minutes, as against 30 days that it used to take earlier. Moreover, a printed copy of the RTC at kiosks costs 15 only, as against heavy bribes that one had to pay earlier

b) Transparency, Accountability and Reduced Corruption

Dissemination of information through ICT increases transparency, ensures accountability and prevents corruption. An increased use of computers and web based services improves the awareness levels of citizens about their rights and powers. This helps to reduce the discretionary powers of government officials and curtail corruption. For instance, land registration requirements in Andhra Pradesh after computerization can now be completed within an hour without any official harassment or bribes.

c) Increased Participation by People

With easy access to the government services, the faith of the citizens in the government increases and they come forward to share their views and feedback. Increased accessibility to information has empowered the citizens and has enhanced their participation by giving them the opportunity to share information and contribution implementation of initiatives.

1.4 OVERALL DESCRIPTION

GOALS OF THE PROPOSED SYSTEM:

- ➢ **Planned approach towards working**: The working in the organization will be well planned and organized. The data will be stored efficiently with optimal disk space consumption in data stores which will help in retrieval of information as well as its storage under resource constraints.

- ➢ **Accuracy**: The level of accuracy in the proposed system will be higher. All operations would conform to integrity constraints and correctness and it will be ensured that whatever information is received at or sent from the centre is accurate.

- ➢ **Reliability**: The reliability of the proposed system will be high due to the above mentioned reasons. This comes from the fact that only the data which conforms to the accuracy clause would be allowed to commit back to the disk. Other properties like transaction management and rollback during system or power failure etc get automatically taken care of by the SQL systems, which is undoubtedly an excellent choice of the rear end of the dbms system. Properties of atomicity, consistency, isolation and data security are intrinsically maintained.

➢ **No redundancy**: In the proposed system it will be ensured that no repetition of information occurs; neither on a physical storage nor on a logical implementation level. This economizes on resource utilization in terms of storage space. Also even in case of concurrent access no anomalies occur and consistency is maintained. In addition to all this, principles of normalization have been endeavored to be followed.

➢ **Immediate retrieval of information**: the main objective of the proposed system is to provide a quick and efficient platform for retrieval of information. Among the queries allowed for use by the user, the query results are made available immediately, without time lapse, irrespective of the complexity of the query.

➢ **Ease of operation**: The system should be simplistic in design and use. It is such that it can be easily developed within a short period of time and can conform to the financial and resource-related constraints of the organization.

CHAPTER 2

LITERATURE REVIEW

PAPER 1:

[A Model based Approach to Implement Cloud Computing in E-Governance, International Journal of Computer Applications (0975 – 8887) November 2010, Volume 9– No.7, 18]

1. ABSTRACT

In the current scenario every enterprise wants to implement Cloud Computing to fulfill their computing needs. These changes naturally should reflect the way government

function in terms of the organization of the government, its relationship with its citizens, institutions and businesses and cooperation with other governments. The critical problem discussed for the developing countries is the necessary infrastructure to implement the E-services.

2. INTRODUCTION

Discusses the various problems that has been identified in implementing the various phases of the E-governance in developing countries. The Main problems that he had discussed are Infrastructure Development, Accessibility, Security, Trust & Privacy, Transparency, Permanent Availability and Preservation, Cost Structures.

3. PROBLEMS WITH PRESENT ARCHITECTURE

3.1 Application Life Cycle Management

cost-effective management of structured data throughout and testing to archiving and retirement replication facility needs to be provided and it's cumbersome. It may cause

duplication of resource and departments. As the complexity and sophistication of the software development task has grown it needs to use increasing numbers of tools.

3.2 Software licensing and Support

application the licensing is required application is sufficient enough.

3.3 Scalability:

Traditional infrastructure to frequently upgrade to meet these challenges,
Software redundant.

3.4 Accountability

The applications in traditional infrastructure don't have accountability.

3.5 Modifiability

Traditional infrastructure example as they are not inherently scalable the provisioning cost and time for moving from 100 users to 10000 users could eat up lots of resources.

3.6 Physical security

It involves the provision of safe activities with a focus on preventing unauthorized physical access to computing equipment.

4. TRADITIONAL INFRASTRUCTURE

With traditional infrastructure, we need to ensure secure, application life, from development retirement. For making the application highly available, the part of development activity which could be resources across various government organizations support: It is another major concern as for each but for distributed data centers only one license for the application cannot scale, scalability demands change over time, thereby making some of the hardware and central authority and traditional infrastructure incurs more costs when modification is required.

5. PROPOSED MODEL

This section discusses the new approach to migrate from Traditional Computing to Cloud Computing. This approach is basically based on the Prototyping model of the Software Engineering from Traditional Computing to Cloud.

5.1. Step One: Learning

The Cloud Migration Strategy begins with learning about the basics of cloud computing. Cloud computing is the thrust area in computing technology, it will be important for technology transfer to occur—the ―techies‖ in and outside of government will need to go the extra mile to educate and inform the ―non technical‖ policymakers (agency executives, staffers, and law makers) as to the merits and value of cloud computing. It will be especially important to devote sufficient funding for research to establish how cloud computing is working - or not – in various areas and at all levels of government, so as to ground policy and practices in regard to governmental use of cloud computing.

5.2. Step Two: Organizational Assessment

In the second step the IT officers or Government officials should conduct an assessment of their present IT needs, structure, and capacity utilization. In a cloud computing environment, and study the requirement of addition or reduction of the resources can be added—or subtracted—based on needs and demand.

5.3. Step Three: Cloud Prototype

In the Third step the IT professionals will develop the prototype for cloud computing based on the requirement for the particular project.

5.4. Step Four: Cloud Assessment

After the internal assessment and external assessment of the prototype outreach stemming from the pilot effort, IT Professions should then conduct an overall IT cloud assessment to determine if their organization has data and applications that could readily move to a

cloud environment, and which type of cloud public/private/hybrid cloud would be suitable or usable for these projects. As this assessment progresses, IT decision makers must focus on establishing decision rules as to which data and applications can - and cannot - be housed in any form of cloud environment. In doing so, they will discover a definite field of ―cloud-eligible and ―cloud-ineligible‖ data and applications.

5.5. Step Five: Cloud Rollout Strategy

At this stage, it is time to begin rolling-out your cloud computing strategy - gaining buy-in from both organizational leadership and IT staffers, and communicating with both internal and external stakeholders as to the goals, progress, and costs/benefits of each cloud project. This is where the cloud goes from being a test effort to become more mainstream in the way the agency manages its data, its operations, and its people. It becomes part of ―normal organizational operations, just as other prior tech innovations (from telephony to fax to the Internet to e-mail and to social media) have become IT tools, used in support of the agency's IT strategy, and more importantly, its overall strategy.

5.6. Step Six: Continuous Improvement

This is the last step and we call it ―continuous improvement tills we get the fully functional cloud computing based system with live data.

6. CONCLUSION

The conclusion drawn from the above research is that we can get the better services than traditional computing with reduced cost with the help of cloud computing. The cloud model will ultimately serve to transform - in a big way - not just government information technology, but IT in the corporate world as well. The transition, however, will take time But cloud computing is one of the best option to implement or enhance the Government services in education, healthcare and social upliftment of the citizens of the developing countries.

PAPER 2:

[**Electronic Governance for the Lands and Surveys Department in Cyprus, TS6 – NSDI and Data Distribution, FIG Working Week 2004, 17**]

1. INTRODUCTION

The dramatic evolution of telecommunications, computers and the Internet, creates a demanding society for public administration and services. Electronic government refers to the utilization of the above technology by a government to fulfill its works and responsibilities efficiently, effectively and with the ability to liaise with other similar authorities. Electronic governance (e-Gov) refers to the adaptation of public services with the Internet and the operation of government offices through the World Wide Web. It implies high quality services and reliability with speed and low operational costs. Moreover, e-Gov eliminates distances and office working hours.

2. ELECTRONIC GOVERNANCE IN LAND REGISTRY SERVICES

The experience of New Zealand, Western Australia, Singapore, England and Wales, Ireland and Canada is investigated as a background to considering the needs of Cyprus concerning e-Gov systems in the area of interest of land registry. In addition, this section investigates products and benefits provided to users, along with their policy of pricing.

2.1 New Zealand

The vision of the government of New Zealand is to become a world leader in e-government. The Land Information of New Zealand (LINZ) operates the Landonline, an automated system for land title and survey transactions, and is responsible for the maintenance of the land titles register which provides a true and up-to-date record of the ownership of freehold land and minimize any risks to the State's guarantee of title The

processes are the same as in the manual environment, but much faster. In the case of property transactions the LINZ titles register updates automatically once an e-Dealing is registered (Landonline, 2002). Landonline users pay a set-up fee, license fee and annual maintenance fee. Other charges are on a user-pays basis and vary according to the amount and type of work undertaken.

2.3 Singapore

Integrated Land Information System (INLIS) is another innovative product which Singapore Land Authority (SLA) has introduced since 1998. SLA optimises land resources for the social and economic development of Singapore. As a custodian of Government land, SLA is responsible for the management of all state land and buildings, land acquisitions, leases, sales, surveys, developing and marketing land information, and maintaining the national land information database SLA's objective is to make INLIS the gateway to services across various agencies. SLA is working closely with other agencies to extend its range of land-related services to the private sector. The information sources include departments within Singapore Land Authority - Land Registry, Land Management Department and Land Survey Department and Land Transport Authority INLIS users include lawyers, developers, real estate and property agents, property buyers, values, architects, land surveyors, financial institutions, banks, and members of the public.

2.4 UK

The UK has set a clear target that all government services should be available electronically, and in a customer-focused way, by 2005. This will mean the transformation of access to Government, not focused on government departments, but on the consumer. Emphasis will be on services available via the Internet, although final delivery to the user will be via the most appropriate channel.

6. PRINCIPLES FOR AN ELECTRONIC GOVERNMENT SYSTEM FOR THE LANDS AND SURVEYS DEPARTMENT

It is envisaged that electronic government will harness people and technology to revolutionize the delivery of government services to Cyprus and that the new services will be tailored, inexpensive, easy to use, personal and friendly.

The following principles are recommended for an electronic government system for the DLS:

Meet individual needs. Department's services should be tailored to the particular needs of the individual citizen. Where possible, services will be available 24 hours a day, seven days a week, through a variety of channels, and from most places in the world. Maintain, improve and protect the land information. The data capture program will continue to provide a strategic focus on data capture and ensure the most important information is captured first. Excellence guidelines for data management will be prepared with the support of Information Services Department. The guidelines will address, among other things, metadata, archiving, storage, maintenance, version control, access, security and data accountability.

8. CONCLUSION

Land Registry offices in New Zealand, Australia, Singapore, Ireland, the UK and Canada apply and promote electronic governance successfully. Authorized users are able to access land records and plans, as well as to lodge routine transactions digitally. The aim of electronic governance (e-Gov) is to provide effective services to citizens through the Internet and the World Wide Web. New Zealand, Australia, Singapore and Canada have started e-Gov services from land registry departments. The England and Wales Land Registry in the UK is one of the first government services to adopt e-Gov.

PAPER 3:

[An E Governance model using cloud computing technology for Developing Countries, IIIT Allahabad, 2010, 9]

1. ABSTRACT

Information and communication technology (ICT) is an emerging era of present decade and playing a vital role for the advancement of our global society. As the popularity of ICT enabled application is increasing E-Governance has been established as a revolution not only in developed country but also in developing nations. E-Governance is a way to achieve good governance through ICT in order to have better citizen participation. The sole aim of E-Governance is to establish strong and transparent relationship between citizens, government organization and business organization so that a faith could be developed among all. This could also ensure improved services, optimized Government process and an ideal democratic environment for government operations.

2. INTRODUCTION

Information and communication technology (ICT) is an emerging era of present decade and playing a vital role for the advancement of our global society for getting timely information and making communication faster. As the popularity of ICT enabled application is increasing, E-Governance has been established as a revolution not only in developed countries but also in developing nations. So E-Governance is the necessity of time for not only in developed countries but also developing nations.

3. E-GOVERNANCE REQUIREMENTS

E-Governance provides a way to improve government work and make easy sharing of information with the citizens. For practical implementation of E-Governance it is important to identify certain factors which are going to play key role during deployment

of E-Governance. The e-governance requirements are divided into three parts for proper investigation which is shown in fig 1:

Figure 2: Requirements of E-Governance

3.1. Government to Government:

The need of government to government functionality is fully related to administration, inter government control and monitor on the government. It focuses on the inter communication between two governments and other aspects of the government to government communication.

3.2. Government to Business:

Business organizations are important for any country and contributing substantially for the development. Government also keep an eye on these organization for enforcing the policies ,standards and accountability .here it essentially required to automate Government to business interaction such as tender management, contract management ,tax payments etc.

3.3. Government to Citizen:

Basically, the prime responsibility of any government is citizen service. Government to citizens interface is required to facilitate them basic emanates, proper education,

4. COMPONENTS OF A TYPICAL E-GOVERNANCE APPLICATION

Three tier architecture for E-Governance is shown below in figure 2. The architecture consists three layers of the system. In the data storage layer, proper schema for data storage has been defined for e-governance. It provides foundation for storage for data which is coming from different processes and serves the request of the any process which demands the data. Application layer works between user layer and data layer. It facilitates the connection between user process and data layer. The upper layer or user layer has a Graphical User Interface for the user interaction with the system. In E-Governance system, a user can interact with the help of upper layer (GUI) and can get information from the system. The government officials and legislatures can update the information of the system with the help of upper layer.
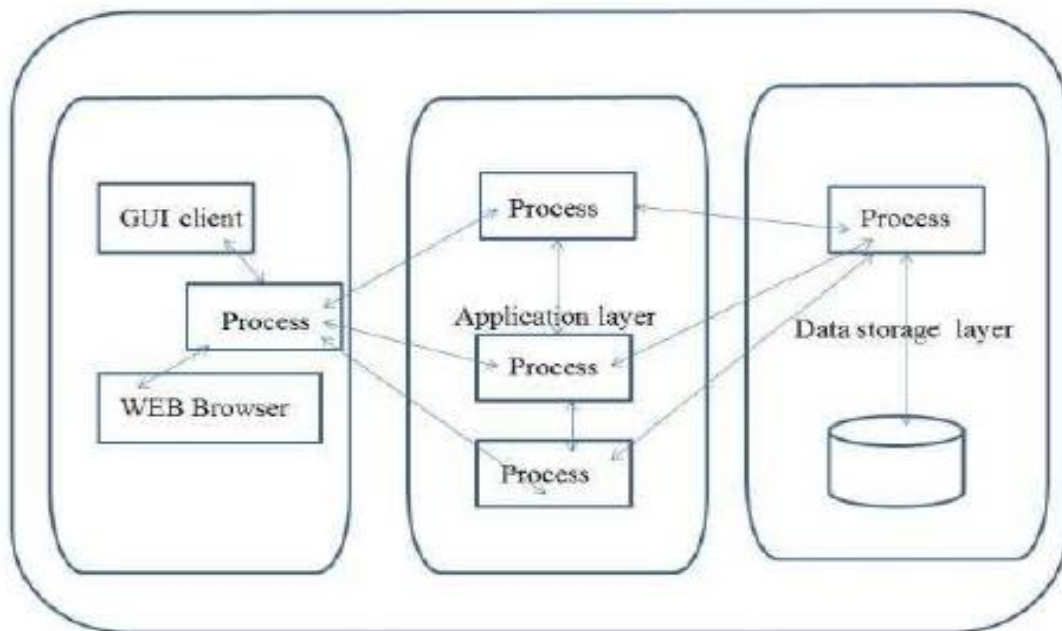

Figure 3: Typical architecture of E-Governance application

5. INDIAN E- GOVERNANCE CLOUD STRATEGY:

The proposed E- Governmental cloud provides a complete infrastructure for the implementation of government services including administrate and regulatory and social welfare. Each cloud model has its own benefits and level of assurance for implementing the e-governance in India. The cloud strategy for e-governance in India is based on dedicated cloud for their specific services designed for E-Governance. Government will provide citizens services and other facilities like customer relationship, web management and business support through its government cloud. In this way, the government cloud is also responsible for standardization of the services.

6. SWOT ANALYSIS OF PROPOSED MODEL OF E-GOVERNANCE

SWOT study focuses on four main points: Strength, Weakness, Opportunity and Threat analysis of e-governance application. Nowadays internet is an integral part of our life. Government also applies these methods to handle their operations and communicate with their citizens for making public confidence for them. Cloud computing provides a cost effective method to implement e-governance applications for any developing country.

6.1 Strength:

E-government projects utilize capabilities of internet technologies which are very advanced these days. Mobile telephony provides a way for providing services on mobile phones. Ability of cloud computing to scale up services at any instance gives strength to e-governance application. Cloud offers the ability to handle time related computing. Suppose an organization handles homogenous load throughout year but in specific month they need more resources. In this situation cloud computing provides solution by providing more resources. Cloud reduces the maintenance cost, infrastructure cost and energy consumption. Maintenance cost mainly due to technology up gradation. Time to time up gradation of server configuration, with proper security mechanism and data

management comes under maintenance phase. Cloud computing provide full control over access mechanism. It provides different access mechanism for different type of users.

6.2. Weakness:

The major problem of implementing e-governance employee for development of e-government projects. Egovernance applications have no usefulness in low level areas

such daily use applications because of bandwidth shortage. Organization worried about losing physical control over data and information. Cloud service providers are also unable to give information about data servers and location data to the client. Application is low level of literacy and shortage of skilled.

6.3. Opportunities:

The main part of providing e-governance services is to provide hardware setup at low cost. Availability of e-governance in rural areas is achieved by providing services on

cheap mobile phones. Mobile technology can be used to provide services at government level. Media can play important role in spreading awareness about e-government services. Public private partnership will also be useful in e-gov application.

6.4.Threats:

 Some basic threats in cloud e-governance are associated with increasing manpower cost, increment in the broadband cost and no reachability of internet. Without support of

legislators, cloud e-governance cannot be implemented. There is also a regional language factor in the success of the cloud e-governance. A major threat is associated with the security of the cloud based governmental data which may be hacked. PPP model may make impact on the partnership with the private sector so it may be a threat to the private sector. There is a big threat from the entrenched incumbents. There are some threats

from the lack of standards in cloud technology.

7. CONCLUSION

Cloud provides a better way to offer services to clients related to different regions. Cloud follow service oriented architecture and provide low cost hardware/software resources. E-governance could use both service oriented architecture and cloud architecture and can provide services to citizens and governments at low operating cost. In this paper, a novel cloud computing based E-Governance model has been presented .A SWOT analysis is also performed to highlight the strength and challenges of the proposed model. The paper also suggests three tier cloud architecture especially for Indian scenario which could transform the nation into information society.

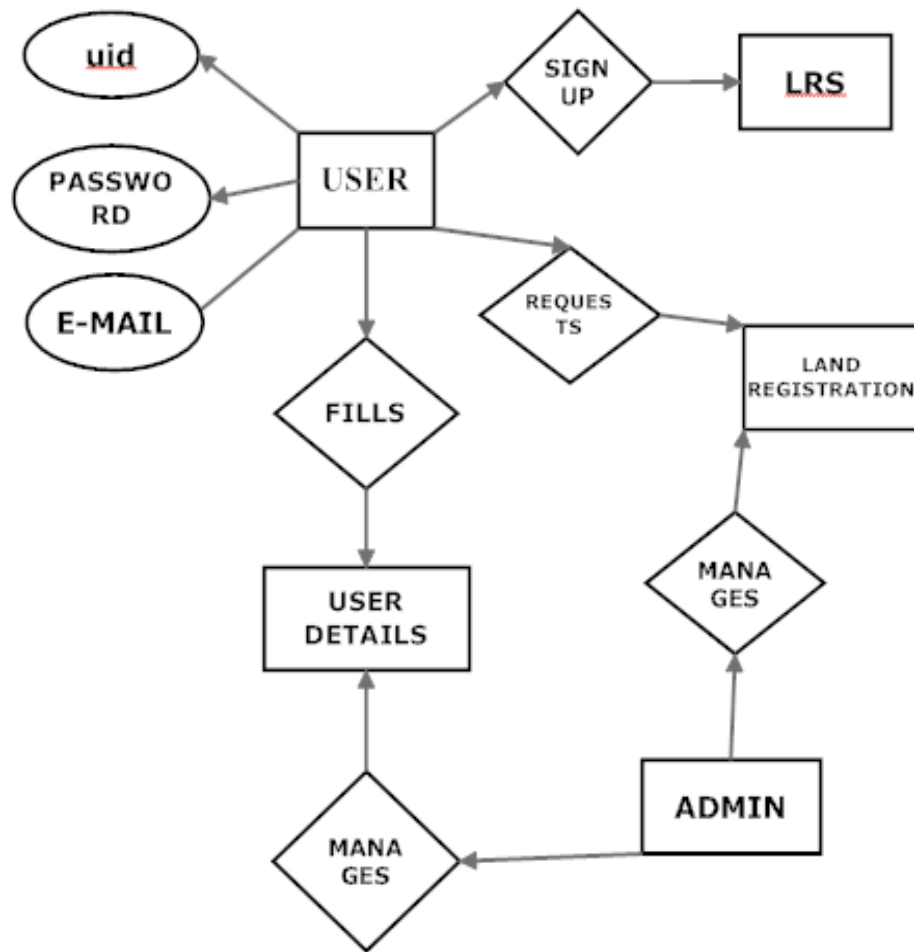# CHAPTER 3

DESIGN AND DOCUMENTATION

Figure 4: ER Diagram

An entity-relationship (ER) diagram is a graphical representation of entities and their relationships to each other, typically used in computing in regard to the organization of data within databases or information systems. An entity is a piece of data-an object or concept about which data is stored.
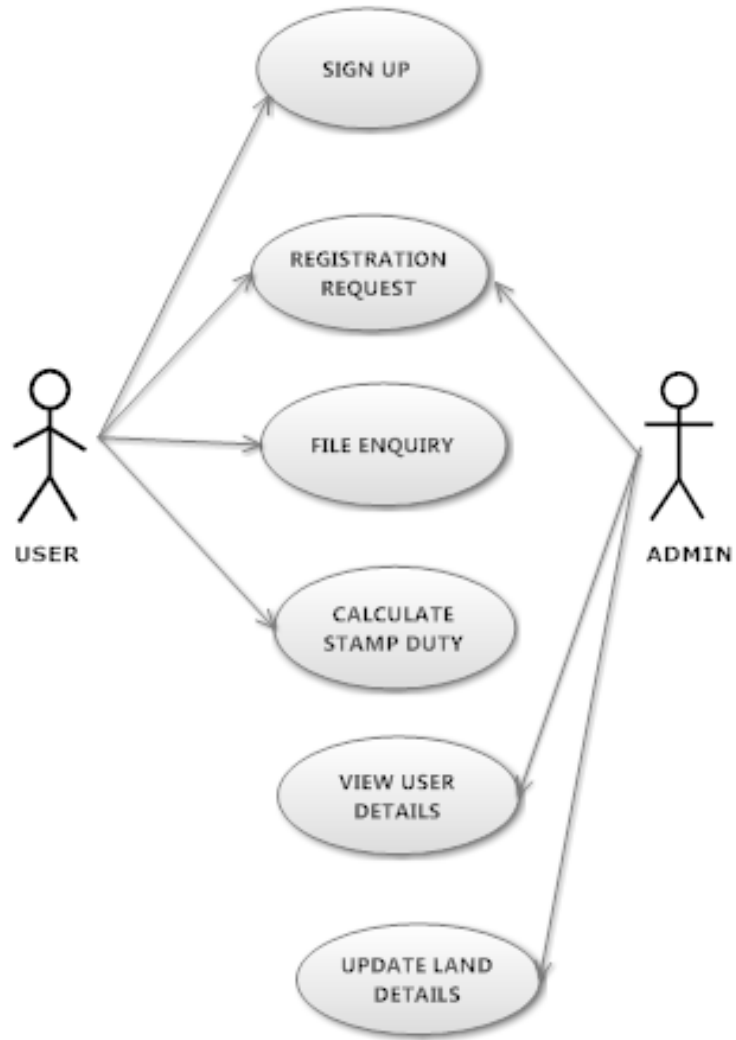
FIGURE 5: Use Case Diagram

Use case diagram is the representation of a user's interaction with the system and depicting the specifications of the use case. It can portray the different types of users of a system and the cases. It is a simple graphical formalism that can be used to represent a system in terms of the input data to the system, various processing carried out on these data, and the output data is generated by the system.
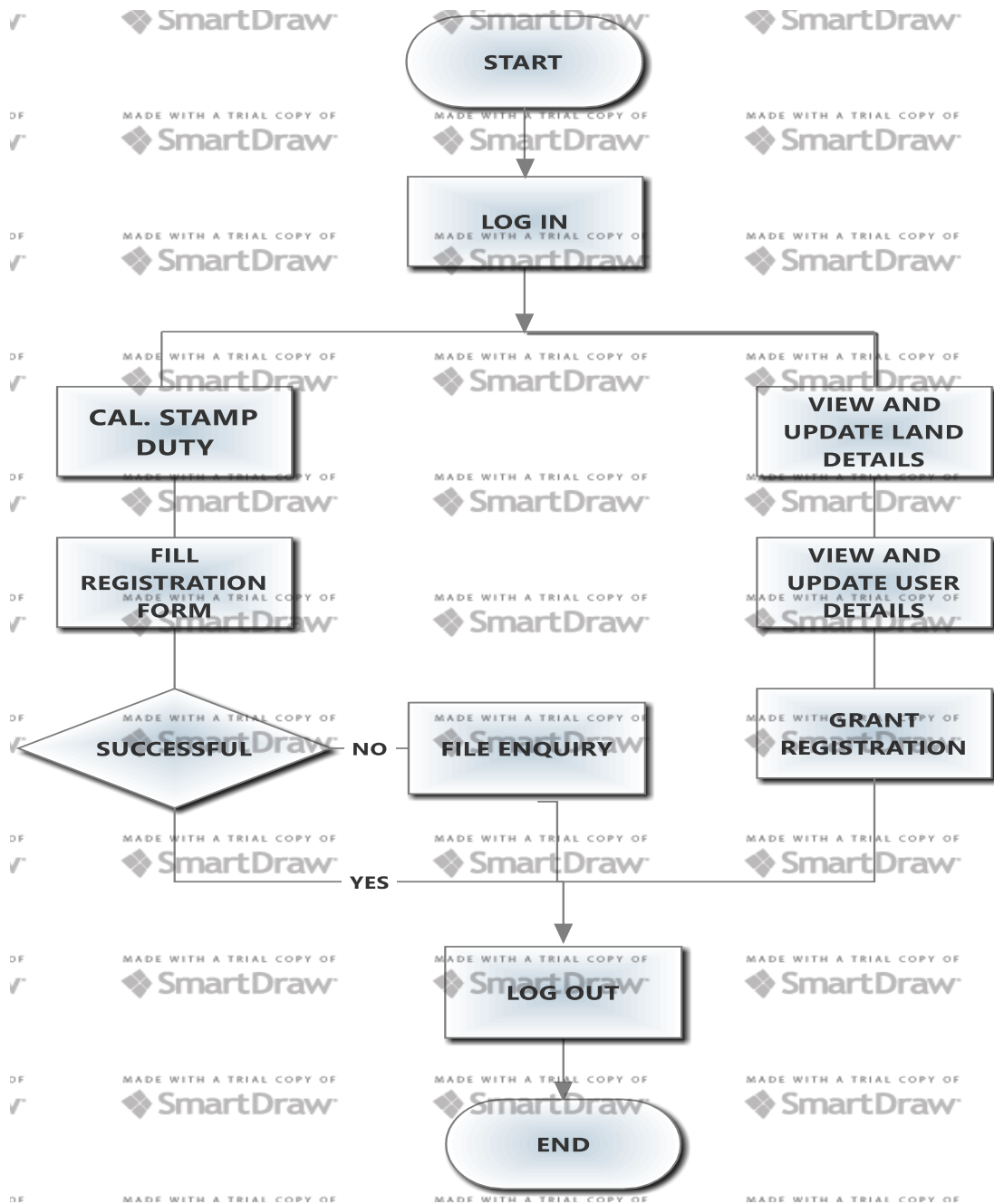
FIGURE 5: FLOW CHART

A flowchart is a formalized graphic representation of a logic sequence, work or manufacturing process, organization chart, or similar formalized structure. The purpose of a flow chart is to provide people with a common language or reference point when dealing with a project or process.

COMPARISON TABLE

S. No.	State	Land Record			Property		
		Manual	Computerized	Sampling Units	Manual	Computerized	Sampling Units
1.	Delhi	361	396	4 districts	804	804	9
2.	Gujarat	RTC: 807 Mutation: 42	RTC: 807 Mutation:187	42 locations across 16 talukas	798	798	24 locations across 15 talukas
3.	Haryana	208	208	12 locations	204	204	16 locations
4.	HP	598	598	4 locations	600	600	4 locations
5.	Kerala	N.A.	N.A.	N.A.	800	800	4
6.	MP	800	800	32 villages	N.A.	N.A.	N.A.
7.	Orissa	RTC: 229 Mutation: 607	RTC: 229 Mutation:607	32 locations across 16 tehsils and 4 districts	681	681	32 locations in 4 districts
7.	Punjab	N.A.	N.A.	N.A.	195	735	6
8.	Rajasthan	810	810	15 delivery centers across 4 districts	803	803	17 service centers across 5 districts
9.	Tamil Nadu	RTC: 449 Mutation: 464 Both: 112	RTC: 449 Mutation: 464 Both: 112	45 villages across 15 talukas and 4 districts	840	840	30 SROs in 4 districts
10.	Uttarakhand	800	800	32 locations covered by 16 delivery centers	650	650	6 SROs
11.	West Bengal	794	794	5	799	799	4

TABLE 7: COMPARISON TABLE

Table 7 provides the number of users surveyed in the project for the manual and computerized modes of delivery and the number of sampling units from which these were drawn. In most of the cases it was possible to find respondents who had experienced both the manual delivery as well as the computerized delivery. However in three states/projects (land record in Haryana, property registration in Punjab and transport in Rajasthan), respondents that had had experience with manual delivery were difficult to find.

CHAPTER 4:

PROJECT REQUIREMENTS

4.1 SOFTWARE SPECIFICATION

- ➢ Operating System: Windows 7/8
- ➢ Technology : JSP, Java, MySql, HMTL, CSS
- ➢ Tools : NetBeans, WAMP, Dreamweaver, SmartDraw

4.2 HARDWARE SPECIFICATION

- ➢ Processor: x86 compatible processor
- ➢ RAM: 512 MB or greater
- ➢ Hard Disk: 20 GB or greater
- ➢ Monitor: VGA/SVGA
- ➢ Keyboard: 104 keys standard
- ➢ Mouse: 2/3 button. Optical/ Mechanical.

4.3 USER CHARACTERISTICS

Every user :

- ➢ Should be comfortable with basic working of the computer
- ➢ Must have basic knowledge of English
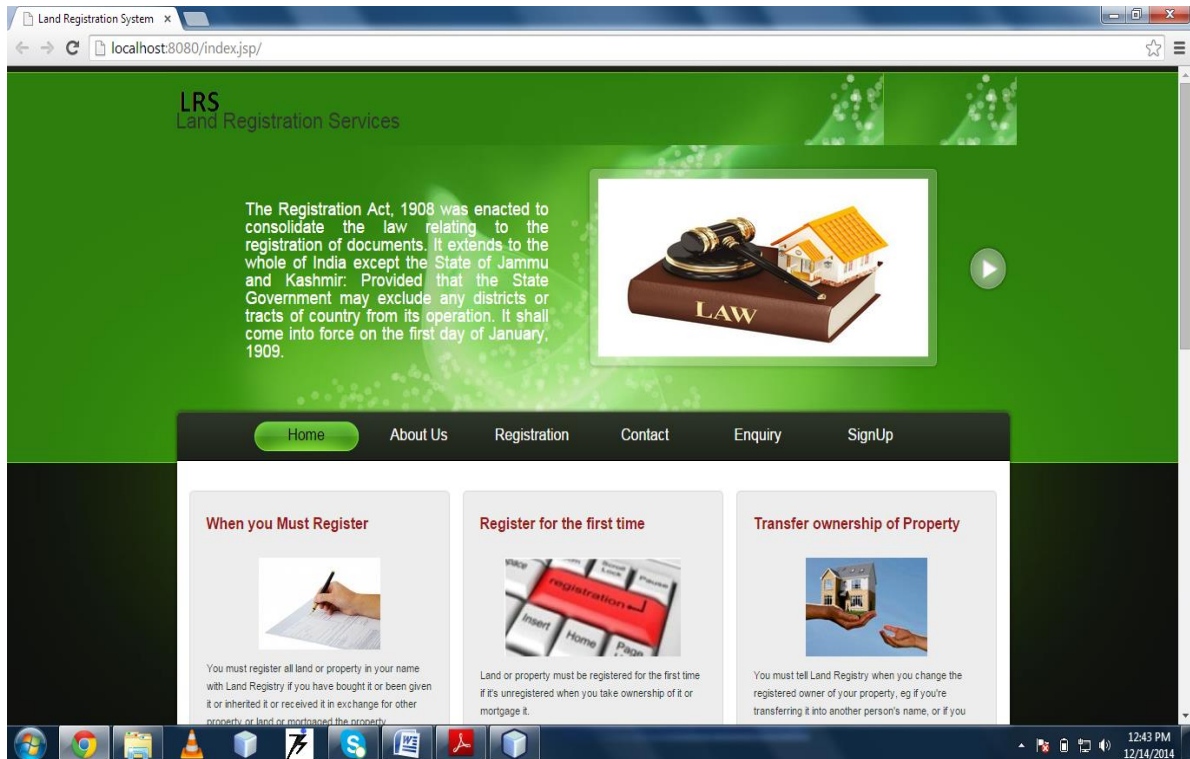- ➢ Must carry a login ID and password used for authentication

4.4 CONSTRAINTS

- ➢ The GUI is restricted to English
- ➢ Login ID and password used for identification of user/administrator. There is no facility for a guest login.
- ➢ The application is applicable only to the state of Himachal Pradesh.

CHAPTER 5

IMPLEMENTATION

SNAPSHOTS

This gives the view of home page of the website.

Home page has various options like about us, registration-where registered user will request for the registration of his/her land, contact us, enquiry-where user can file any complaint, sign up.
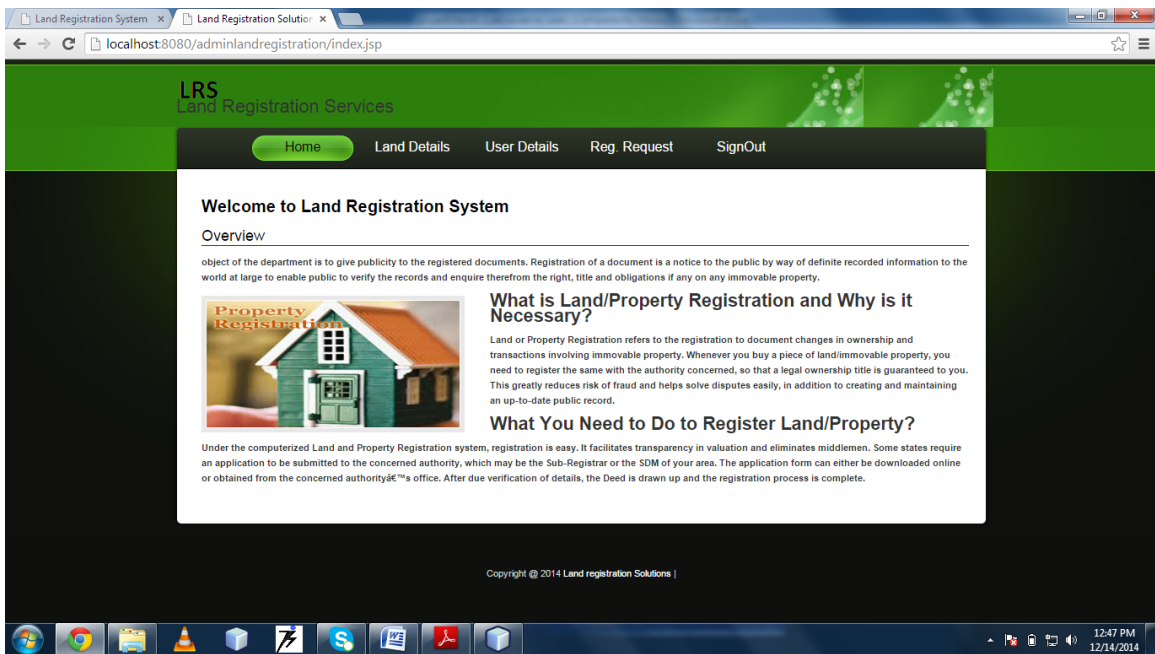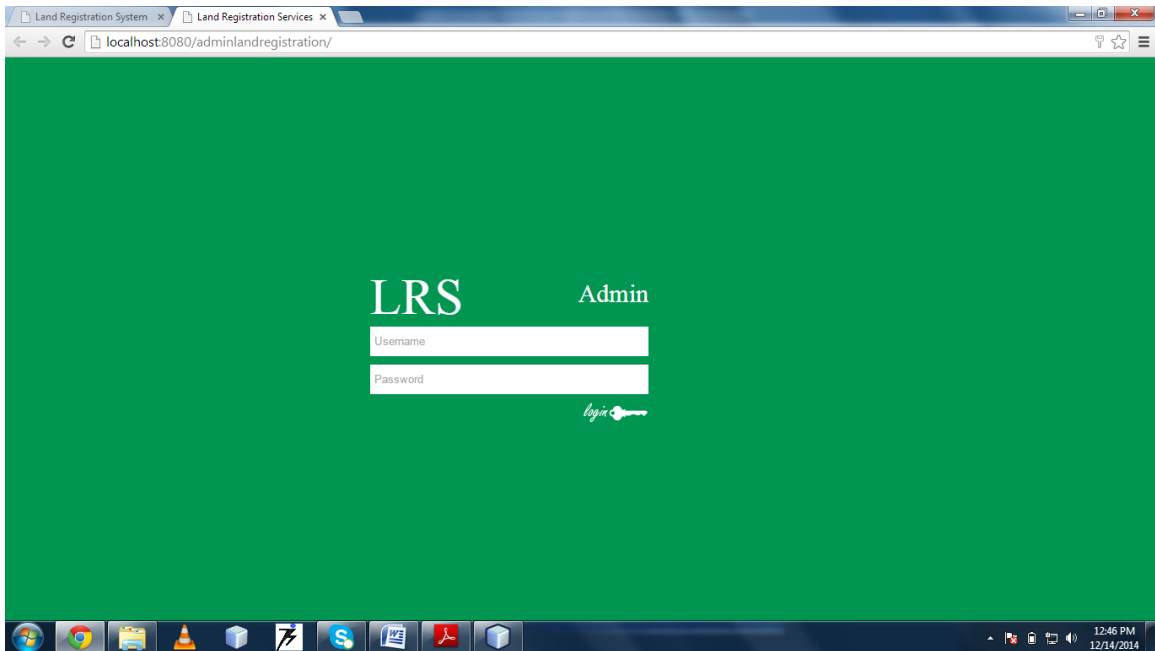
It also has the feature of calculating stamp duty- the only legal formality to be fulfilled while registration.
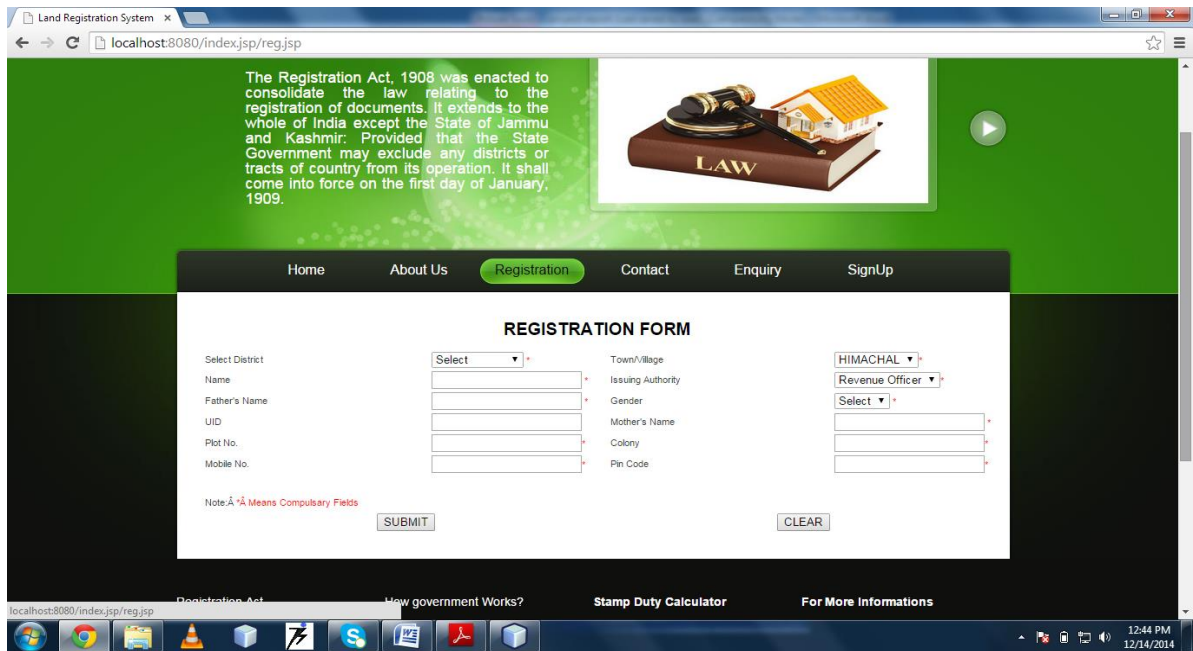
These are the various forms that the user need to fill during the process.

This is the feature of enquiry form provided for the convenience of the citizens. Through this, one can file any type of complaint or give feedback about the process.

This is the view of admin home page, where he is provided with various options of viewing and updating user and land details.

DATABASE TABLES:

Table ▲	Action						Ro
land_records	Browse	Structure	Search	Insert	Empty	Drop	
registration	Browse	Structure	Search	Insert	Empty	Drop	
signup	Browse	Structure	Search	Insert	Empty	Drop	
town	Browse	Structure	Search	Insert	Empty	Drop	
4 tables	Sum						

Table 1: Database structure

The structure gives the number of tables with the table names that are build in the database of the application. The database is named as 'LAND' in which there are two tables, namely, 'REGISTRATION' and 'SIGUP' that are to be used here.

#	Name	Type	Collation	Attributes	Null	Default	Ext
1	district	varchar(20)	latin1_swedish_ci		No	None	
2	town	varchar(20)	latin1_swedish_ci		No	None	
3	uname	varchar(40)	latin1_swedish_ci		No	None	
4	authority	varchar(20)	latin1_swedish_ci		No	None	
5	fname	varchar(40)	latin1_swedish_ci		No	None	
6	gender	varchar(10)	latin1_swedish_ci		No	None	
7	uid	varchar(40)	latin1_swedish_ci		No	None	
8	mname	varchar(40)	latin1_swedish_ci		No	None	
9	plot	int(10)			No	None	
10	colony	varchar(40)	latin1_swedish_ci		No	None	
11	mobile	varchar(20)	latin1_swedish_ci		No	None	
12	pin	varchar(20)	latin1_swedish_ci		No	None	
13	pname	varchar(40)	latin1_swedish_ci		No	None	
14	cname	varchar(40)	latin1_swedish_ci		No	None	
15	status	varchar(20)	latin1_swedish_ci		No	None	

Table 2: Registration table structure

This shows the structure of registration table of the database named land. The registration table consists of twelve columns with each column having a specific type and maximum length. It has 'uid' as its primary key.

#	Name	Type	Collation	Attributes	Null	Default	Extra
1	uid	text	latin1_swedish_ci		No	None	
2	pwd	text	latin1_swedish_ci		No	None	
3	email	text	latin1_swedish_ci		No	None	
4	gender	varchar(10)	latin1_swedish_ci		No	None	
5	phone	text	latin1_swedish_ci		No	None	
6	address	text	latin1_swedish_ci		No	None	
7	city	text	latin1_swedish_ci		No	None	
8	state	text	latin1_swedish_ci		No	None	
9	pin	text	latin1_swedish_ci		No	None	

Table 3: Signup table structure

This shows the structure of signup table of the database named land. The signup table consists of ten columns with each column having a specific type and maximum length. It has 'username' as its primary key.

#	Name	Type	Collation	Attributes	Null	Default	Extra
1	district	text	latin1_swedish_ci		No	None	
2	town	text	latin1_swedish_ci		No	None	

Table 4: Town Table Structure

This shows the structure of town table of the database named land. The town table consists of two columns namely district and town. This table lists the various towns under the districts of Himachal Pradesh.

CONCLUSION

The application software has been developed using Wamp and java database programming connectivity via MySQL driver so as to meet the requirements of an government operations, thereby ensuring quality performance .The data can be accessed, manipulated and retrieved very easily. To conclude this software has proved to be a user friendly interface.

The application can be proved to be of great use to the government of India as one of the major services is implemented here and for the state where such facility is not present as of now.

FUTURE WORK

The application deals with the land registration service provided by the government of India. Here it is applicable only for the state of Himachal Pradesh. In near future, it could be extended to incorporate more of the states.

The application can be extended on the cloud. Cloud computing is the ideal technology that can be used for this type of application. It is so because only cloud can handle such a large amount of data that is needed to implement such a service. Moreover, through cloud computing there is less of storage problem. Moreover, backup need not be done. Be any case, your data is secure on the cloud as whole of the data will be stored on virtual cloud rather than on any system.

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APPENDIX A

Description of Tools

NetBeans:

NetBeans refers to both a platform framework for Java desktop applications, and an integrated development environment (IDE) for developing with Java, JavaScript, PHP, Python (no longer supported after NetBeans 7), Groovy, C, C++, Scala, Clojure, and others. The NetBeans IDE 7.0 no longer supports Ruby and Ruby on Rails, but a third party has begun work on a separate plug-in. The NetBeans IDE is written in Java and can run on Windows, Mac OS, Linux, Solaris and other platforms supporting a compatible JVM. A pre-existing JVM or a JDK is not required. We are working with NetBeans 7.1.2.
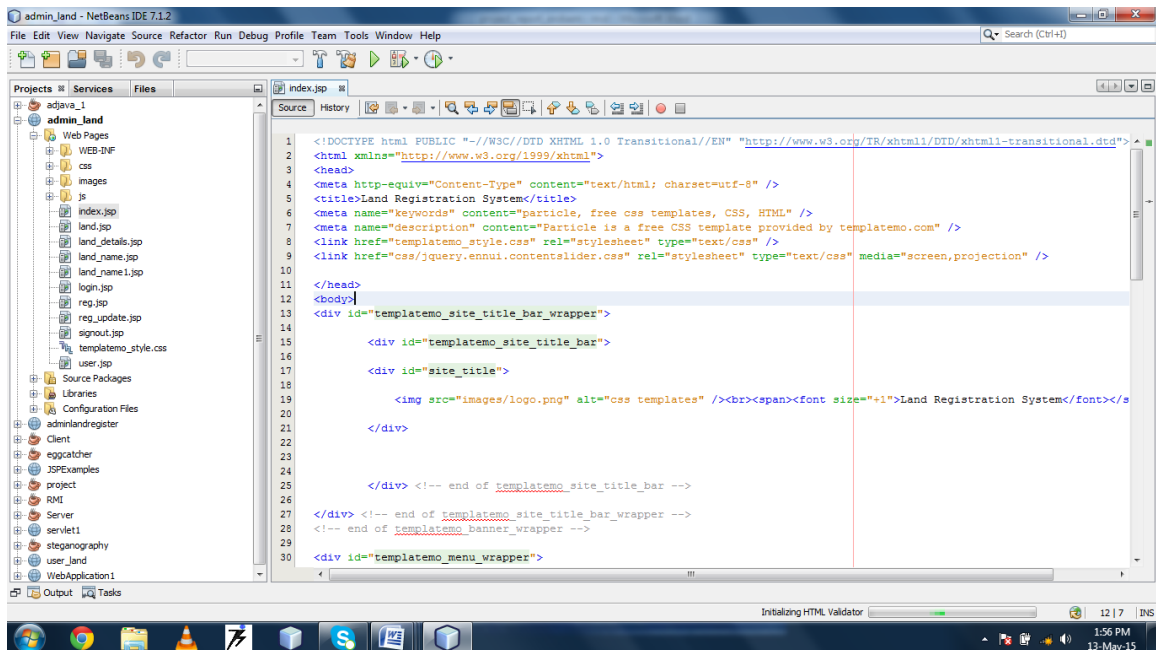

Fig 7: NetBeans Window

The NetBeans platform allows applications to be developed from a set of modular software components called modules. Applications based on the NetBeans platform (including the NetBeans IDE) can be extended by third party developers.

 NetBeans IDE NetBeans IDE is an open-source integrated development environment. NetBeans IDE supports development of all Java application types (Java SE (including JavaFX), Java ME, web, EJB and mobile applications) out of the box. Among other features are an Ant based project system, Maven support, refactorings, version control (supporting CVS, Subversion, Mercurial and Clear case).Modularity: All the functions of the IDE are provided by modules. Each module provides a well-defined function, such as support for the Java language, editing, or support for the CVS versioning system, and SVN. NetBeans contains all the modules needed for Java development in a single download, allowing the user to start working immediately.

Modules also allow NetBeans to be extended. New features, such as support for other programming languages, can be added by installing additional modules. For instance, Sun Studio, Sun Java Studio Enterprise, and Sun Java Studio Creator from Sun Microsystems are all based on the NetBeans IDE.

Wamp Server:

WampServer is a Windows web development environment. It allows you to create web applications with Apache, PHP and the MySQL database. It also comes with PHPMyAdmin to easily manage your databases. WampServer installs automatically (installer), and its usage is very intuitive. You will be able to tune your server without even touching the setting files. WampServer is the only packaged solution that will allow you to reproduce your production server. Once WampServer is installed, you have the possibility to add as many Apache, MySQL and PHP releases as you want.
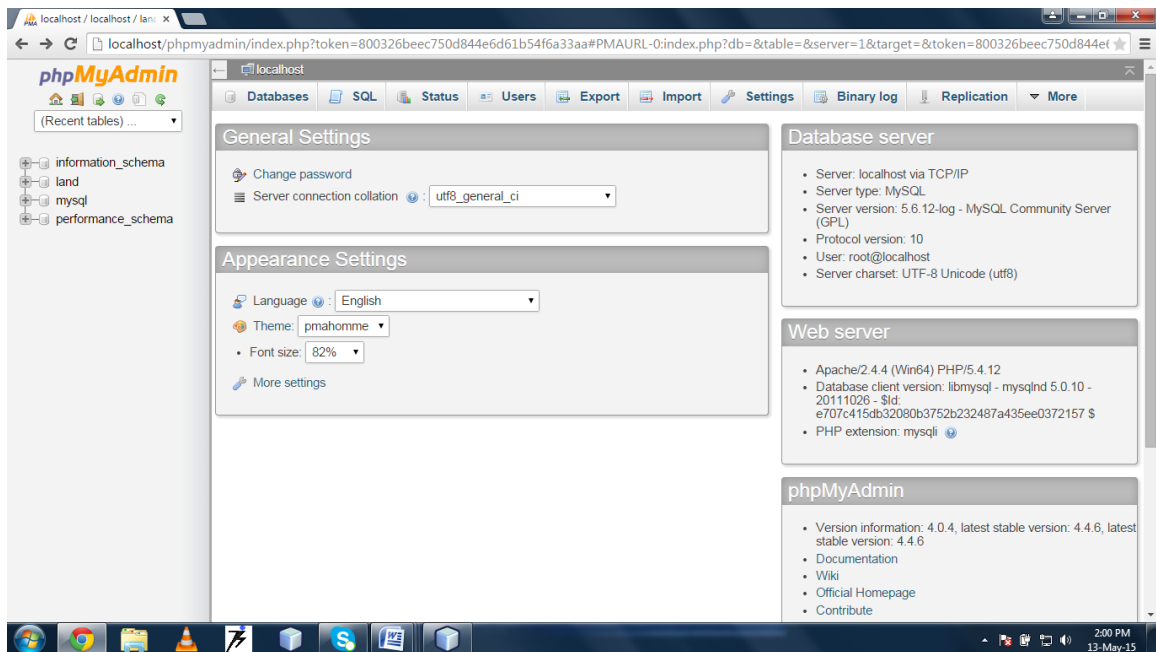

Fig 8: Wamp Server

Wamp server has PhpMyAdmin to handle databases. Here we are using wamp server 5.6.12 and PhpMyAdmin version 4.0.4.

phpMyAdmin is a free and open source tool written in PHP intended to handle the administration of MySQLwith the use of a web browser. It can perform various tasks

such as creating, modifying or deleting databases, tables, fields or rows; executing SQL statements; or managing users and permissions.

phpMyAdmin can manage a whole MySQL server (needs a super-user) as well as a single database. To accomplish the latter you'll need a properly set up MySQL user who can read/write only the desired database. It's up to you to look up the appropriate part in the MySQL manual.

Using the graphic interface of phpMyAmin you can easily make, delete or edit databases and manage all their elements: tables with their rows and columns, indexes, fields, statements and queries. You can control users' permissions and administer several servers simultaneously. PhpMyAdmin will help you to easily synchronize databases and search through them, import text files and monitor changes in your databases. You can execute complex quires and SQL statements, create and edit functions, events and triggers. With phpMyAdmin you can back up your databases and export data into different formats including CSV (comma-separated values), SQL, XML, PDF, OpenDocument Text and Spreadsheet, Word, Excel, LATEX etc. PhpMyAmin supports foreign keys, mysqli and InnoDB.

APPENDIX B

SOURCE CODE:

Enquiry request

```java
public class enquiry extends HttpServlet

{

  @Override

  protected void doPost(HttpServletRequest request, HttpServletResponse response)

  throws ServletException, IOException

  {

    PrintWriter out = response.getWriter();

    response.setContentType("text/html;charset=UTF-8");

    String name = request.getParameter("name");

    String msg = request.getParameter("msg");

    String email = request.getParameter("email");

    SmtpMail companymail = new SmtpMail(name,msg,email);

    out.print(""+name+"-----------"+msg+"-----------"+email);

  }

}
```

Enquiry Mail Handling

```java
public class SmtpMail {

    public static String mailgone="no";

    public static void main(String ar[])

    {

        new SmtpMail("aaa","zzz","ccc");

    }

SmtpMail(String name,String msg , String email)

{

String host = "smtp.gmail.com";

String from = "landregistry2014@gmail.com";

String to = "landregistry2014@gmail.com.com";

String subject = name+"   Enquiry";

String messageText= "<strong>" +"message:" +"</strong>" +msg+"<br>" +
"<strong>"+"User email id:"+"</strong>"+email;

final String username = "landregistry2014@gmail.com";

final String password1 = "registry2014";

Properties props = new Properties();
```

```java
props.put("mail.smtp.host", host);

props.put("mail.smtp.socketFactory.port", "465");

props.put("mail.smtp.socketFactory.class","javax.net.ssl.SSLSocketFactory");

props.put("mail.smtp.auth", "true");

props.put("mail.smtp.port", "465");

javax.mail.Session session1 = javax.mail.Session.getInstance(props,new
javax.mail.Authenticator()

{

@Override

protected PasswordAuthentication getPasswordAuthentication() {

return new PasswordAuthentication(username, password1);

}

} );

try

{

Message msg1 = new MimeMessage(session1);

msg1.setFrom(new InternetAddress(from));

InternetAddress[] address1 = { new InternetAddress(to) };

msg1.setRecipients(Message.RecipientType.TO, address1);
```

```java
msg1.setSubject(subject);

msg1.setSentDate(new Date());

msg1.setContent(messageText, "text/html");

Transport.send(msg1);

}

catch (MessagingException e)

{

   System.out.print(e);

}

}

}
```

Connectivity code:

```java
public class insert_land_name extends HttpServlet {

 @Override

  protected void doPost(HttpServletRequest request, HttpServletResponse response)

  throws ServletException, IOException

 {

     response.setContentType("text/html;charset=UTF-8");
```

```java
    PrintWriter out = response.getWriter();

String district = request.getParameter("district");

String town1="",town="";

try

{

Class.forName("com.mysql.jdbc.Driver");

Connection con =
DriverManager.getConnection("jdbc:mysql://localhost/land","root","");

PreparedStatement ps = con.prepareStatement("select town from town where district
=?");

ps.setString(1,district);

ResultSet rs = ps.executeQuery();

while(rs.next())

   {

}

con.close();

}

catch(Exception e)

{

System.out.println(e);
```

```
} } }
```

Authentication code:

```java
public class logic extends HttpServlet {

  @Override

  protected void doPost(HttpServletRequest request, HttpServletResponse response)

  throws ServletException, IOException

  {

  response.setContentType("text/html;charset=UTF-8");

    PrintWriter out = response.getWriter();

        try

    {

            String id = request.getParameter("admn_id");

            String pwd = request.getParameter("admn_pswrd");

            if(id.equals("admin")&& pwd.equals("admin"))

            {

                HttpSession ss = request.getSession();

                ss.setAttribute(id,"admin");

                ss.setAttribute(pwd,"admin");

        out.print("success");
```

```
            }

        else

            {

          out.print("fail");

            }

            }

        catch(Exception e)

        {

            out.print(e);

        }

    }

}
```

Record Deletion:

```
public class user_delete extends HttpServlet {

    @Override

    protected void doPost(HttpServletRequest request, HttpServletResponse response)

    throws ServletException, IOException {

        response.setContentType("text/html;charset=UTF-8");
```

```java
    PrintWriter out = response.getWriter();

String email=request.getParameter("email");

try

{

Class.forName("com.mysql.jdbc.Driver");

Connection con =
DriverManager.getConnection("jdbc:mysql://localhost/land","root","");

PreparedStatement ps = con.prepareStatement("delete from signup where email=?");

ps.setString(1,email);

ps.executeUpdate();

con.close();

}

catch(Exception e)

{

System.out.println(e);

    }

out.print("Record is Deleted Sucessfully");

  }

}
```

Sign Out Page:

```
<%@page import="sun.rmi.log.LogInputStream"%>

<%

String uname = (String)session.getAttribute("id");

String pwd = (String)session.getAttribute("pwd");

session.invalidate();

response.sendRedirect("login.jsp");

%>
```

CSS Snippet:

```
a:link, a:visited { color: #0066CC; text-decoration: none; font-weight: normal; }

a:active, a:hover { color: #CC0000; text-decoration: underline; }

.cleaner_h50 { clear: both; width:100%; height: 50px; }

.cleaner_h60 { clear: both; width:100%; height: 60px; }

h2 {

        margin: 0 0 10px 0;

        padding: 2px 0;
```

```css
        font-size: 20px;

        line-height: 24px;

        font-weight: bold;

        color: #000000;

}

.margin_r_15 { margin-right: 15px; }

#templatemo_menu li a:hover, #templatemo_menu li .current {

        color: #000000;

        background:url(images/templatemo_button_01.png) no-repeat;

}


.box .box_content {

        padding: 15px 20px 15px 20px;

}

.box .box_content {

        padding: 15px 20px 15px 20px;

}
```