

## Developing An Application For M-GIS To Access Geoserver Through Mobile For Importing Shapefile

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### ABSTRACT:

Mobile GIS emerged in the 1990s, with integration of GPS is one of the leading technique. In mobile GIS shapefiles are used as ArcGIS. It is a Location Based Services which can be defined as any application that extends spatial information processing or GIS capabilities to end users (based on their geographic location) (ESRI 2000 & 2001d). improving since 2000.

**The objective of present work is to develop a mobile application for accessing geoserver which supports a great functionality to import shapefile by the help of handheld device (mobile)** An shapefiles as defined by ESRI and it consists of a main file, an index file, and a dBASE file.The present application works on the client mobile phone for accessing the geoserver on the wireless toolkit. The dBase file associated

with a shape file contains the attribute data and essentially represents a single database table.

**Geoserver is an open source software server written in Java that allows users to share and edit geospatial data. Designed for interoperability, it publishes data from any major spatial data source using open standards.** With the help of wireless technology we can develop this application for distributed system.It will support help in fetching the shape file from the different location. It is the midlevel software suite designed for advanced editing of spatial data published in the proprietary ESRI format.

**Key words:** Shape file, Geoserver, digital assistant ( mobile ,pda) , .NET, wireless technology.

### INTRODUCTION

Introducing Mobile GIS technology in combination with Global Positioning System (GPS) technology, data in the field is stored digitally and it is ready for treatment back in the desk. The extension of a GIS from the office into the field is Mobile GIS. Mobile GIS emerged in the 1990s, with integration of GPS, mobile data connections and geographic information in a portable handheld device. It allows to access, capture, store, and update, manipulate, analyze, and display geographic information directly in the field. More technologies, such as: mobile

devices, GPS technology, wireless communications for Internet GIS access, GIS software for mobile platforms are evolved with Mobile GIS [1].

Mobile devices are the devices which provide information and services whenever and wherever they are required. In other words “Anywhere ,anytime, any device-this is the short definition of the rapidly growing field of location services. It’s where wireless and GIS technologies meet on the Web and it is changing the way

businesses and individuals operate” (ESRI 2001). The technology of handheld devices has improved since 2000. The various improvements has resulted in developing a high promising technology by taking into account issues like

- Portability,
- Ruggedness,
- All-day battery life,
- Capacity,
- RAM, flash memory and processing speed,
- Improved screen size, brightness and touch-sensitivity
- Wireless networking e.g. Wi-Fi, Bluetooth

A Mobile Geographic Information System (M-GIS) can be defined as the subset of an LBS. Mobile Geographical Information System

(Mobile-GIS) is a Geographical Information System based on mobile computing and mobile Internet. It is not a conventional GIS modified to operate on a smaller computer, but an extension of Web GIS to mobile Internet including wireless Internet/Intranet and mobile communication network. But architectures of Web GIS are unsuitable for Mobile GIS, because of several bottlenecks such as the low-bandwidth of wireless network, the diversity of mobile devices, limited processing power and screen display limitation of mobile devices and the diversity of mobile system platform. In reality , there are some limitations for the mobile handheld devices like their small bandwidth, small screen display, color resolution and its limited application capabilities, although most are being overcome by improvements in their technology [2].

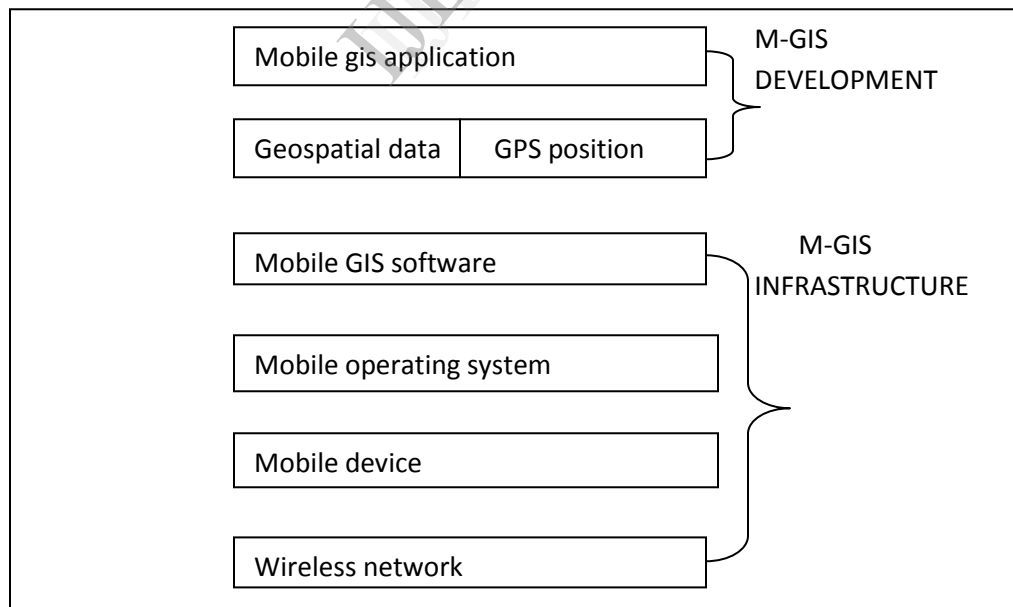
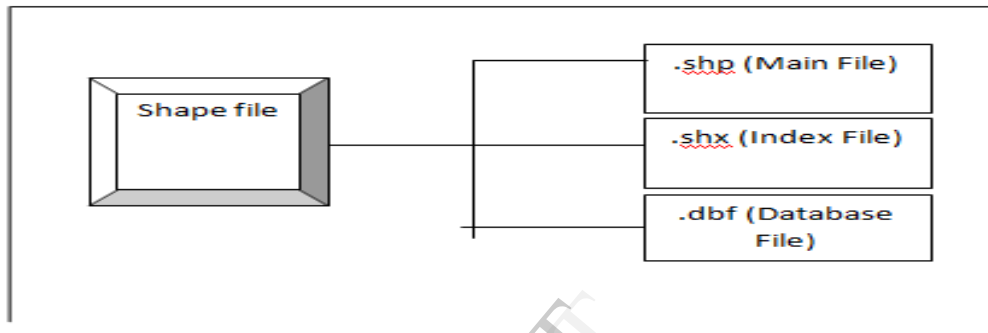


Figure 1: Architecture of Mobile GIS

### SHAPEFILE INTRODUCTION

The Shape file is a popular geospatial vector data format for geographic information systems software. A shapefile is a digital vector storage format for storing geometric location and associated attribute information. This format

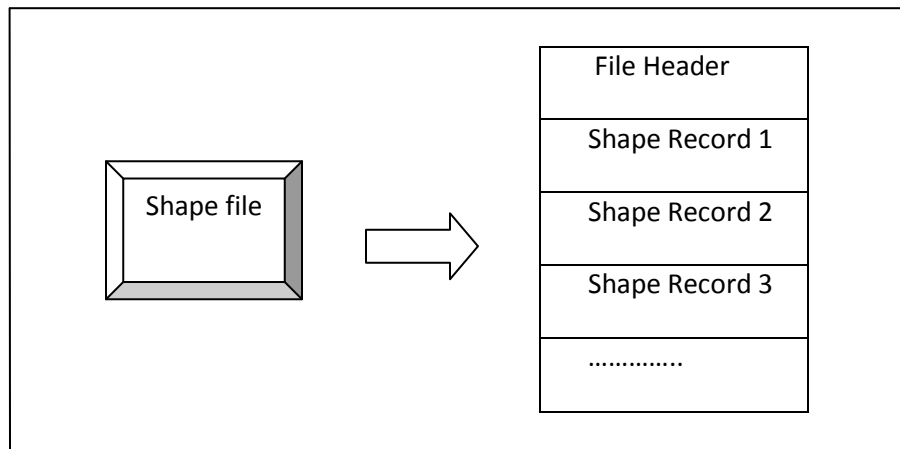
lacks the capacity to topological information. The shapefile format was introduced with arcview version 2 in the beginning of the 1990s. It is now possible to read and write shapefiles using a variety of free and non-free programs.



**Figure 2:** three mandatory extensions of shapefile

As we define in our above figure "shapefile" is quite common, a "shapefile" is actually a set of several files. Three individual files are mandatory to store the core data that comprises a shapefile: ".shp", ".shx", ".dbf", and other extensions on a common prefix name (e.g.,

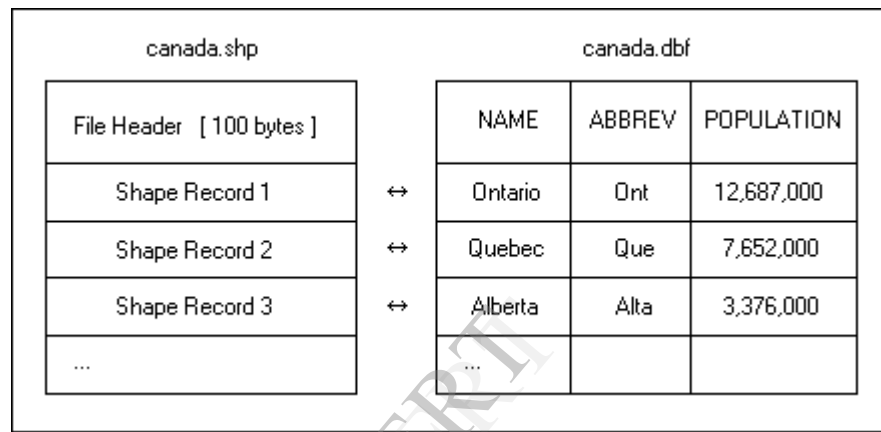
"lakes.\*"). The actual *shapefile* relates specifically to files with the ".shp" extension, but alone is incomplete for distribution, as the other supporting files are required[3].



**Figure 3:** Format of Shape file

The main file (with a .SHP extension) is the primary component and its structure begins with a fixed-length, 100-byte header containing information about the total length of the file, the file version, and the type of shapes it contains. This file header is then followed by a list of variable-length records, with each record defining the geometry for a single ESRI shape. The Shape File class is used to represent the

contents of an entire shape file, and provides the top-level functionality for reading an ESRI shape file. This class offers Public methods for reading the entire shape file at once (including dBase attributes), or reading the file header and shape records in a piece-wise fashion. The latter option is ideal for displaying progress during a shape file read operation[4].



**Figure 4:** interaction between .shp(main file) and .dbf(databasefile).

## METHODOLOGY

### Geospatial database

ArcGIS is built around the geo database, which uses an object-relational database approach for storing spatial data. A geo database is a "container" for holding datasets, tying together the spatial features with attributes. The geo database can also contain topology information, and can model behavior of features, such as road intersections, with rules on how features relate to one another. When working with geo databases, it is important to understand about feature classes which are a set of features, represented with points, lines, or polygons. With shape files, each file can only handle one type of feature. A

geo database can store multiple feature classes or type of features within one file. The integrated geographic database of any place has been created in GIS and consists of spatial database and non spatial database. These two databases have been linked together by common identifiers. The spatial database consists of various thematic maps consisting of point, line and polygon features. The point features have control points. The line features have the road network classes and the polygon features have the buildings, ground and parks.

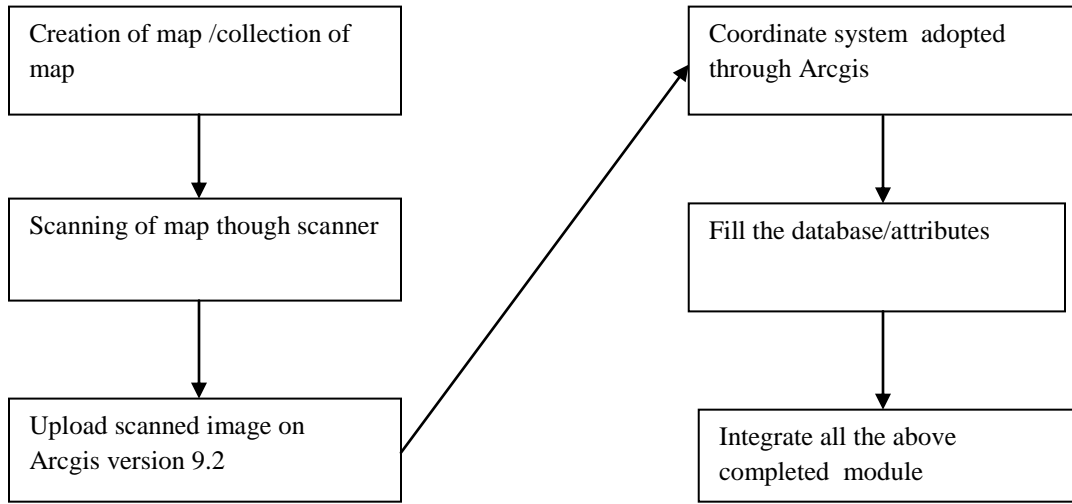


Figure 5: prepration of Geospatial Database

**Methodology to integrate the modules**

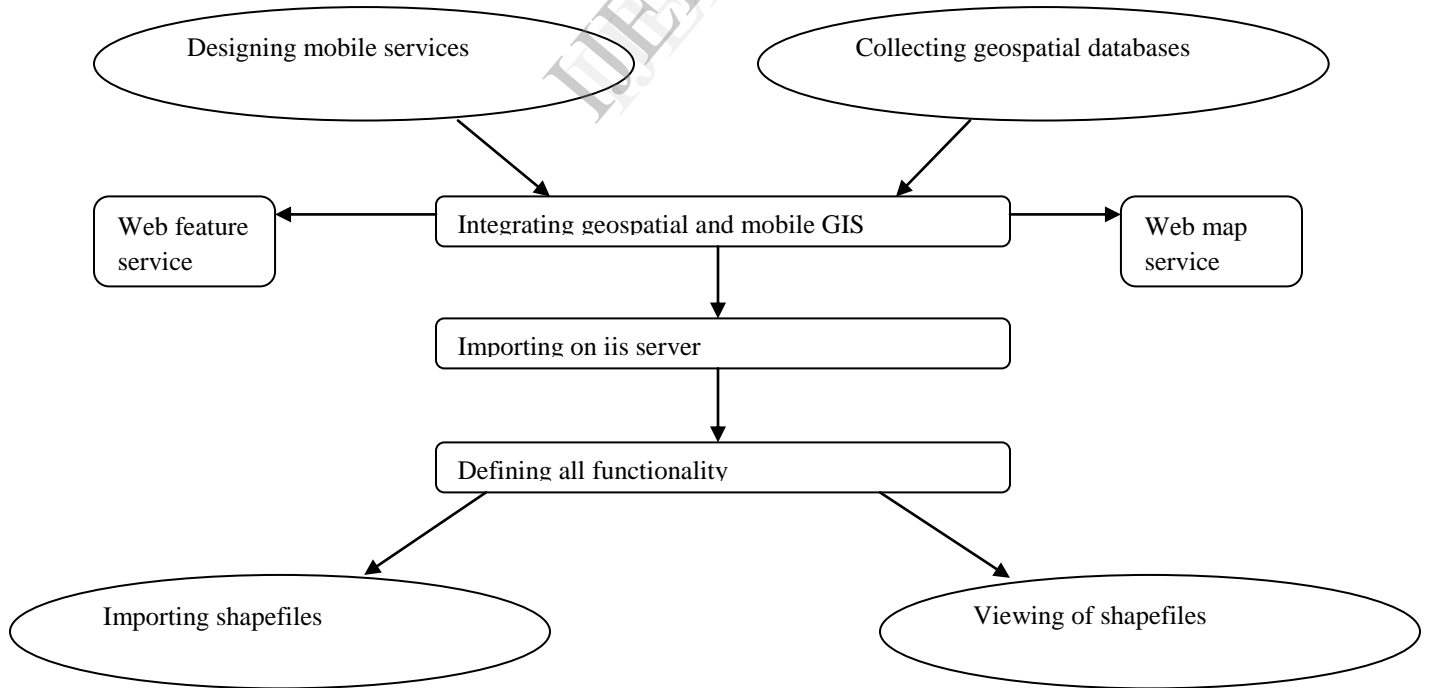
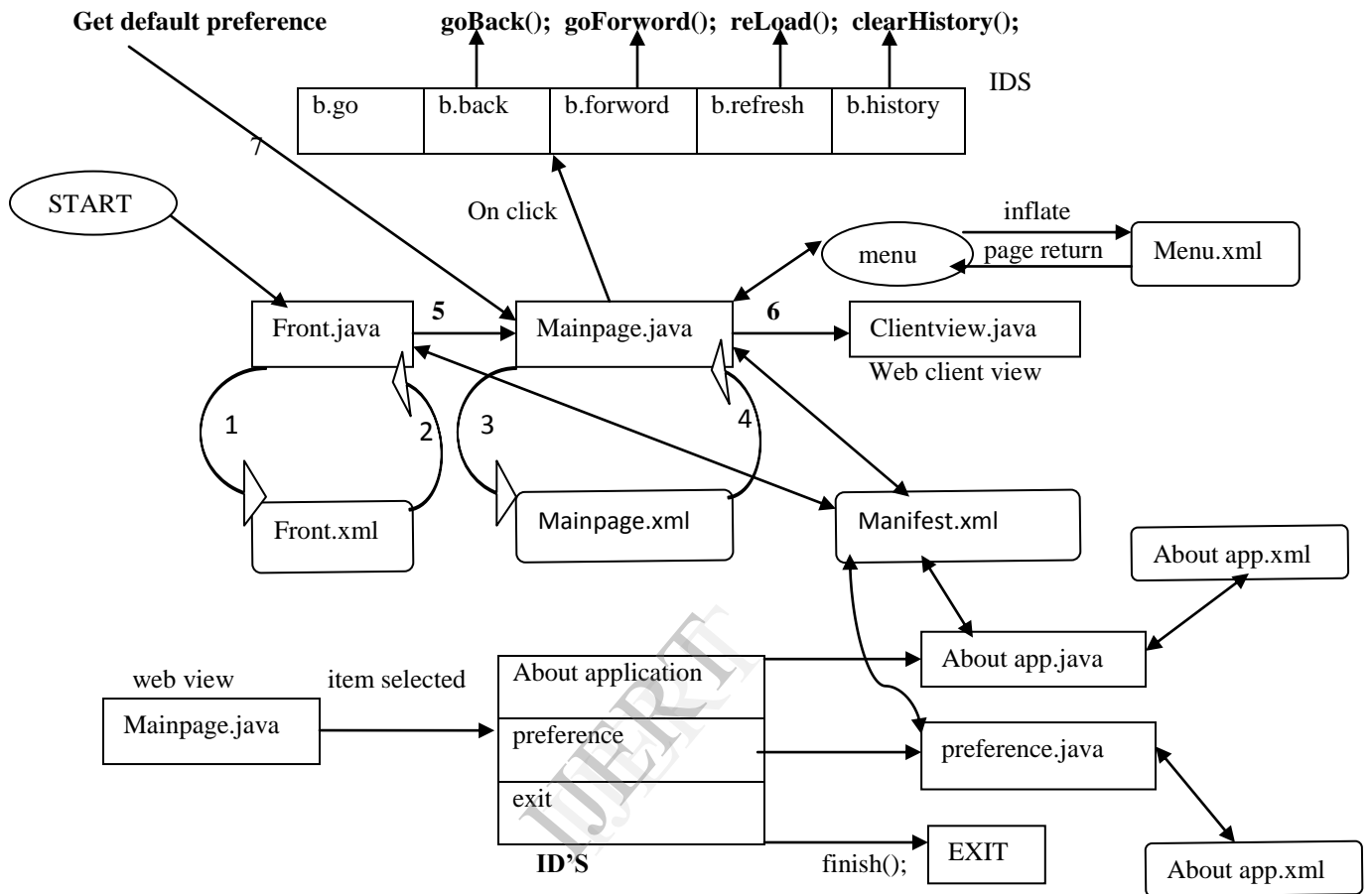


Figure 6: overall methodology to integrate the module

**WORKING OF APPLICATION/ FLOW OF CODING**



*meaning of above used number:-*

1. Content view fetched
2. Content view placed
3. Page request
4. Return
5. Intent passed
6. Load URL
7. Load URL()

Figure 7: overall working methodology of the application

SNAPSHOTS-



Figure 8: accessing geoserver

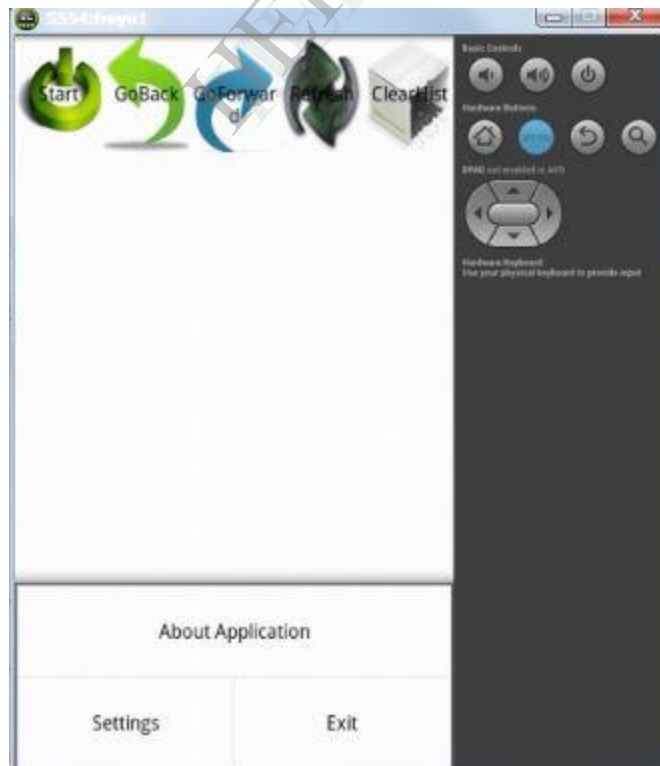


Figure 9: menu of application



Figure 10: click on setting of application

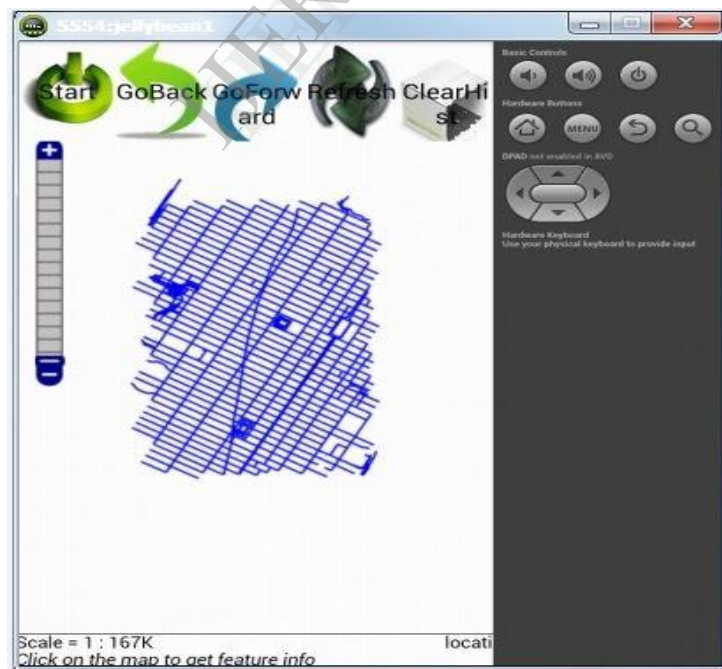


Figure 11: Shapefile view after importing



## CONCLUSION

Geoserver provides commercial open source software for internet mapping and geospatial application development. it contains web-based administration interface. Geoserver is also provide security in the starting phase. The

present work is “to develop a mobile application for accessing geoserver which supports a great functionality to import shapefile by the help of handheld device” is complete with this developed application.

## REFERENCES

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