ABSTRACT

Civil engineering is about developing and sustaining infrastructure. The profession covers many areas of interest and a broad range of expertise. As a result, civil engineers work with a voluminous Amount of data from a variety of sources. Geographic information system (GIS) technology provides the tools for creating, managing, analyzing, and visualizing the data associated with developing and managing infrastructure. GIS allows civil engineers to manage and share data and turn it into easily understood reports and visualizations that can be analyzed and communicated to others. This data can be related to both a project and its broader geographic context. It also helps organizations and governments work together to develop strategies for sustainable development. Thus, GIS is playing an increasingly important role in civil engineering companies supporting all phases of the infrastructure life cycle.

Keywords: Q GIS Software, SRTM Images, Google Earth Software, GPS.

1. INTRODUCTION

Welcome to the wonderful world of Geographical Information Systems (GIS)! Quantum GIS (QGIS) is an Open Source Geographic Information System. The project was born in May of 2002 and was established as a project on Source Forge in June of the same year. QGIS currently runs on most Unix platforms, Windows, and OS X. QGIS is developed using the Qt toolkit and C++. This means that QGIS feels snappy to use and has a pleasing, easy to use graphical user interface.

QGIS aims to be an easy to use GIS, providing common functions and features. The initial goal was to provide a GIS data viewer. QGIS has reached that point in its evolution and is being used by many for their daily GIS data viewing needs. QGIS supports a number of raster and vector data formats, with new support easily added using the plug-in architecture. QGIS is released under the GNU Public License (GPL). Developing QGIS under this license means that you can (if you want to) inspect and modify the source code and guarantees that you, our happy user will always have access to a GIS program that is free of cost and can be freely modified. You should have received a full copy of the license with your copy of QGIS.

A Geographical Information System (GIS) is a collection of software that allows you to create, visualize, query and analyze geospatial data. Geospatial data refers to information about the geographic location of an entity. This often involves the use of a geographic coordinate, like a latitude or longitude value. Spatial data is another commonly used term, as are: geographic data, GIS data, map data, location data, coordinate data and spatial geometry data.

Applications using geospatial data perform a variety of functions. Map production is the most easily understood function of geospatial applications. Mapping programs take geospatial data and render it in a form that is viewable, usually on a computer.
Applications can present static maps (a simple image) or dynamic maps that are customized by the person viewing the map through a desktop program or a web page. Many people mistakenly assume that geospatial applications just produce maps, but geospatial data analysis is another primary function of geospatial applications. Some typical types of analysis include computing.

Q GIS SOFTWARE

2. OBJECTIVE
This exercise will introduce to the Qgis environment and the basic functionalities that you can perform with Qgis, on completion of this exercise you will be familiar with

- Qgis interface and Basic tools
- Adding Spatial Data in Qgis
- Examining Layer properties and attribute table.

Navigation Tool Bars
Launch QGIS and Adding Vector Data

Qgis can be launched by clicking Start>All Programs> Quantum GIS Lisboa> Quantum GIS Desktop (1.8.0)

- From the Manage Layers, click on Add Vector Layer button, to open Add Vector Layer window
- In the Add vector Layer window, click on Browse button and navigate to C:\mapspace\practical\Ex1\Vector folder and select districts.shp shape file and then click open
Once done, click Open on the Add Vector layer window (your map window should look like Figure 5)

Countours are lines that connect points of equal value (such as elevation, temperature, precipitation, pollution, or atmospheric pressure). The distribution of the lines shows how values changes across a surface. Where there is little change in a value, the lines are spaces farther apart. Where the values rise or fall rapidly, the lines are closer together. By following the line of a particular contour, you can identify which locations have the same value. By looking at the spacing of adjacent contours, you can gain a general the impressions of the graduation of values.

3. RESULTS AND DISCUSSION
Contour Line Map of Naikbomwadi Village
4. CONCLUSION

Civil engineering is about developing and sustaining infrastructure. The profession covers many areas of interest and a broad range of expertise. As a result, civil engineers work with a voluminous amount of data from a variety of sources. Geographic information system (GIS) technology provides the tools for creating, managing, analyzing, and visualizing the data associated with developing and managing infrastructure. GIS allows civil engineers to manage and share data and turn it into easily understood reports and visualizations that can be analyzed and communicated to others. This data can be related to both a project and its broader geographic context. It also helps organizations and governments work together to develop strategies for sustainable development. Thus, GIS is playing an increasingly important role in civil engineering companies supporting all phases of the infrastructure life cycle.

- This software can be used in field survey, town planning, road surveys (also existing road database), navigation techniques, flood areas, area covered under forest etc.
- We can analyze and interpret data according to user requirement. We can represent data by grouping and represent legend ie classify data according to same types. Also, different symbols can be used.
- To increase the water table level, When to providing a structure where meeting all stream.
- Easily find out a query about the actual survey and satellite survey image.
- To reduce the time required for the survey.
- Easily making all types of map.

5. REFERENCE