# TO VISUALISE SPATIAL POINTS IN THE ENHANCED BOUNDED RECTANGLE GRAPH

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***Abstract :*** This project focuses on the identification of the nearest location using the spatial data. Here the spatial data is visualized and plotted in the enhanced bounded rectangle graph. Microsoft visual studio .net is used for the better accuracy and presentation. This project is about locating the physical location by taking users preference .this paper helps the user with a clear idea of choosing the location point considering multiple requirements.

***IndexTerms*** **– Spatial data,multiple query,EBR.**

## I. INTRODUCTION

Spatial data mining is the process of discovering interesting these are unknown, but extremely useful patterns from huge spatial datasets. Spatial data refers to locating the physical space. . Detecting location is tedious in enormous spatial data. Using the dataset classify the data and cluster the nearest location. To find the location by applying multiple queries and plot them into a graph by doing the required process helps to display the nearest location point. We are locating the nodes to find the nearest point using spatial data.The best location is obtained from the minimized distance .the nodes are plotted in the EBR graph for the user to find their location points based on multiple features.

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## II. RELATED WORKS

Spatial data quality and uncertainty (SDQ&U) is an increasingly important issue in geographical informatics with thousands of publications in countless journals, conferences, and books. At the early stage of geo-spatial development (from the 1960s until the mid-1980s), the imperfection of spatial data was mainly expressed as errors in geographical position and topology(a mathematical study about movements of objects)[1]

Firstly, and most importantly for the aim of this study, it's used because Google Analytics provides statistic data. Moreover, it's extensively utilized because Google Analytics could also be a free service offered by Google that generates detailed statistics about the visits to an online site , and which can be a user friendly.[2]

The standard of knowledge is known as 'degree to which a group of inherent characteristics fulfils requirements' with reference to the immanent attributes associated with the geospatial nature of the info , like positional accuracy or spatial resolution.[3]

Although the study of spatial data imperfection began to seem within the mid-1980s with the widespread availability of GIS, the first WoS indexed paper was published in 1990. within the past years the perception of some problems with SDQ&U has changed, which was described exhaustively by Devillers et al [1847].[4][5]

Issues of quality and uncertainty of spatial data became even more important because data imperfections propagated through spatial analysis affect the decision-making process. Recently, researchers have focused their scientific attention on uncertainty modelling and therefore the final impact of knowledge imperfection on the spatiotemporal analysis .[6]

Problems identified in studies from mobility research include the necessity for rule-based algorithms, GPS trackers' battery life, and geographical location data quality. due to the massive quantity of location data which will be collected, there's a requirement for procedures to manage, manipulate, and analyze the info .[7]

Spatial information processing is that the technique locate out the knowledge from huge geospatial dataset for extracting unknown, necessary spatial relationship, trends or patterns, not stored explicitly in spatial database [8].

Support of large queries on huge volumes of spatial data is essential in most of domains, including geolocational problems in numerous fields, location based services, and emerging scientific applications that are increasingly data. The popping up of large scale spatial data is due to the cost effective and ubiquitous positioning technologies, improvement of high resolution imaging technologies, and finally the huge crowd of community users. [9].

Spatial data are information about a specific location or about geo-graphical, or place on the earth. The spatial decision support system has both the data (i.e.) spatial and non-spatial. There is a disclosure of geographical relationship in decision making process. Spatial data are data connected to a location, an area on the world. Spatial Decision-making exploits the geographical relationships with in this data to form the decisions. Decision models in specific domains, to compute the characteristics of problem solutions, facilitate the evaluation of solution alternatives and thus the assessment of their trade-offs [10].

## III. OBJECTIVES OF STUDY

This paper aims at following objective:

1. The geo – spatial dataset is formed into clustered by the PROmish algorithm.
2. The related data are marked in EBR graph to find the nearest location point.

## IV. METHODOLOGY

Here, in this paper we are finding the nearest location point. We are using the Coimbatore city data set for our analysis.
Process involved in finding the minimized distance:

**STEP1 :** Searching-comparing and collecting data
**STEP2:** Pruning –removal of unwanted data
**STEP3:** EBR(Enhanced Bounded Rectangle) Graph

### 3.1 ENHANCED BOUNDED RECTANGLE

EBR stands for Enhanced bounded rectangle graph. Each data recorded is considered as nodes. Here it takes the necessary (Right and left) nodes after the searching and pruning process and plot them into graph. The enhanced bounded rectangle graph make our analysis process more understandable as it points the location on the axis and clearly displays the distance between the attributes.

### 3.2 SEARCHING AND PRUNING PROCESS

This process helps the graph with better accuracy. Searching process is done to avoid the missing data and retrieve the lost data.it also involves the comparison of nodes where the promish algorithm compares all the nodes. Once all the data is collected and grouped pruning process is done, this process is to remove the unwanted data and the existing data is plotted in the graph.

### 3.3 PROMISH – ALGORITHM

ProMiSH (Projection and Multi Scale Hashing) that uses random projection and hash . It is subjected on the index structures, and achieves high flexibility and higher momentum. ProMiSH (Projection and Multi-Scale Hashing) to enable fast processing for NKS queries.

ProMiSH-A is much more time and space efficient but returns results whose diameters are within a small approximation ratio of the diameters of the true results

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### 3.2 NEAREST GROUP QUERY (PROMISH – ALGORITHM)

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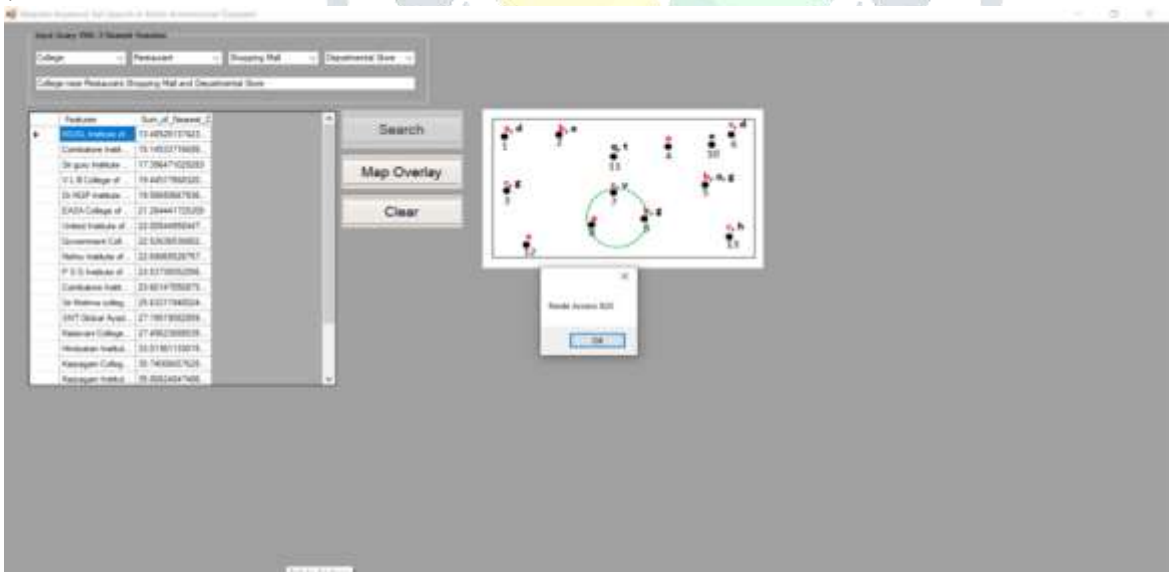



**Fig 3.2**

### 3.3 DATA-SET

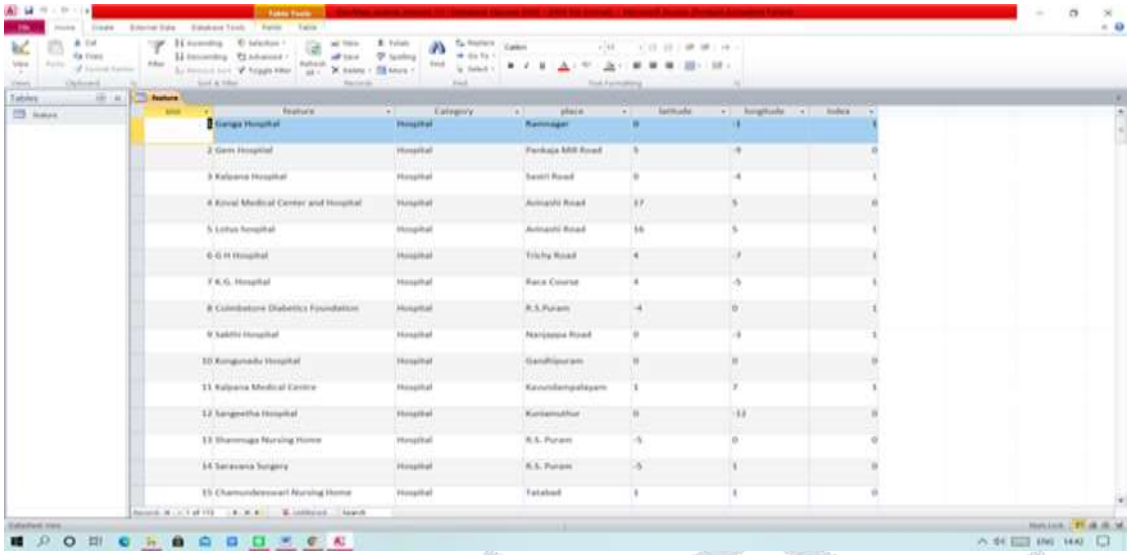
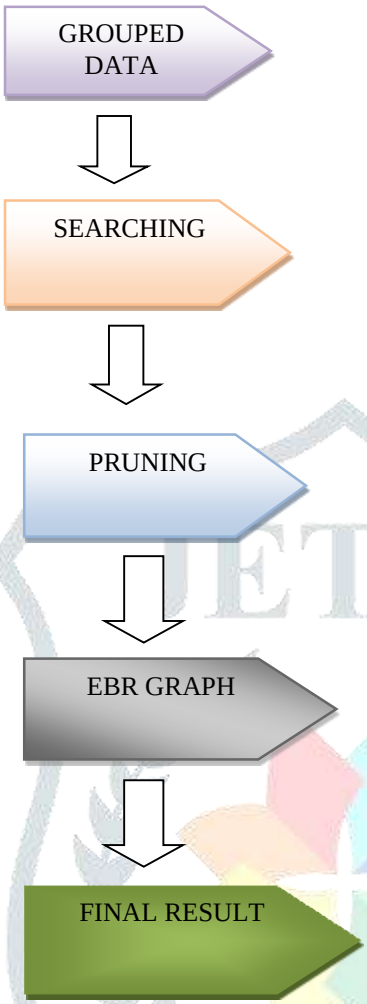


**Fig3.3 (Coimbatore city Location)**

In the figure 3.3 , the data set is shown , in this paper the data set used for the project is the Coimbatore city data set. It contains of the geo spatial data , which helps us to plot the graph. The above data set has a group of attributes like INDEX , FEATURE CATEGORY , PLACE LATITUDE AND LOGITUDE. Thses attributes contains the spatial data of Coimbatore location.

**3.4 FLOWCHART**



## IV. RESULTS

### 4.1 ENHANCED BOUNDED RECTANGLE

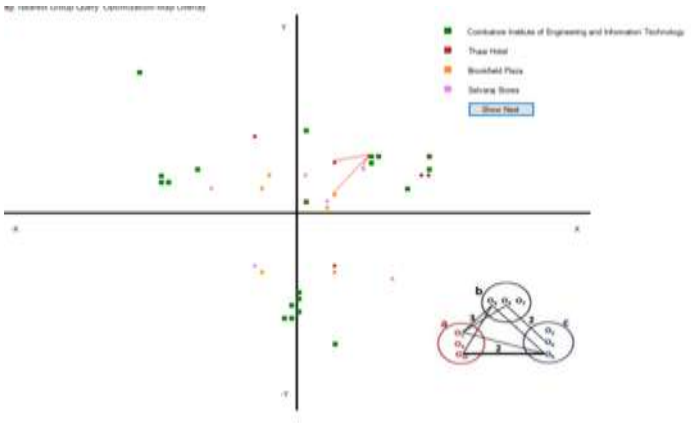


**Fig 4.1**

The above graph represents the Enhanced Bounded Rectangle Graph. As in the objective mentioned , the EBR shows the minimized distance location by comparing the nodes and displaying the minimized distance location.. In the Graph , the red line segment indicates the distance between the attributes. The points on the graph are the location points which are presented in the spatial data set.

## V. CONCLUSION

In this paper, Microsoft visual studio. Net is used to analyze and identify the nearest location points. The spatial data set is huge and this project helps to find the nearest query point by plotting the graph. Here by, the geo spatial data is used for grouping the data and form them into clusters that were plotted as location points in the graph. The enhanced bounded rectangle graph helps the user to find the distance between the attributes and exhibits and clear presentation on the nearest location points

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