

CHAPTER-4

DESIGN OF PROPOSED SYSTEM

Tough competition increases our need to compete with the opponents to survive in the market. In such a case, the person who does a business must be updated in terms of rest others product and what else has to be improved for the business.

Thus the system has to provide a comparative view of what has to be added and what has to be improved in the business. If the business is improved, it leads to the development of people in their economic state as well as it increases their state of living.

The proposed system is an initiative to improve the business as well as state of living of various persons. It is based on the following objectives,

- ❖ Business idea recommendation based on area where they wish to start.
- ❖ Competitor's information in the particular area where they wish to start.
- ❖ Guidelines to be followed for obtaining permission to start a business.

The method that will be used for the proposed system was as below,

- ❖ Each location will be having a unique value based on latitude and longitude. They are called as spatial data.
- ❖ Each location will be having some popular land marks near by. They are called as landmarks.
- ❖ Each place may or may not have the basic facilities like hospital, school, banks and etc...
- ❖ Each place may or may not have a particular business to be held there.

We use the spatial data, basic facilities and landmarks to suggest a suitable business idea in the preferred location. In addition, we provide the competitors information based on Inverted index tree. It considers all the factors that were most basic and provides the suggestion. The data what they provide will be an updated one. Thus eliminates the time consumed for an individual to carry out the case study in the particular area.

PROPOSED SYSTEM ARCHITECTURE

Architecture of the proposed system to solve the problem is as below,

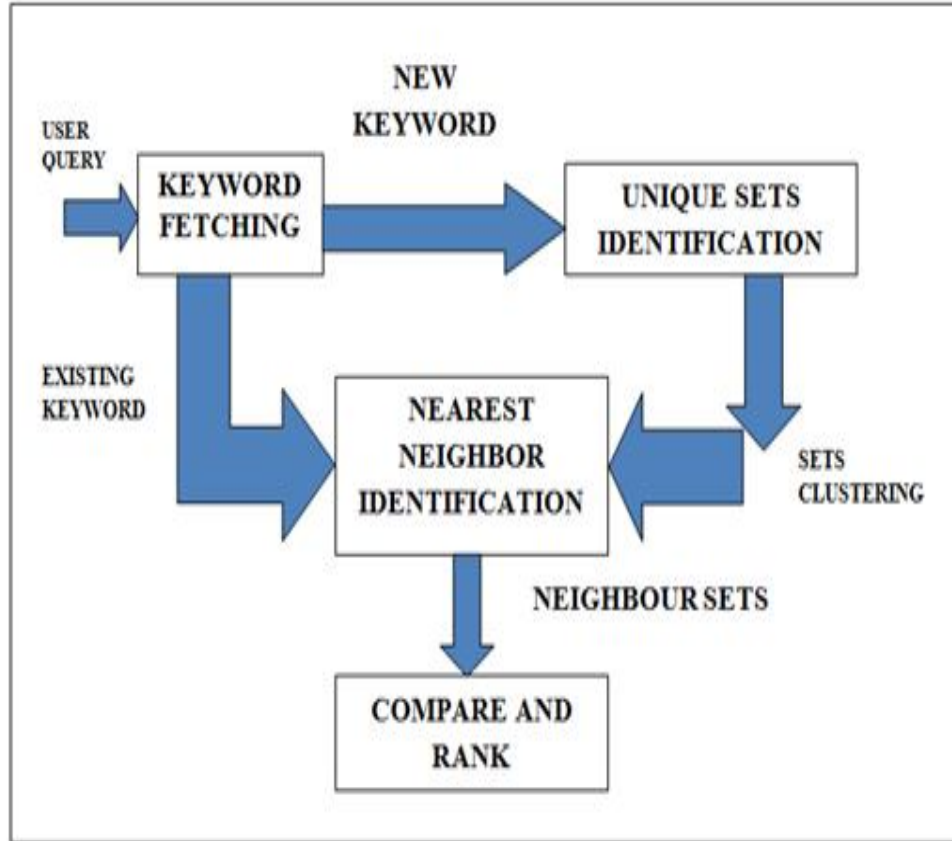


Figure.4.1 Architecture diagram.

The modules that have been identified to solve the problem is as below,

- ❖ Module 1-Keyword fetching.
- ❖ Module 2-Unique sets identification.
- ❖ Module 3-Nearest Neighbour identification.
- ❖ Module 4-Compare and rank.

MODULE 1-KEYWORD FETCHING

This module is used to get the user query and fragment into pieces of keywords. These keywords act as the preferences and the user's idea for starting a

new business. These keywords will be used in upcoming modules for business recommendation. It uses “sub string matching” as the key technique.

MODULE 2-UNIQUE SETS IDENTIFICATION

This module is used to identify the keywords as “existing” or “new”. Depending on the keyword the processing starts. Whether the keyword is “new” or “existing”, the system selects the preference data set given by the user. These two keywords act as the major words that decide flow of execution in the system. It uses “sub string matching” as the key technique.

MODULE 3-NEAREST NEIGHBOUR IDENTIFICATION

This module is used to identify the nearest neighbour satisfying all the keywords. If the business that the user wishes to start is a new business, then suitable areas for starting the business would be identified and given to the user. This module uses the IR^2 tree algorithm to compute the nearest neighbour for the preferences that the user has given.

The IR^2 Tree is a combination of an R -Tree and signature files. In particular, each node of an IR^2 Tree contains both spatial and keyword information; the former in the form of a minimum bounding area and the latter in the form of a signature. An IR^2 Tree facilitates both top -k spatial queries and top -k spatial keyword queries.

MODULE 4-COMPARE AND RANK

This module is used to obtain search results and display them as ranking for user’s convenience. This rank will be further used to recommend suitable business for the user.

CHAPTER-5

IMPLEMENTATION OF PROPOSED SYSTEM

5.1 HARDWARE REQUIREMENTS

- Processor : Intel CORE i3
- RAM : 4 GB
- Hard Disk : 500 GB
- Key Board : Standard Windows Keyboard
- Mouse : Two or Three Button Mouse
- Monitor : SVGA

5.2 SOFTWARE REQUIREMENTS

- Front End : vb.net
- IDE : Microsoft Visual Studio 2008
- Back End : Microsoft Access 2007
- Operating System: Windows 7.

5.3 Microsoft .Net Framework

The Microsoft .NET Framework is a software framework that can be installed on computers running Microsoft Windows operating systems. It includes a large library of coded solutions to common programming problems and a common language infrastructure that manages the execution of programs written specifically for the framework. The .NET Framework supports multiple programming languages in a manner that allows languages inter operability, whereby each language can utilize code written in other languages; in particular, the .NET library is available to all the programming languages that .NET encompasses.

The framework's Base Class Library provides a large range of features including user interface, data access, database connectivity, cryptography, web application development, numeric algorithms, and network communications. The class library is used by programmers, who combine it with their own code to produce applications.

Programs written for the .NET framework execute in a software environment that manages the program's runtime requirements. Also part of the .NET Framework, this runtime environment is known as the Common Language Runtime (CLR).

The CLR provides the appearance of an application virtual machine so that programmers need not consider the capabilities of the specific CPU that will execute the program. The CLR also provides other important services such as security, memory management, and exception handling. The class library and the CLR together constitute the .NET Framework. The .Net Framework is described in Figure.5.1.

➤ **Common Language Runtime (CLR)**

CLR is the main runtime engine for .Net. This is responsible for verifying type safety, garbage collection and error handling along with Code Access Security. All code that is executed by the CLR (or targeted to run by the CLR) is called managed code. Any code that is executed directly on the Operating System is called unmanaged code.

CLR implements Code Access Security based on the evidence for an Assembly. Evidence can be such as from which site the code is being downloaded, any strong name key available or digital signatures and assigns the code to a particular code group based on the evidence. Each code group has a set of permissions which define what all the assembly can access and perform. The execution of this is non deterministic.

This implies that no more pointer access by default. Relinquishing of memory is done by the garbage collection once the object is marked for garbage collection. However Microsoft hasn't removed the feature of pointers completely. One can use pointers by writing unmanaged code using keyword unsafe. CLR is also known as Virtual Execution System (VES).

➤ **Framework Class Libraries (FCL)**

In the .NET Framework classes, interfaces, and value types are bundled together into a library. It also creates a more efficient environment by making system functionality readily accessible. One of the big advantages of the Microsoft .NET platform is due to the FCL. As long as the compiler conforms to the Common Language Specifications (CLS), any programming language can use the .NET Framework types. This greatly increases the ease of interoperability between languages.

➤ **Security**

.NET has its own security mechanism with two general features: Code Access Security (CAS), and validation and verification. Code Access Security is based on evidence that is associated with a specific assembly. Typically the evidence is the source of the assembly (whether it is installed on the local machine or has been downloaded from the intranet or Internet). Code Access Security uses evidence to determine the permissions granted to the code. Other code can demand that calling code is granted a specified permission. The demand causes the CLR to perform a call stack walk: every assembly of each method in the call stack is checked for the required permission; if any assembly is not granted the permission a security exception is thrown.

5.3 FEATURES

➤ **Interoperability**

The computer systems commonly require interaction between newer and older applications, the .NET Framework provides means to access functionality

implemented in newer and older programs that execute outside the .NET environment.

➤ **Common Language Runtime engine**

The Common Language Runtime (CLR) serves as the execution engine of the .NET Framework. All .NET programs execute under the supervision of the CLR, guaranteeing certain properties and behaviours in the areas of memory management, security, and exception handling.

➤ **Language independence**

The .NET Framework introduces a Common Type System, or CTS. The CTS specification defines all possible data types and programming constructs supported by the CLR and how they may or may not interact with each other conforming to the Common Language Infrastructure (CLI) specification. Because of this feature, the .NET Framework supports the exchange of types and object instances between libraries and applications written using any conforming .NET language.

➤ **Base Class Library**

The Base Class Library (BCL), part of the Framework Class Library (FCL), is a library of functionality available to all languages using the .NET Framework. The BCL provides classes that encapsulate a number of common functions, including file reading and writing, database interaction, XML document manipulation, and so on. It consists of classes, interfaces of reusable types that integrate with CLR (Common Language Runtime).

➤ **Simplified deployment**

The .NET Framework includes design features and tools which help manage the installation of computer software to ensure it does not interfere with previously installed software, and it conforms to security requirements.

➤ **Security**

The design addresses some of the vulnerabilities, such as buffer overflows, which have been exploited by malicious software. Additionally, .NET provides a common security model for all applications.

➤ **Portability**

While Microsoft has never implemented the full framework on any system except Microsoft Windows, it has engineered the framework to be platform-agnostic, and cross-platform implementations are available for other operating systems (see Silver light and the Alternative implementations section below). Microsoft submitted the specifications for the Common Language Infrastructure (which includes the core class libraries, Common Type System, and the Common Intermediate Language), the C# language, and the C++/CLI language to both ECMA and the ISO, making them available as official standards. This makes it possible for third parties to create compatible implementations of the framework and its languages on other platforms.

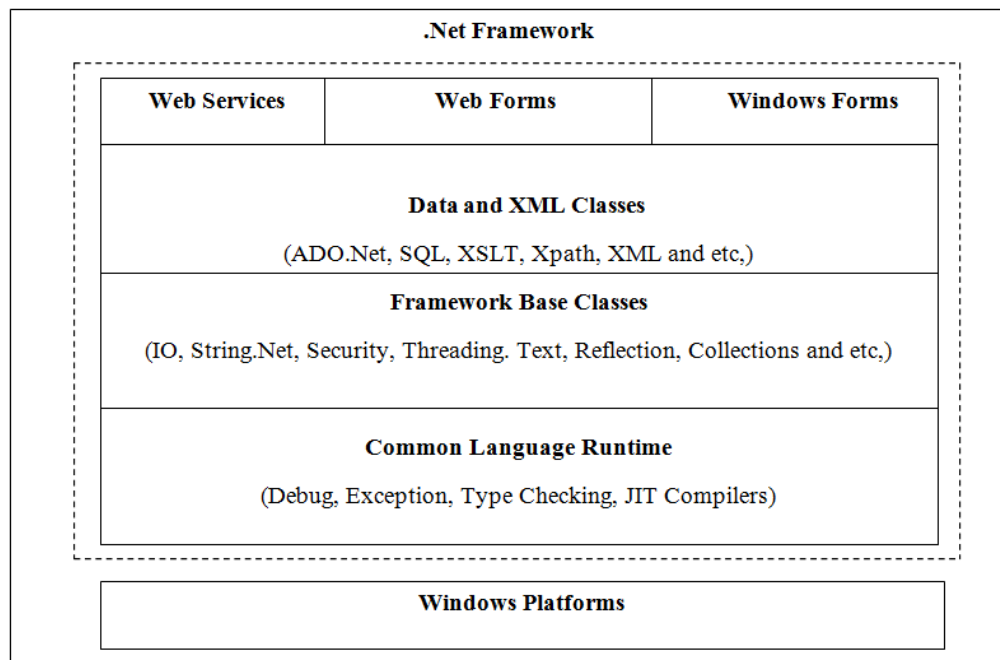


Figure.5.1 .NET Framework

5.4 BACKEND

A back-end database is a database that is accessed by users indirectly through an external application rather than application programming stored within the database itself or by low level manipulation of the data (e.g., through SQL commands). A back-end database stores data but does not include end-user application elements such as stored queries, forms, macros or reports.

Microsoft Access, also known as Microsoft Office Access, is a database management system from Microsoft that combines relational Microsoft Jet Database Engine with a graphical user interface and software-development tools. It is a member of the Microsoft Office suite of applications, included in the Professional and higher editions or sold separately.

Microsoft Access stores data in its own format based on the Access Jet Database Engine. It can also import or link directly to data stored other applications and databases.

Software developers and data architects can use Microsoft Access to develop application software, and “power users” can use it to build software applications. Like other Office applications, Access is supported by Visual Basic for Applications, and object-oriented programming language that can reference a variety of objects including DAO (Data Access Objects), ActiveX Data Objects, and many other ActiveX components. Visual objects used in forms and reports expose their methods and properties in the VBA programming environment, and VBA code modules may declare and call Windows operating-system functions.

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In addition to using its own database storage file, Microsoft Access also may be used as the 'front-end' with other products as the 'back-end' tables, such as Microsoft SQL Server and non-Microsoft products such as Oracle and Sybase. Multiple backend sources can be used by a Microsoft Access Jet Database (accdb and mdb formats).

Similarly, some applications such as Visual Basic, ASP.NET, or Visual Studio .NET will use the Microsoft Access database format for its tables and queries. Microsoft Access may also be part of a more complex solution, where it may be integrated with other technologies such as Microsoft Excel, Microsoft Outlook, Microsoft Word, Microsoft PowerPoint and ActiveX Controls.

Access tables support a variety of standard field types, indices, and referential integrity including cascading updates and deletes. Access also includes a query interface, forms to display and enter data, and reports for printing. The underlying Jet database, which contains these objects, is multiuser-aware and handles record-locking.

CHAPTER-6

PERFORMANCE

The above system is not having any existing system. It is a new system developed to solve the problem. Hence for benchmarking we don't have any systems.

CHAPTER-7

CONCLUSION AND FUTURE WORK

Spatial databases though was limitedly used ,it can also be used to extend in information processing systems like business recommender system, travel recommender system, crowd sourcing, task out sourcing and other applications. Data structure utilization for such a product decides its performance and data set type decides its usability level from the user's point of view. Achieving 100% accuracy in such a system is practically impossible for such a system. It is due to the different views that a user in selecting the business area and the importance level that they give to the selection criteria. But, this system is an attempt to minimize the work load of a person to start a new business as well as to improve his business. As a future work, the system is planned to be extended with more real world data sets and to give more accurate results for existing users.