1. **Environment Description**
2. **Hardware & Software Requirements**

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| **Hardware Requirement** | |
| * **Processor** | Pentium 4.0 or higher Recommended: 1 gigahertz (GHz) processor |
| * **Ram** | 512 MB |
| * **Hard Disk** | 1GB or Higher free space |

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| **Software Requirement** | |
| * **Operating System** | Microsoft Windows XP SP2 Onwards. |
| * **Database** | Microsoft SQL Server 2005. |
| * **Browser** | Mozilla Firefox 2.0 Onwards /Internet Explorer 7.0 Onwards, Google chrome,Safari,Opera |

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| **Client Configuration** | |
| * **Processor** | PC with a Intel i5, 800 MHz processor  Recommended: 2.2 GHz processor |
| * **RAM** | 4GB or onwards Recommended. |
| * **Hard Disk** | 1 GB of available space required on system drive of available or more. |
| * **Operating System** | Windows XP Service Pack 2, Windows Server 2003 Service Pack 1, Windows-7 or later versions |
| * **Access** | Microsoft SQL |
| * **Browser** | Mozilla Firefox 2.0 /Internet Explorer 7.0 Onwards with Player Plug-in 9.0 or onwards. |

1. **Technology Used**

In each and every system there is need to two different ends to handle the system. Each system requires the main platform to perform by all tasks that will appear in the system and these tasks will be performing by only front end. Te main need of talking front end is that all performing that will be performed according to environment and facility provided by the adopted front end and talking back end is that all database are kept in that base.

In our software **Online Building Management Portal** we are using mainly two major technologies to support our system as two different ends. In our software VISUAL STUDIO 2008 will play important role of front end and SQL server 2005 will play a minor role in the management of the database as a back end in our system.

* **The main programming language that we widely used in front end:-**

**Back end:-**

* Microsoft visual studio(ASP.NET)
* SQL server 2005
* .**NET architecture:-**

The .NET framework consists of three parts:-

1. **The common language runtime:-**

The common language runtime provides the interface between your code and the operating system.

1. **The Framework classes:-**

The framework classes offload much offload the work done by the Visual Basic into language – independent development libraries.

**3. Visual Basic.NET 2008:-**

Visual Basic.NET 2008 provides direct access to the full VB language from a scripting platform which is covered in the following sections. The components of .NET tend to cause some confusion. Below figure provides on illustration of the .NET architecture.

.NET

.NET framework

.NET servers

ASP.NET

Upload ASP engine web forms engine

frame work classes

system.math.system.io,system.data

Common language runtime

Memory management

Common type system

* **Microsoft visual studio 2008( front end ):-**

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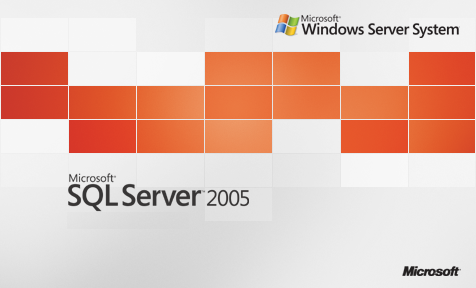
Visual studio 2008 is a comprehensive, high productivity professional development environment (for working alone or in small teams) for building high performance, multiple applications for windows, the web and mobile devices.

* With visual studio 2008, professional developers can:-
* Create multi-tier windows, web, smart phone and pocket pc based applications.
* Integrated visual database tools for designing databases, tables, stored procedures and more.
* Integrated database report designer and viewer.
* Design, debug and deploy multi-tier applications.
* Integrated XSLT debugging.
* What is .NET framework?

An accurate definition of .NET framework is, it’s an XML web services platform which allows us to build rich .NET applications, which allows users to interact with the internet using wide range of smart devices, tablet devices, pocket pc’s web phones visual studio to funny develop and build those applications.

The .NET framework could be moved to any operating system, meaning your .NET applications could be run on any operating system hosting the .NET framework. Thus means that you could achieve true cross platform capabilities simply by creating ASP.NET applications provided the .NET framework was available for other platforms.

* Some of the main characteristics of .NET framework are as follows:-
* It provides multi-languages object-oriented environment for programmers, whether code is stored and executed entirely locally or remotely.
* It facilities software deployment and minimizes versioning conflicts.
* It provides an environment that promotes safe code execution, including that of less trusted third-party code.
* It allows developers to create both windows-based and web-based applications in a consistent manner.
* Benefits of .NET:-
* Make code clear.
* Improve development, scalability, security & reliability.
* Provide better support for different & devices.
* Enables a new breed of web application.
* **Microsoft SQL server 2005( back end ):-**

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Microsoft SQL server 2005 is a full-featured relational database management system that offers a variety of administrative tools to ease the burdens of database development, maintenance and administration.

* SQL server 2005 tools:-
* Analysis services.
* Configuration tools.
* Documentation and tutorials.
* Performance tools.
* Business intelligence development studio.
* Management studio.
* New features of SQL server 2005:-
* Enterprise data management:-

In today’s connected world, data and the systems that manage that data must always be secure yet available to users. With SQL server 2005, users and IT professionals across your organization will benefit from reduced application downtime, increase scalability and performance and tight yet flexible security controls. SQL server 2005 also includes many new and improved capabilities to help male your IT staff more productive. SQL server 2005 includes key enhancements to enterprise data management in the following areas:-

* Manageability
* Availability
* Scalability
* Security
* Developer productivity:-

SQL server 2005 includes many new technologies that bring significant increases in developer productivity. From .NET framework support to tight integration with visual studio, these features provide developers with the ability to more easily create secure, robust database applications at a lower cost. SQL server 2005 enables developers to take advantage of their existing skills across a variety of development languages while providing an end-to-end development environment for the database. Native XML capabilities enable developers to build a new classes of connected applications across any platform or device. Enhancements for developer productivity include the following:-

* Expanded language support.
* Improved development tools.
* Extensibility.
* Improved data access.
* XML and web services.
* Application framework.
* Business intelligence:-

SQL server 2005 furthers Microsoft leadership in the area of business intelligence (BI) through innovations in scalability, data integration, development tools and rich analytics. SQL server 2005 enables scalable BI by putting critical, timely information in the hands of employees across your organization. From the CEO to the information worker, employees will be able to quickly and easily hardness data to make better decisions faster. The comprehensive integration, analysis and reporting capabilities of SQL server 2005 enable companies to extend the value of their existing applications, regardless of the underlying platform. BI features include enhancements in the following areas:-

* An end-to-end integrated business intelligence platform.
* Integration services.
* Analysis services.
* Reporting services.
* Integration with Microsoft office system.
* **Benefits of SQL server 2005:-**
* Rebuilding clustered index does not necessarily rebuild associated no clustered indexes unless the keyword all is specified.
* It automatically skips updating stats for tables and indexes that haven’t had any updates since the last time statics were created or updated.
* Scalability of temp DB has been enhanced catching of initial pages occurs upon declaration of temporary tables and a table variable saves time and boosts performance.
* Backup data and log concurrently log shipping backups are not blocked by a data backup.
* Page checksum is on by default higher reliability. Buffer pool replacement policy is much better at keeping the right pages in cache.
* Deadlock output is now XML (graphical) by using deadlock graph event type in profiler.
* Missing index feature is always on with new feature – SET STATISTICS XML ON, you can see the show plan in XML format and within that output there is an element of missing indexes. This element contains information about missing indexes based on the query execution plan.