

Housing Construction System

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Abstract: This paper presents an overview and explanation on housing construction system.

Keywords: Housing Construction System

1. Introduction

A. Statement of the problem

Now in the present days, the constructions are working only in manual registers i.e. handwritten. So it is difficult to maintain all the details required for the construction. So to overcome this problem we create computerized software by which we can store all required information in less time than manual work.

The problem is:

1. To keep the records of each site, the system has to maintain a lot of registers, which quiet critical. Also, a lot of valuable time is wasted.
2. The manual system is difficult to differentiate & update for the builder.
3. The builder has to check every time those register for reference.
4. In case any details of any site are lost from the builder so it creates a big problem for the builder.

B. Manual System

This project is for the builder, which means to maintain all information about his all sites running at a time. In this project following entities take part:

1. Builder
2. Contractor
3. Supplier
4. Site Engineer
5. Customers

The "Housing Construction System" manages the day to day updates of each contract. This system builder is at the top level & he takes all major decisions. He designs the architecture of a plan for a building. In this system Supplier reports, Order reports, Contract reports are included & are submitted to a builder. The management i.e. builder first gives a contract to the contractor. Contractors accept this contract & give all reports about construction to a builder. The builder gives a purchase order to the supplier. Then supplier supplies material with the bill. The site engineer takes material & gives reports to the builder. The contractor gives the decision to the site engineer & the site engineer takes action on that. They give service to the

contractor on site. The builder gives payment to the contractor as well as a site engineer.

C. Proposed System

In our system, five main actors play a very important role, the Builder, Contractor, Supplier, Site engineer, and customer. In our system, we provide the user name & password for the correct administrator. It protects the system from improper handling. In our project, we will give the facility to maintain all details in whole construction in a computerized manner. By using our system builder can save his time for documentation. In our system, we create the table of the description of which is common for all sites to save the writing work. That's why using our system builder can easily differentiate and update the details. After completing every site we save all the information in the computer system for further process and also take back up of every site.

Advantages:

1. Less time consuming
2. Reduces paperwork
3. Easy to update each detail.
4. The facility of security.

2. Software Requirement Specifications

A. Software Requirement

- OPERATING SYSTEM: Windows 98 /Windows 2000 And above
- VISUAL BASIC VERSION: VB.NET
- SQL SERVER 2005

B. Hardware Requirements

- PROCESSOR: Pentium IV & Above.
- RAM: 512 MB & Above.
- HARD DISC: 80 GB
- PRINTER: Dot Matrix / Ink-Jet
- MONITOR: Color
- PROCESSOR SPEED: 3.2GHz

Introduction to VB.NET

What is .Net?

.Net is a set of s/w technology for connecting information, people, systems & devices. .Net word says that it is related to the internet.

Definition: It is a platform that is used to compile & execute programs written by using .Net compatible languages.

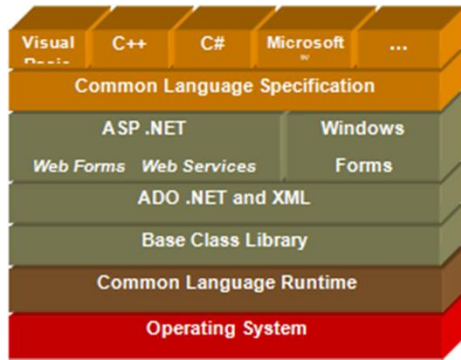


Fig. 1. .NET Framework

Blocks of Framework Architecture:

1. Net compatible languages
 2. Common language specification
 3. Common type system
 4. Common language runtime
 5. Framework class library
1. *Net compatible languages:* -vb.net, c#.net, jscriirt.net, VC++.net are languages compatible with .net framework.
 2. *Common language specification:* These are a set of rules defined for .net compatible languages. It helps to enhance & ensure language interoperability by defining a set of features that developers can on to the available in a wide variety of languages. If your components use CLS features in API that it exposes to other code, his component is guaranteed to be accessible from any programming language that supports CLS. The CLS was designed too large enough to include language constructs that are Commonly needed by developers. E.g. whenever a particular class is to be used. Then the respective namespace must be included. The system namespace is the root namespace for fundamental type in the .net framework. This namespace includes classes that represent the best data type used by all applications. E.g. Object, byte, char, array, int32, string, etc.
 3. *Common type system*
It is a part of CLS. The CLS performs the following functions:
 - Establishes a framework that helps cross-language integral type safely & high-performance code execution.
 - Provide an object-oriented model that supports the complete implementation of many programming languages.
 - Define rules that language must be followed which helps to ensure that5 objects written in different languages can interact with each other. e.g. Dim I as integer(VB) int I (C#) 4 bytes System int 32
 4. *Framework class library (FCL)*

Net supports the collection of predefined classes. These

classes put under the hierarchy of special structures called Namespaces (collection of classes).In .net “System” is the highest level namespace.

Whenever you start any .net application three namespaces

1. System
2. System. DATA
3. System. XML are included.

The system namespace is the root namespace for fundamental type in the .net framework. This namespace includes classes that represent the best data type used by all applications.

E.g. Object, byte, char, array, int32, string, etc.

4. *Common Language Runtime (CLR)*

CLR is the heart of the .net framework. It takes care of entire execution, memory management of .net application irrespective of the type of application it is also called a managed execution environment. The .NET Framework provides a run-time environment called the Common Language Runtime, which manages the execution of code and provides services that make the development process easier. Compilers and tools expose the runtime’s functionality and enable you to write code that benefits from this managed execution environment. Code that you develop with a language compiler that targets the runtime is called managed code; it benefits from features such as cross-language integration, cross-language exception handling enhanced security, versioning and deployment support, a simplified model for component interaction, and debugging and profiling services.

C. *Introduction to SQL server*

Features of access:

The SQL server is free and easy to use database products. It is designed to provide a database platform that offers superior ease of use, enabling fast deployments for its target scenarios. Features like auto close & the ability to copy database as the file which is enabled by default in SQL server, while the high availability & business intelligence features are absent. It is very easy to “scale up”. SQL Server was developed with two distinct uses in mind. The first is a server product, especially as a web server or database server. Second is a local client data store where the application data access does not depend on the network. Ease of use and simplicity are the key goals.

The two main usage scenarios of SQL server are:

- Hobbyist building client/server application.
- Non-professional developers building web applications.

D. *Security*

For SQL server, one of the goals is to provide secure defaults for the different components. For instance, the networking protocols such as TCP/IP and Named Pipes are turned off. SQL browser service is not started unless the user explicitly asks for this in the setup command line. The SA or system admin account is disabled by default if Windows Authentication is used. Normal users on the machine have almost no privileges on the SQL server instance. A local Administrator on the server

must explicitly grant relevant permissions for normal users so that they can use SQL functionality.

E. Attach 'DB' Filename

You can specify a relative or absolute file path for the Attach DB FileName connection string entry. The specified database file is attached when the connection is opened and this database is used as the default database for that connection. If the database is already attached when Attach DB FileName is invoked, then attach does nothing. This keyword supports a special string called Data Directory that points at runtime to the data directory of the application where database files are stored. This special string should be at beginning of the file path, works only against a local file system, and checks are done for \.\ syntax so that the file path is not higher than the directory pointed to by the substitution string.

F. Auto-Close

This feature releases the file locks on the user database when there are no active connections to it. Thus, the database is ready to move or copied after the application that uses it is closed.

G. Feature Description

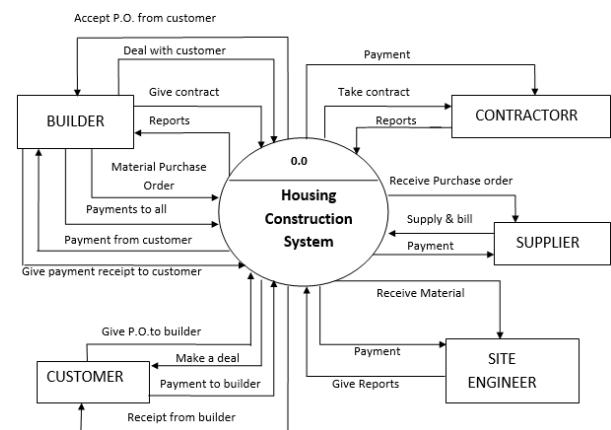
- *Online Restore:* With SQL Server 2005, database administrators can platform a restore operation while an instance of SQL Server is running. Online restore improves the availability of SQL Server because only the data being restored is unavailable; the rest of the database remains online and available.
- *Online Indexing Operations:* The online index option allows concurrent modifications (updates, deletes, and inserts) to the underlying table or clustered index data and any associated indexes during index data definition language(DDL) execution. For example, while a clustered index is being rebuilt, you can continue to make updates to the underlying data and perform a query against the data.
- *Fast Recovery:* A new faster recovery option improves the availability of SQL Server databases. Administrators can reconnect to a recovering database after the transaction log has been rolled forward.
- *SQL Server Management Studio:* SQL Server 2005 includes SQL Server Management Studio, a new integrated suite of management tools with the functionality to develop, deploy and troubleshoot the SQL Server database, as well as enhancements to previous functionality.
- *Dedicated Administrator Connection:* SQL Server 2005 provides a dedicated administrator connection that administrators can use to access a running server even if the server is locked or otherwise unavailability. This capability enables administrators to troubleshoot problems on a server by executing diagnostic functions or Transact-SQL statements.
- *Hosted Common Language Runtime:* With SQL

Server 2005 developers can create database objects using familiar languages such as Microsoft Visual C#.NET and Microsoft ASP.NET. Developers can also create two new objects –user-defined types and aggregates.

- *Native XML Support:* Native XML data can be stored, queried, and indexed in the SQL Server database - allowing developers to build new classes of connected applications around Web services and across any platform or device.
- *Security Enhancement:* The security model in SQL Server 2005 separates users from objects, provides fine-grain access, and enables greater control of data access. Additionally, all system tables are implemented as views, providing more control over database system objects.
- *Web Services:* With SQL Server 2005 developers can develop Web services in the database tier, making SQL Server a hypertext transfer protocols (HTTP) listener and providing a new type of data access capabilities for Web services access capability for Web service-centric applications.

3. System design

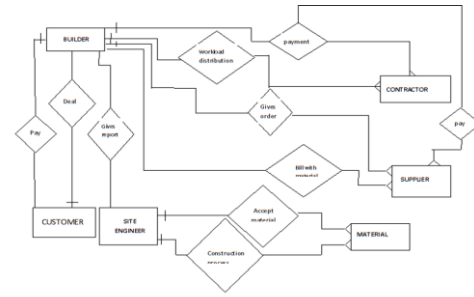
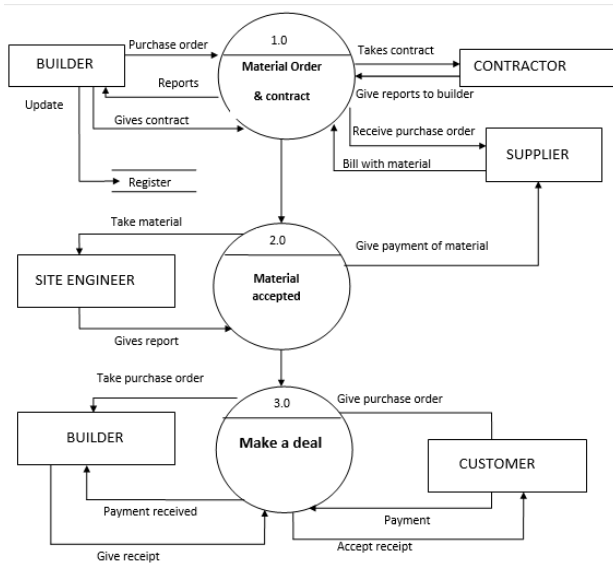
- *Data Flow Diagram:* DFD is a process modeling tool used during the problem of analysis. DFD is a graphical representation of data moment, processes & files used in support of the Information system.



- *Context Level DFD:* In context-level DFD there is a maintained schedule of planning & working as per plan. The builder designs a plan & gives a contract to a contractor. The contractor decides the corresponding site engineer for that site. Then the builder sends the purchase order of material to the supplier. According to this order, the supplier supplies the material with the bill. The supplier receives payment from the builder. The site engineer receives the material. After the whole construction, the builder receives the purchase

order from the customer. Then there is a deal between customer and builder. According to that deal, the payment is paid by the customer & receives a receipt.

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Master forms

Entity Relationship Diagram

- E-R Model: An E-R model is a detailed logical representation of entities, associations & data elements for an organization or business area.
- E-R Diagram: E-R diagram is a graphical representation of the E-R model. This model uses three features to describe data.

These are:

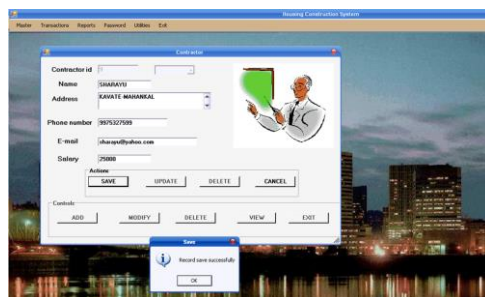
1. Entity
2. Relationship
3. Attribute

- Entity: An entity is person, place, object, event or concept for which the system wants to store data.
- Relationship: It connects entities & represents the meaningful dependency between them.
- Attributes: It specifies the properties of entities & relationships.

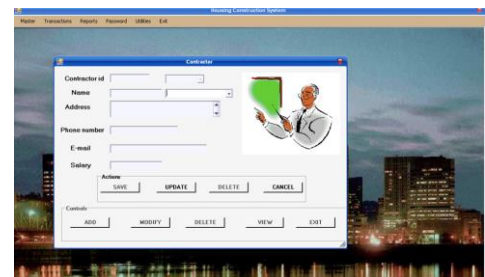
Entity Relationship Diagram Consist of different entities like Builder, Contractor, Site engineer, Supplier & Customer. This ERD is very easy to understand. Because in this ERD every entity has a different attribute.

In ERD these attributes can give the total work or total information of the System. In this system, the builder designs a plan & gives a contract to the contractor. The contractor decides the corresponding site engineer for that site. Then the builder sends the purchase order of material to the supplier. According to this order, the supplier supplies the material with the bill. The supplier receives payment from the builder. The site engineer receives the material. After the whole construction, the builder receives the purchase order from the customer. Then there is a deal between customer and builder. According to that deal, the

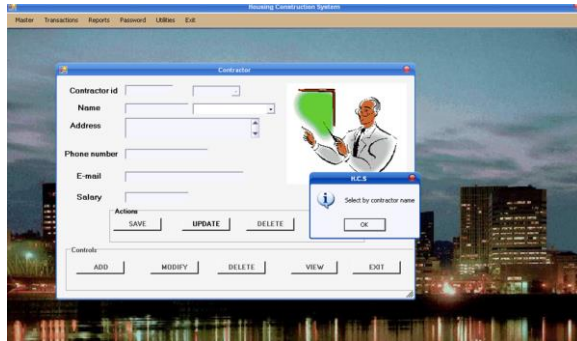
1. Contractor



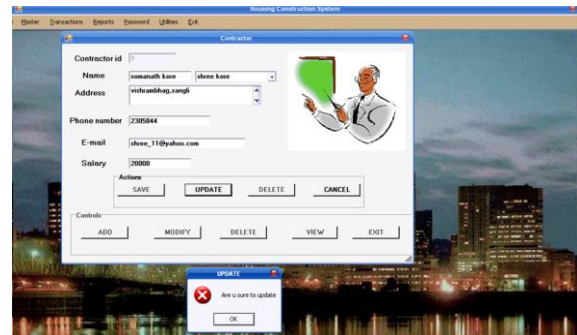
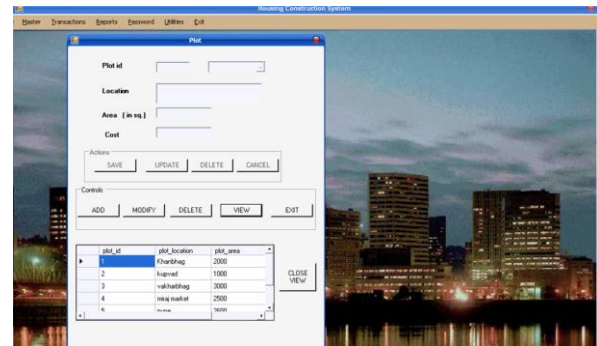
Adding & saving the new entry of contractor



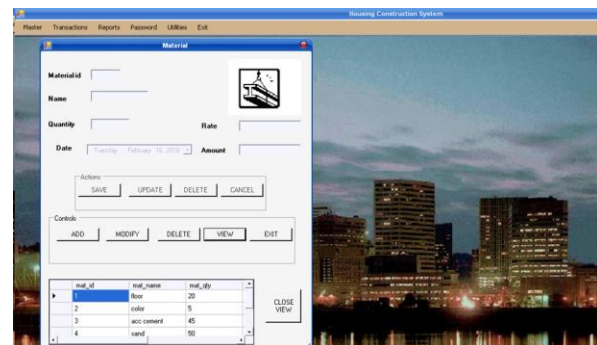
Modifying & saving any record of the contractor



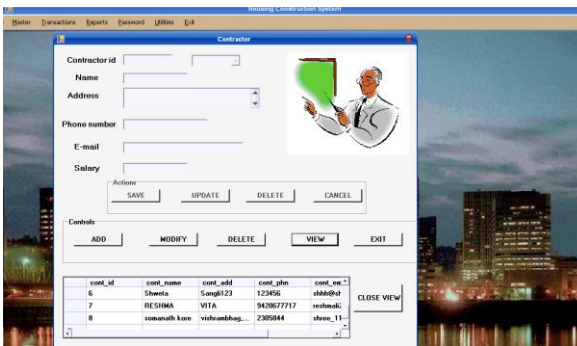
2. Plot



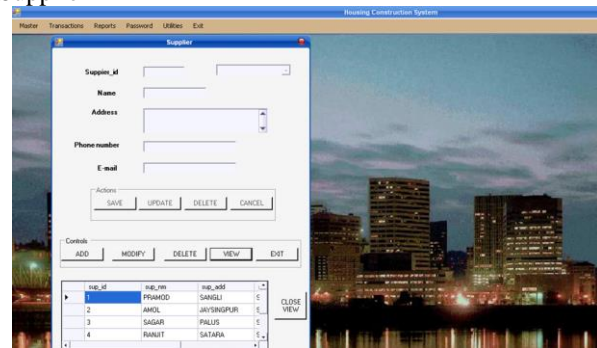
3. Material



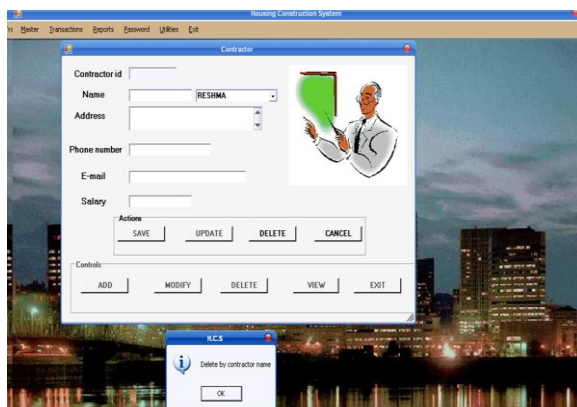
Viewing any record of the contractor



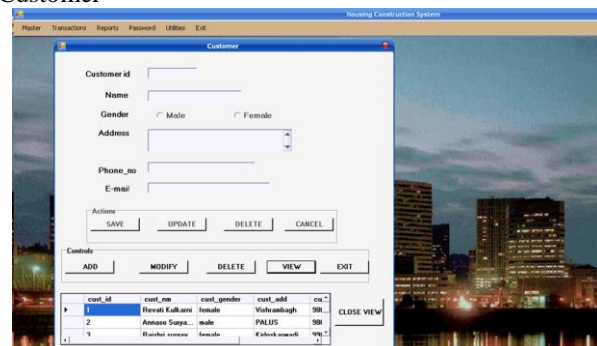
4. Supplier



Deleting any record of the contractor

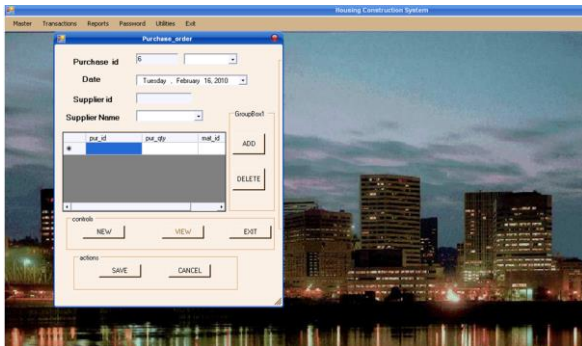


5. Customer

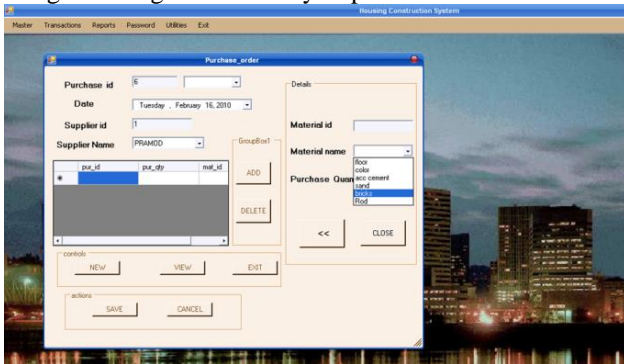


Transaction forms

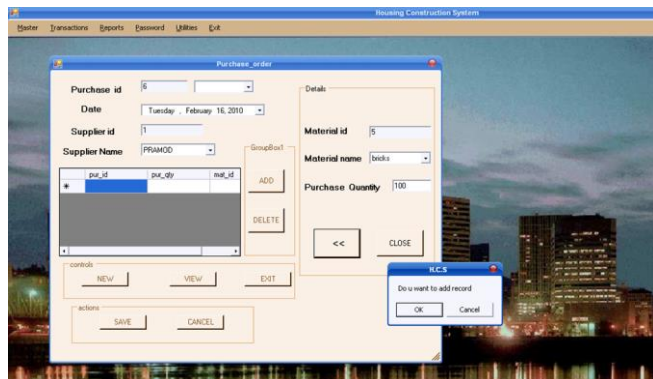
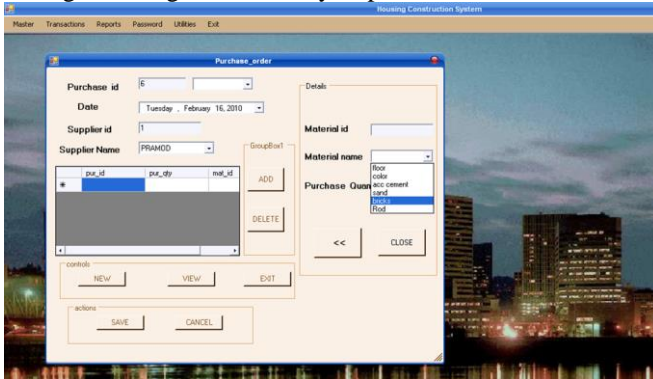
1. Purchase order



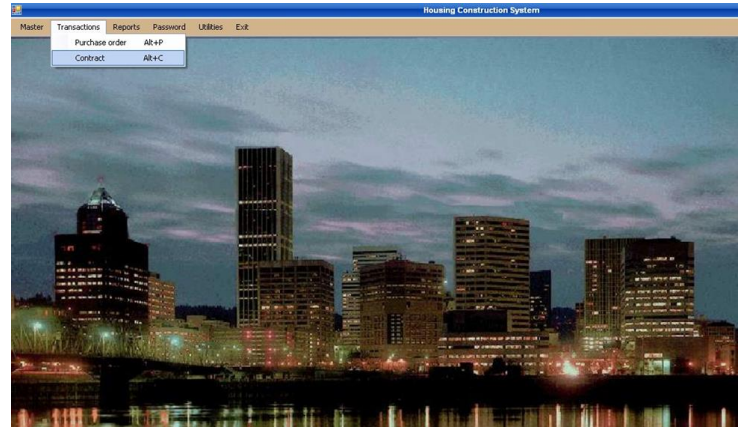
Adding & saving the new entry of purchase order



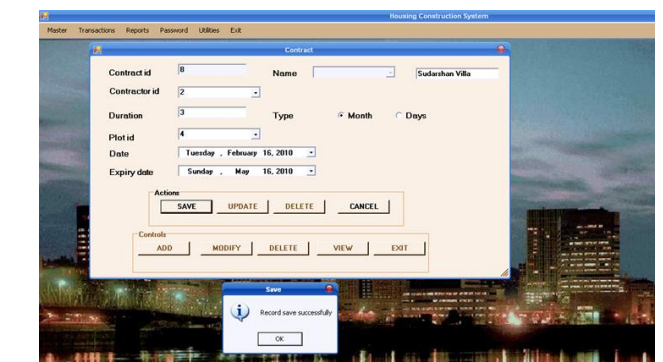
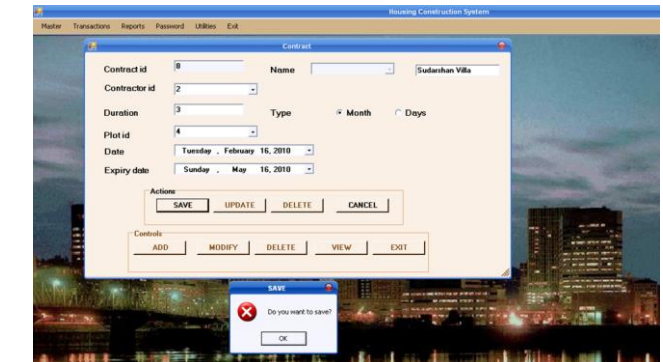
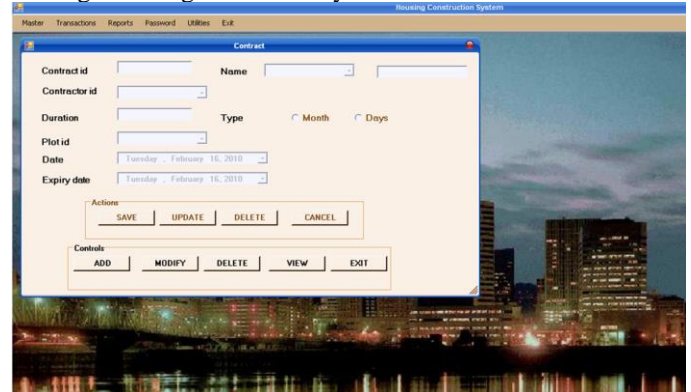
Adding & saving the new entry of purchase order



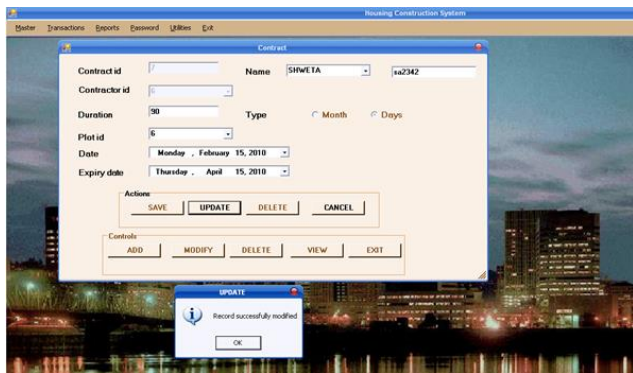
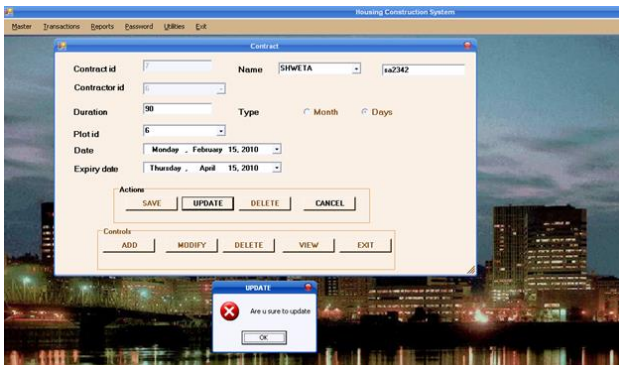
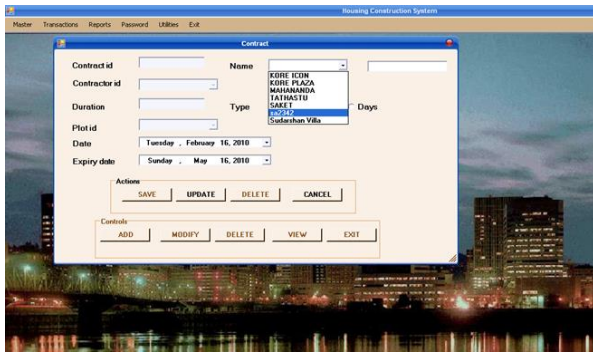
2. Contract



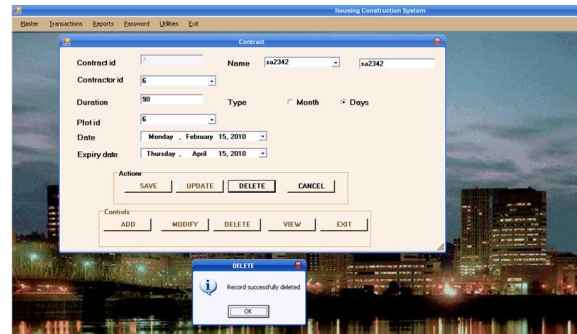
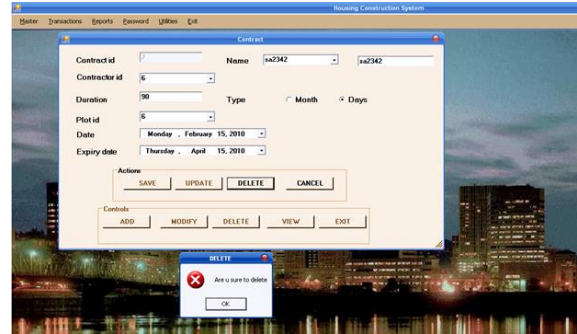
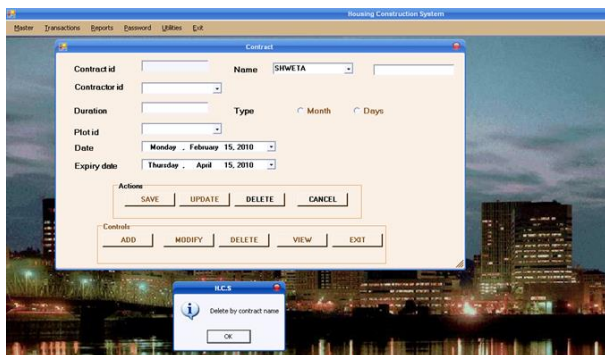
Adding & saving the new entry of contract



Modifying & saving any record of contract

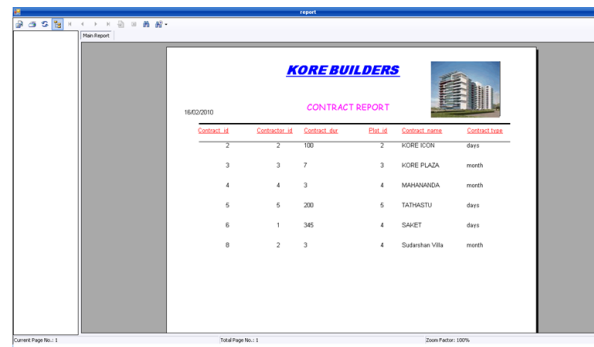


Deleting any record of contract



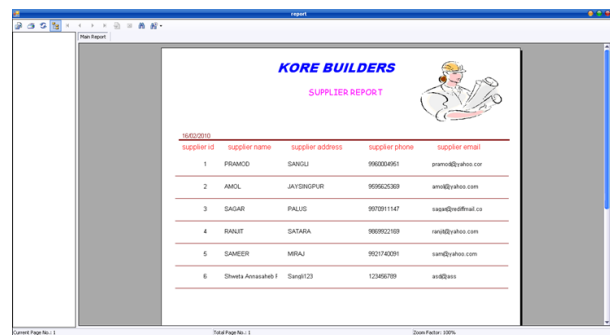
REPORTS

1. Contract report



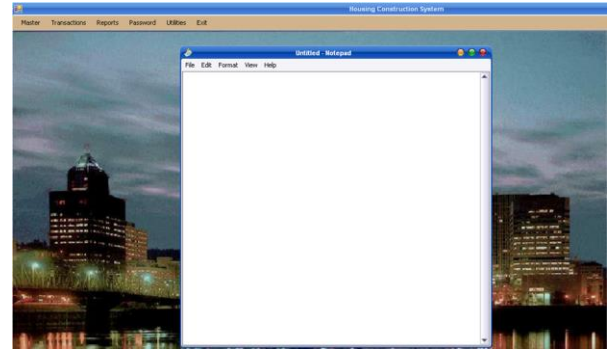
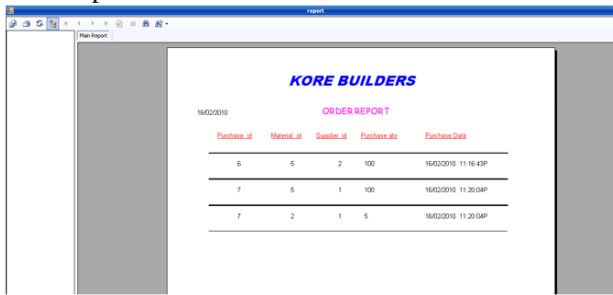
Contract_id	Contractor_id	Contract_Are	Plot_id	Contract_name	Contract_Type
2	2	100	2	KORE BLDG	days
3	3	7	3	KORE PLAZA	month
4	4	3	4	MAHANANDA	month
5	5	200	5	TATHASTU	days
6	1	345	4	SAKET	days
8	2	3	4	Sudashan Villa	month

2. Supplier report

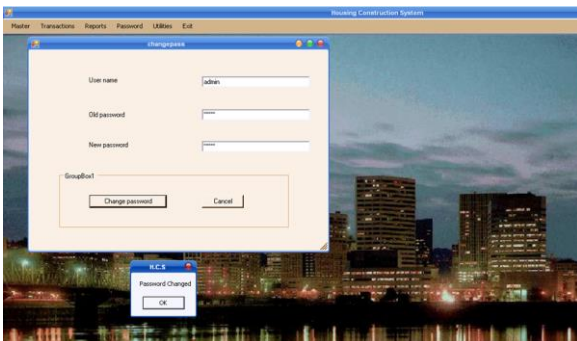


supplier_id	supplier_name	supplier_address	supplier_phone	supplier_email
1	FRANCO	SANGU	990004951	franco@yahoo.com
2	AMOL	JAYDINGPUR	995962309	amol@yahoo.com
3	SAGAR	PALUS	997011147	sagarbedmail.co
4	RANIT	SATARA	995962309	ranit@yahoo.com
5	SAMEER	MIRAJ	992174021	sam@yahoo.com
6	Shweta Anasaahil	Sangli(CD)	121456789	shw@ms

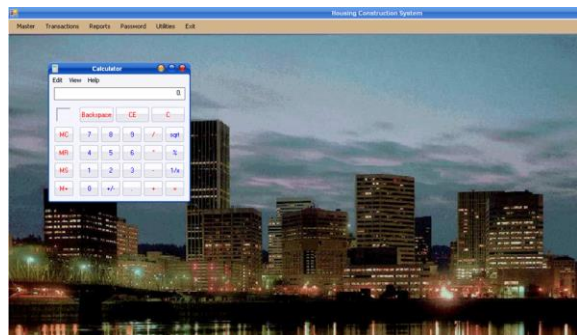
3. Order report



Change password



2. Calculator



Utilities

1. Notepad



4. Future Enhancement

Today “Housing Construction” is working manually. We are made this system is computerized but it is window based. This system is very advantageous for the builder. Because in this we can store a large amount of data easily and search any record easily. There are no chances of lost any documents. And this system is portable to carry anywhere in CD or removable disk. This system can be enhanced in a very attractive manner in the future. We can implement this system as a web application. By making a web site we can launch this website worldwide. We can add customer’s payment records.

5. Conclusion

The presence of a computer system “Housing Construction System “is useful for the builder to keep all the information of the Contractor, Plot, Customer, Supplier, and material. This

system is developed as simple as possible to use. Being user-friendly software the user does not find any difficulty in using it. Keeping all the details records of every Contractor, Plot, Customer, Supplier, and material is a very lengthy costly and tedious job and manual system. This software overcomes all these problems with less maintenance.

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