PROJECT REPORT

ON

Online Web Base Examination System

Submitted in the partial fulfillment of the requirement for the Award of Diploma in

Computer Science and Engineering

Submitted By: -

Deep Govind

Submitted To : -

Govt. Polytechnic Unnao

ACKNOWLEDGMENT

My express thanks and gratitude and thanks to Almighty God, my parents and other family members and friends without whose uncontained support, I could not have made this career in software Engineering.

I wish to place on my record my deep sense of gratitude to my project guide, **Mr. Deep Govind, Govt. Polytechnic, Unnao** for his constant motivation and valuable help through the project work. Express my gratitude to **Mr. Vikalp Kumar Singh** (Training and Placement Officer) , Principal of Government Polytechnic Unnao for his valuable suggestions and advices through out the computer Science and Engg. course. I also extend my thanks to other Faculties for their Cooperation during my Course.

Finally I would like to thank my friends for their cooperation to complete this project.

Deep Govind

CONTENTS

Chapter 1

INTRODUCTION

1.1. INTRODUCTION TO PROJECT

Online Web Examination is a program that automatically generates multiple-choice Computer Architecture tests and handles the submission/marking of results. Login is required for the student. Each client has different functions available. Students have the ability to login, take a test, submit the test, and view previous test results. Admin can create exam types, create exams and assign the exam date to the students in order of the student exam preferred date and he can generate the reports.

Online Web Examination is a program that creates the tests and he submission/marking of results. Login is required for a student. Each client has different functions available. Students have the ability to login, take a test, submit the test, and view previous test results. Admin has the ability to store the results in a database, send exam key word to students, and make tests available to students, correct tests, and store results.

1.2. PURPOSE OF THE PROJECT

Online Web Examination is a program that creates the tests and he submission/marking of results. Login is required for a student. Each client has different functions available. Students have the ability to login, take a test, submit the test, and view previous test results. Admin has the ability to store the results in a database, send exam key word to students, and make tests available to students, correct tests, and store results.

1.3. PROBLEM IN EXISTING SYSTEM

2. It is limited to a single system.
3. It is less user-friendly.
4. It is having lots of manual work (Manual system does not mean that you are working with pen and paper, it also include working on spread sheets and other simple software's).
5. The present system is very less secure.
6. It is unable to generate different kinds of report.
7. It doesn't have the mail feature.

7.2. SOLUTION OF THESE PROBLEMS

The development of the new system contains the following activities, which try to automate the entire process keeping in view of the database integration approach.

The development of the new system contains the following activities, which try to automate the entire process keeping in view of the database integration approach.

- User friendliness is provided in the application with various controls.
- The system makes the overall project management much easier and flexible.
- It can be accessed over the Internet.
- Various classes have been used to provide mail feature.
- There is no risk of data mismanagement at any level while the project development is under process.
- Report generation feature is provided to generate different kinds of reports.
- It provides high level of security using different protocols like https etc.

Chapter 2

SYSTEM ANALYSIS

2.1 INTRODUCTION

After analyzing the requirements of the task to be performed, the next step is to analyze the problem and understand its context. The first activity in the phase is studying the existing system and other is to understand the requirements and domain of the new system. Both the activities are equally important, but the first activity serves as a basis of giving the functional specifications and then successful design of the proposed system. Understanding the properties and requirements of a new system is more difficult and requires creative thinking and understanding of existing running system is also difficult, improper understanding of present system can lead diversion from solution.

2.2 HARDWARE SPEDIFICATIONS

HARDWARE REQUIREMENTS:

- PIV 2.8 GHz Processor and Above
- RAM 512MB and Above
- HDD 20 GB Hard Disk Space and Above

SOFTWARE REQUIREMENTS:

- WINDOWS OS (XP / 2000 / 200 Server / 2003 Server/ or Letter)
- Visual Studio .Net 2012
- Internet Information Server (IIS)
- Visual Studio .Net Framework (Minimal for Deployment)
- SQL Server 2012

2.3 INPUT AND OUTPUT

The main inputs, outputs and major functions of the system are as follows

INPUTS:

- Admin enters his or her user id and password.
- Student enter his or her user id and password.
- Student requests for the Exam.
- Admin assign the test to the Student.
- Admin sends the Exam Key Code to the student.
- Admin can edit the personal details and so on.

OUTPUTS:

- Admin receives personal details.
- Student receives the personal details.
- Student can see the questions and answers to those questions.
- Students receives the results of that test and all the tests results with that id.
- Displays Reports to the Admin.

2.4 PROCESS MODELS USED WITH JUSTIFICATION

ACCESS CONTROL FOR DATA WHICH REQUIRE USER AUTHENTICATION

The following commands specify access control identifiers and they are typically used to authorize and authenticate the user (command codes are shown in parentheses)

USER NAME (USER)

The user identification is that which is required by the server for access to its file system. This command will normally be the first command transmitted by the user after the control connections are made (some servers may require this).

Chapter 3

SELECTED SOFTWARE

3.1 INTRODUCTION TO .NET Framework

The .NET Framework is a new computing platform that simplifies application development in the highly distributed environment of the Internet. The .NET Framework is designed to fulfill the following objectives:

The .NET Framework has two main components: the common language runtime and the .NET Framework class library. The common language runtime is the foundation of the .NET Framework. You can think of the runtime as an agent that manages code at execution time, providing core services such as memory management, thread management, and Remoting, while also enforcing strict type safety and other forms of code accuracy that ensure security and robustness. In fact, the concept of code management is a fundamental principle of the runtime. Code that targets the runtime is known as managed code, while code that does not target the runtime is known as unmanaged code. The class library, the other main component of the .NET Framework, is a comprehensive, object-oriented collection of reusable types that you can use to develop applications ranging from traditional command-line or graphical user interface (GUI) applications to applications based on the latest innovations provided by ASP.NET, such as Web Forms and XML Web services.

For example, ASP.NET hosts the runtime to provide a scalable, server-side environment for managed code. ASP.NET works directly with the runtime to enable Web Forms applications and XML Web services, both of which are discussed later in this topic.

FEATURES OF THE COMMON LANGUAGE RUNTIME

The common language runtime manages memory, thread execution, code execution, code safety verification, compilation, and other system services. These features are intrinsic to the managed code that runs on the common language runtime.

With regards to security, managed components are awarded varying degrees of trust, depending on a number of factors that include their origin (such as the Internet, enterprise network, or local computer). This means that a managed component might or might not be able to perform file-access operations, registry-access operations, or other sensitive functions, even if it is being used in the same active application.

The runtime also enforces code robustness by implementing a strict type- and code-verification infrastructure called the common type system (CTS). The CTS ensures that all managed code is self-describing. The various Microsoft and third-party language compilers.

Finally, the runtime can be hosted by high-performance, server-side applications, such as Microsoft® SQL Server™ and Internet Information Services (IIS). This infrastructure enables you to use managed code to write your business logic, while still enjoying the superior performance of the industry's best enterprise servers that support runtime hosting.

.NET FRAMEWORK CLASS LIBRARY

The .NET Framework class library is a collection of reusable types that tightly integrate with the common language runtime. The class library is object oriented, providing types from which your own managed code can derive functionality. This not only makes the .NET Framework types easy to use, but also reduces the time associated with learning new features of the .NET Framework. In addition, third-party components can integrate seamlessly with classes in the .NET Framework.

For example, you can use the .NET Framework to develop the following types of applications and services:

- Console applications.
- Scripted or hosted applications.
- Windows GUI applications (Windows Forms).
- ASP.NET applications.
- XML Web services.
- Windows services.

3.2 ASP.NET

Server-side applications in the managed world are implemented through runtime hosts. Unmanaged applications host the common language runtime, which allows your custom managed code to control the behavior of the server. This model provides you with all the features of the common language runtime and class library while gaining the performance and scalability of the host server.

The following illustration shows a basic network schema with managed code running in different server environments. Servers such as IIS and SQL Server can perform standard operations while your application logic executes through the managed code.

LANGUAGE SUPPORT

The Microsoft .NET Platform currently offers built-in support for three languages: C#, Visual Basic, and JScript.

3.3 C#.NET

ADO.NET OVERVIEW

ADO.NET is an evolution of the ADO data access model that directly addresses user requirements for developing scalable applications. It was designed specifically for the web with scalability, statelessness, and XML in mind.

ADO.NET uses some ADO objects, such as the **Connection** and **Command** objects, and also introduces new objects. Key new ADO.NET objects include the **DataSet**, **DataReader**, and **DataAdapter**.

The important distinction between this evolved stage of ADO.NET and previous data architectures is that there exists an object -- the **DataSet** -- that is separate and distinct from any data stores. Because of that, the **DataSet** functions as a standalone entity. You can think of the DataSet as an always disconnected recordset that knows nothing about the

source or destination of the data it contains. Inside a **DataSet**, much like in a database, there are tables, columns, relationships, constraints, views, and so forth.

A **DataAdapter** is the object that connects to the database to fill the **DataSet**. Then, it connects back to the database to update the data there, based on operations performed while the **DataSet** held the data. In the past, data processing has been primarily connection-based. Now, in an effort to make multi-tiered apps more efficient, data processing is turning to a message-based approach that revolves around chunks of information.

- **Connections**. For connection to and managing transactions against a database.
- **Commands**. For issuing SQL commands against a database.
- **DataReaders**. For reading a forward-only stream of data records from a SQL Server data source.
- **DataSets**. For storing, Remoting and programming against flat data, XML data and relational data.
- **DataAdapters**. For pushing data into a **DataSet**, and reconciling data against a database.

Connections:

Connections are used to 'talk to' databases, and are represented by provider-specific classes such as **SqlConnection**. Commands travel over connections and resultsets are returned in the form of streams which can be read by a **DataReader** object, or pushed into a **DataSet** object.

Commands:

Commands contain the information that is submitted to a database, and are represented by provider-specific classes such as **SqlCommand**. A command can be a stored procedure call, an UPDATE statement, or a statement that returns results. You can also use input and output parameters, and return values as part of your command syntax. The example below shows how to issue an INSERT statement against the **Northwind** database.

DataReaders:

The **DataReader** object is somewhat synonymous with a read-only/forward-only cursor over data. The **DataReader** API supports flat as well as hierarchical data. A **DataReader** object is returned after executing a command against a database. The format of the returned **DataReader** object is different from a recordset. For example, you might use the **DataReader** to show the results of a search list in a web page.

DATASETS AND DATAADAPTERS:

DataSets

The **DataSet** object is similar to the ADO **Recordset** object, but more powerful, and with one other important distinction: the **DataSet** is always disconnected. The **DataSet** object represents a cache of data, with database-like structures such as tables, columns, relationships, and constraints. However, though a **DataSet** can and does behave much like a database, it is important to remember that **DataSet** objects do not interact directly with databases, or other source data. This allows the developer to work with a programming model that is always consistent, regardless of where the source data resides. Data coming from a database, an XML file, from code, or user input can all be placed into **DataSet** objects. Then, as changes are made to the **DataSet** they can be tracked and verified before updating the source data. The **GetChanges** method of the **DataSet** object actually creates a second **DatSet** that contains only the changes to the data. This **DataSet** is then used by a **DataAdapter**

DATAADAPTERS (OLEDB/SQL)

The **DataAdapter** object works as a bridge between the **DataSet** and the source data. Using the provider-specific **SqlDataAdapter** (along with its associated **SqlCommand** and **SqlConnection**) can increase overall performance when working with a Microsoft SQL Server databases. For other OLE DB-supported databases, you would use the **OleDbDataAdapter** object and its associated **OleDbCommand** and **OleDbConnection** objects.

Chapter 4

SYSTEM DESIGN

4.1 INTRODUCTION

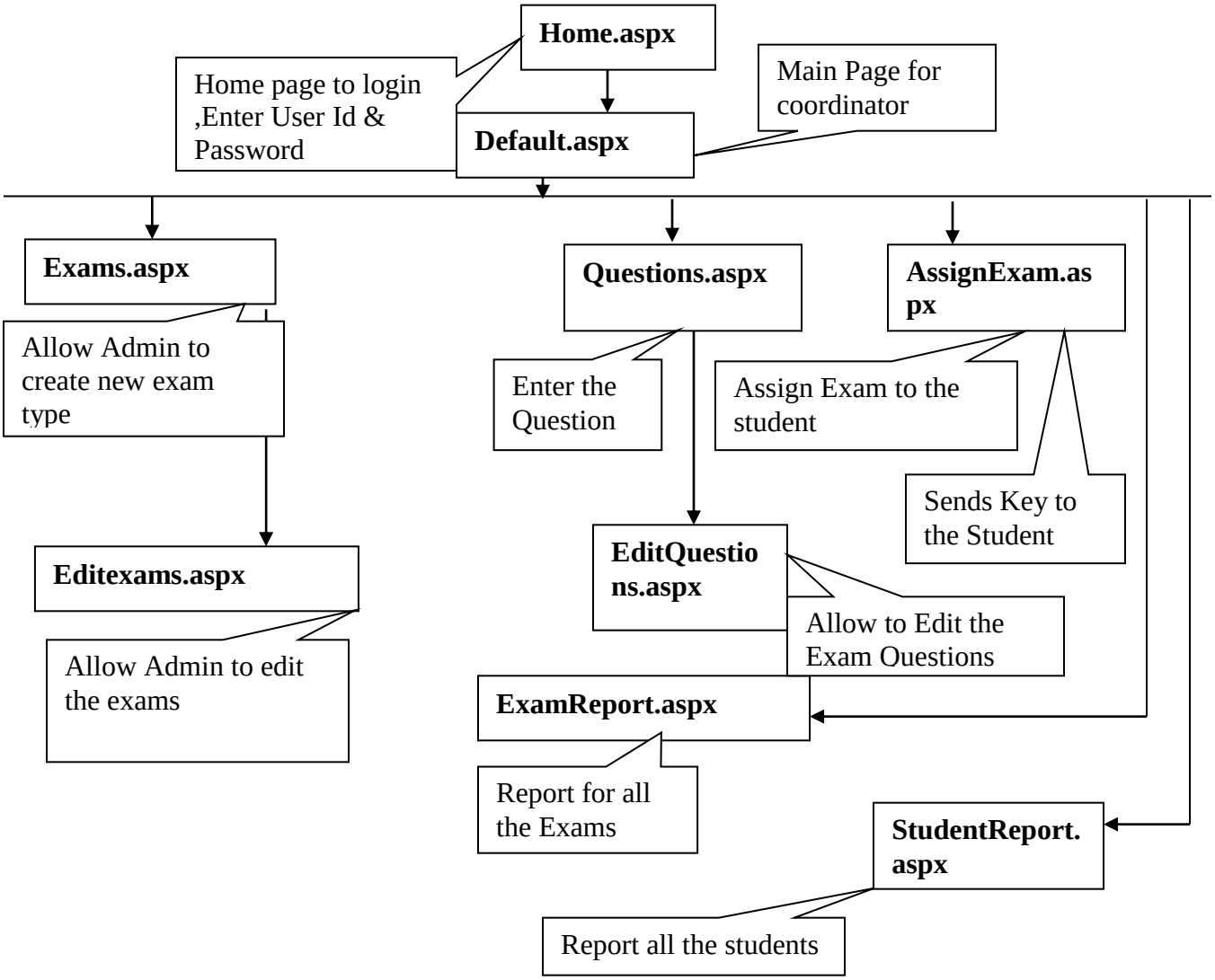
Software design sits at the technical kernel of the software engineering process and is applied regardless of the development paradigm and area of application. Design is the first step in the development phase for any engineered product or system. The designer's goal is to produce a model or representation of an entity that will later be built. Beginning, once system requirement have been specified and analyzed, system design is the first of the three technical activities -design, code and test that is required to build and verify software.

The importance can be stated with a single word "Quality". Design is the place where quality is fostered in software development. Design provides us with representations of software that can assess for quality. Design is the only way that we can accurately translate a customer's view into a finished software product or system.

During design, progressive refinement of data structure, program structure, and procedural details are developed reviewed and documented. System design can be viewed from either technical or project management perspective. From the technical point of view, design is comprised of four activities – architectural design, data structure design, interface design and procedural design.

4.2 SYSTEM WORKFLOW

Change the workflow according to your project in the Admin point of view

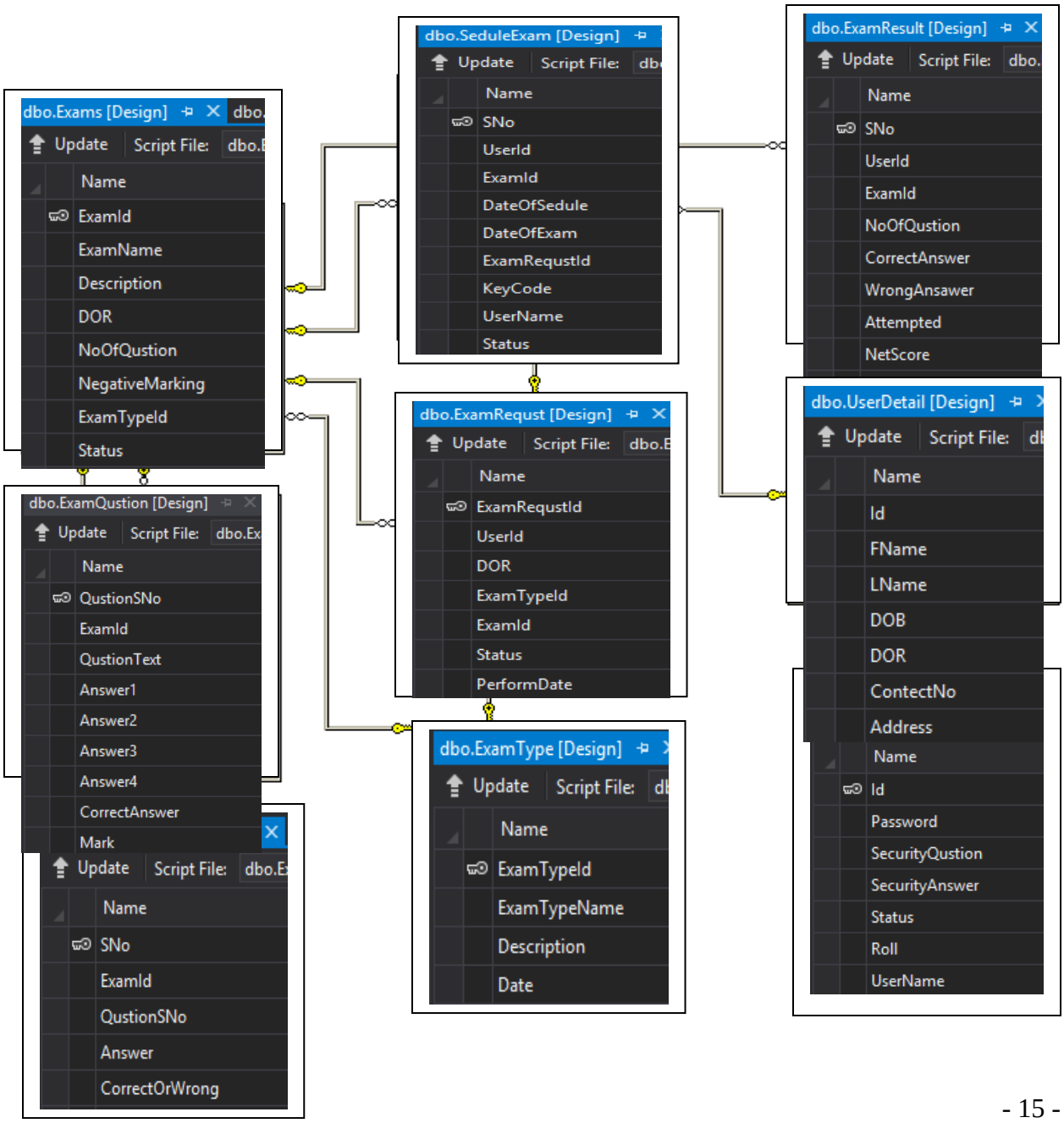


4.3 E – R DIAGRAMS

- The relation upon the system is structure through a conceptual ER-Diagram, which not only specifics the existential entities but also the standard relations through which the system exists and the cardinalities that are necessary for the system state to continue.

- The entity Relationship Diagram (ERD) depicts the relationship between the data objects. The ERD is the notation that is used to conduct the date modeling activity the attributes of each data object noted is the ERD can be described resign a data object descriptions.
- The set of primary components that are identified by the ERD are
  - ◆ Data object
  - ◆ Relationships
  - ◆ Attributes
  - ◆ Various types of indicators.

The primary purpose of the ERD is to represent data objects and their relationships.



4.4 DATA FLOW DIAGRAMS

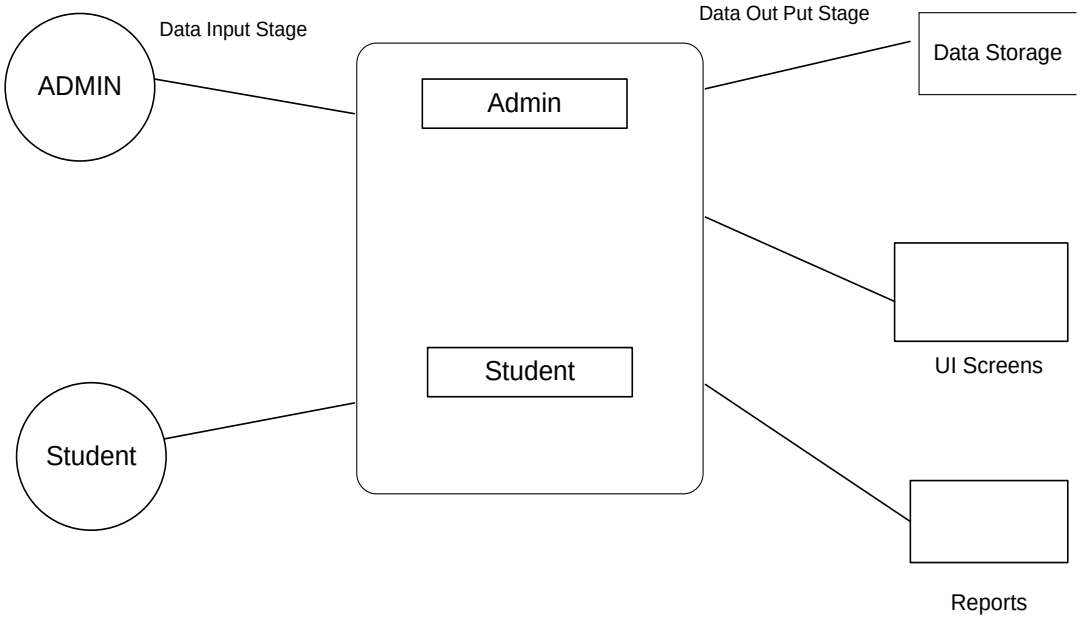
A data flow diagram is graphical tool used to describe and analyze movement of data through a system. These are the central tool and the basis from which the other components are developed. The transformation of data from input to output, through processed, may be described logically and independently of physical components associated with the system. These are known as the logical data flow diagrams. The physical data flow diagrams show the actual implements and movement of data between people, departments and workstations.

DATA FLOW

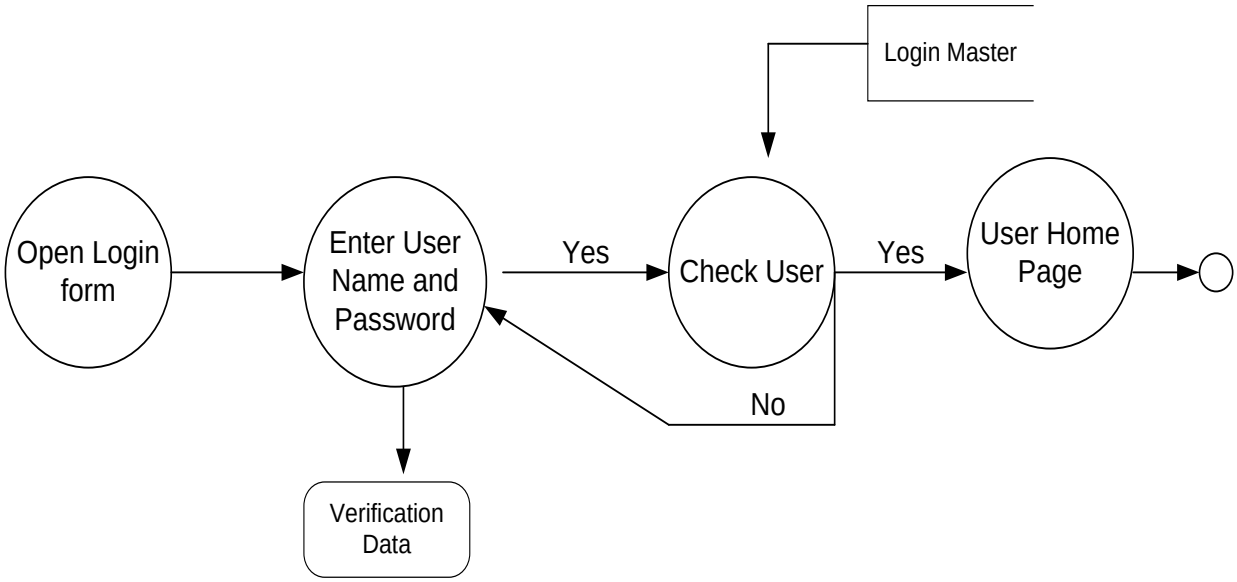
1) A Data Flow has only one direction of flow between symbols. It may flow in both directions between a process and a data store to show a read before an update. The later is usually indicated however by two separate arrows since these happen at different type.
2) A join in DFD means that exactly the same data comes from any of two or more different processes data store or sink to a common location.
3) A data flow cannot go directly back to the same process it leads. There must be atleast one other process that handles the data flow produce some other data flow returns the original data into the beginning process.

A data flow has a noun phrase label more than one data flow noun phrase can appear on a single arrow as long as all of the flows on the same arrow move together as one package.

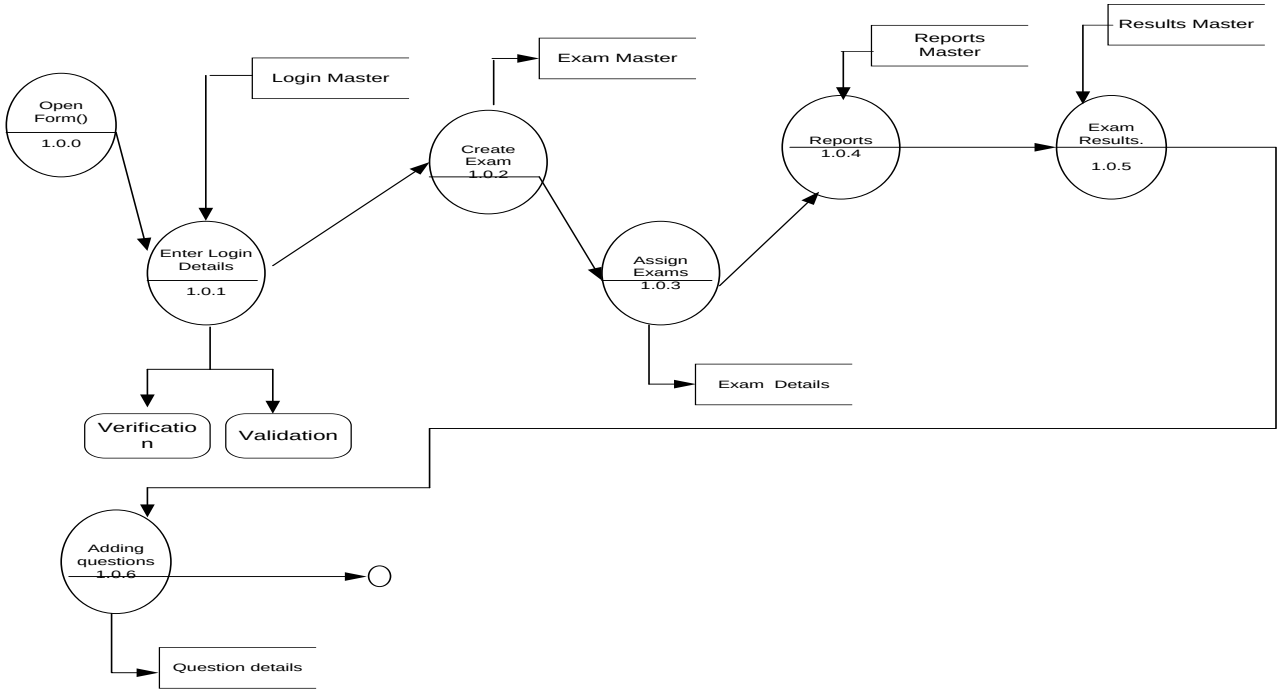
Context Level DFD



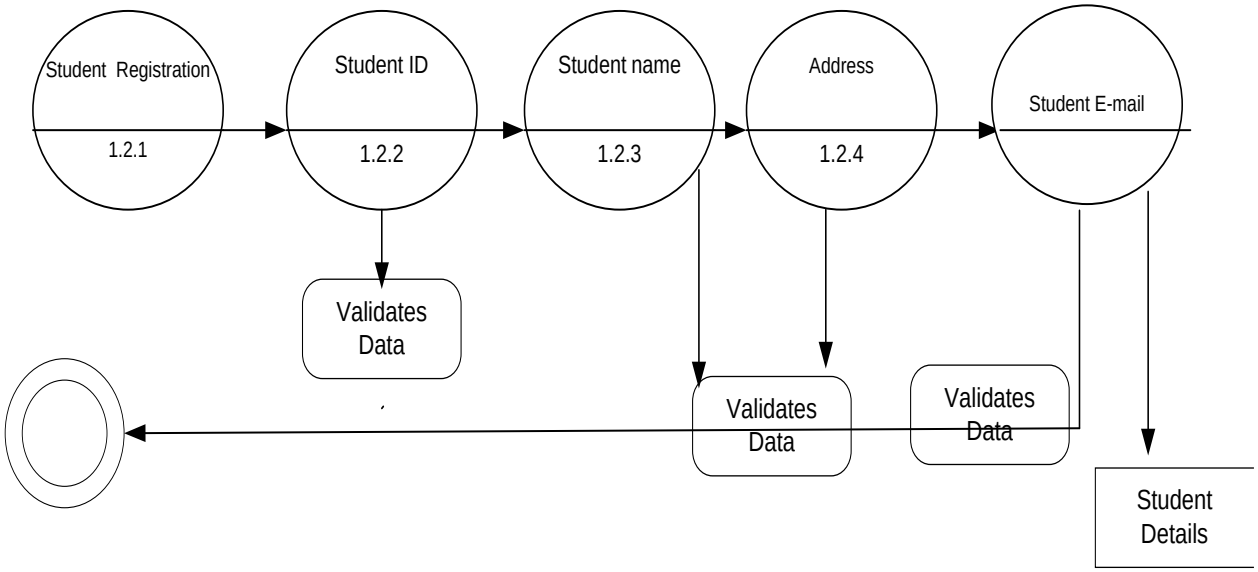
Login DFD



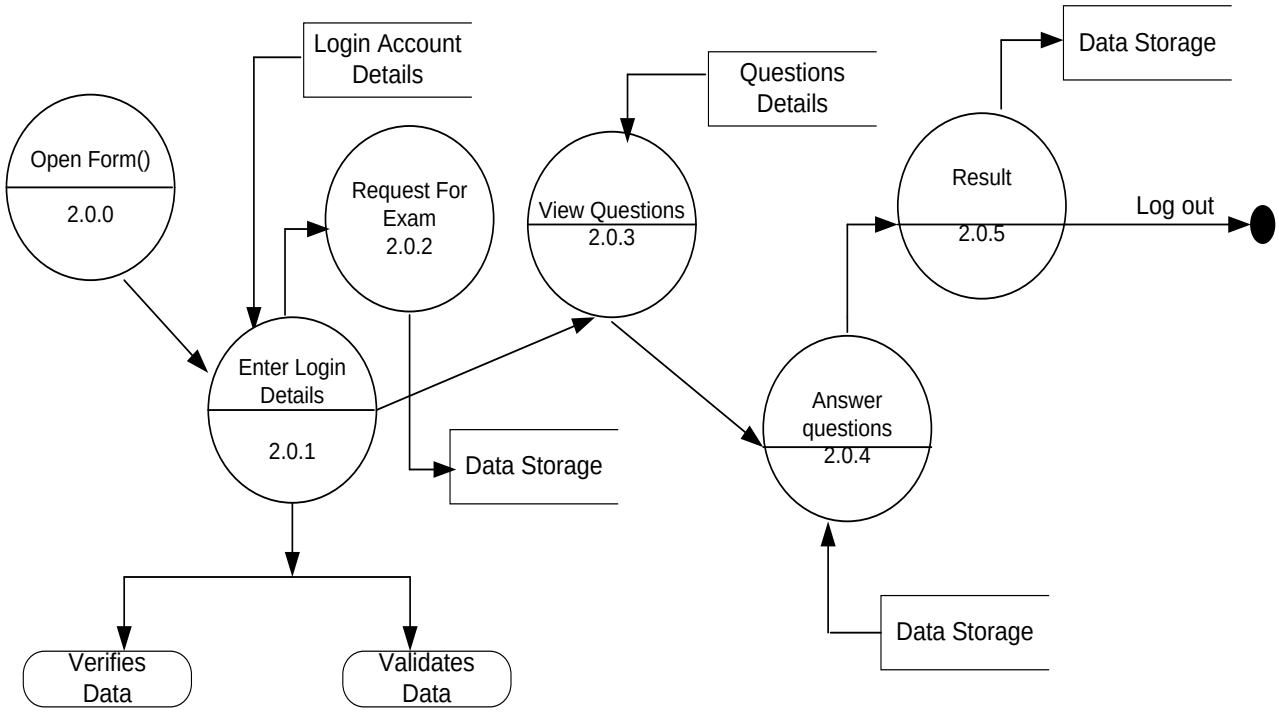
Admin Activities (1st Level)



Student Register



Student Activity



4.5 DATA DICTONARY

After carefully understanding the requirements of the client the the entire data storage requirements are divided into tables. The below tables are normalized to avoid any anomalies during the course of data entry.

dbo.UserDetail [Design] | dbo.SeduleExam [Design]

Update | Script File: dbo.UserDetail.sql

Name	Data Type	Allow Nulls
Id	int	☐
FName	varchar(100)	☐
LName	varchar(100)	☑
DOB	varchar(50)	☑
DOR	varchar(50)	☑
ContectNo	varchar(20)	☑
Address	varchar(1000)	☑

dbo.ExamDatails [Design] | dbo.ExamQustion [Design]

Update | Script File: dbo.ExamDatails.sql

Name	Data Type	Allow Nulls
SNo	int	☐
ExamId	int	☑
QustionSNo	int	☑
Answer	varchar(50)	☑
CorrectOrWrong	int	☑

dbo.Exams [Design] | dbo.ExamResult [Design] | d

Update | Script File: dbo.Exams.sql

Name	Data Type	Allow Nulls
ExamId	int	☐
ExamName	varchar(100)	☑
Description	varchar(1000)	☑
DOR	varchar(50)	☑
NoOfQustion	int	☑
NegativeMarking	varchar(50)	☑
ExamTypeId	int	☑
Status	int	☑

dbo.SeduleExam [Design] | dbo.LoginDatails [Design]

Update | Script File: dbo.SeduleExam.sql

Name	Data Type	Allow Nulls
SNo	int	☐
UserId	int	☑
ExamId	int	☑
DateOfSedule	varchar(50)	☑
DateOfExam	varchar(50)	☑
ExamRequstId	int	☑
KeyCode	varchar(50)	☑
UserName	varchar(50)	☑
Status	int	☑

dbo.ExamType [Design] | dbo.Exams [Design] | db

Update | Script File: dbo.ExamType.sql

Name	Data Type	Allow Nulls
ExamTypeId	int	☐
ExamTypeName	varchar(100)	☑
Description	varchar(1000)	☑
Date	varchar(50)	☑

dbo.ExamResult [Design] | dbo.ExamRequst [Design]

Update | Script File: dbo.ExamResult.sql

Name	Data Type	Allow Nulls
SNo	int	☐
UserId	int	☑
ExamId	int	☑
NoOfQustion	int	☑
CorrectAnswer	int	☑
WrongAnsawer	int	☑
Attempted	int	☑
NetScore	int	☑
TimeTaken	varchar(50)	☑
ExamAttendDate	varchar(50)	☑

dbo.LoginDatails [Design] | dbo.ExamType [Design]

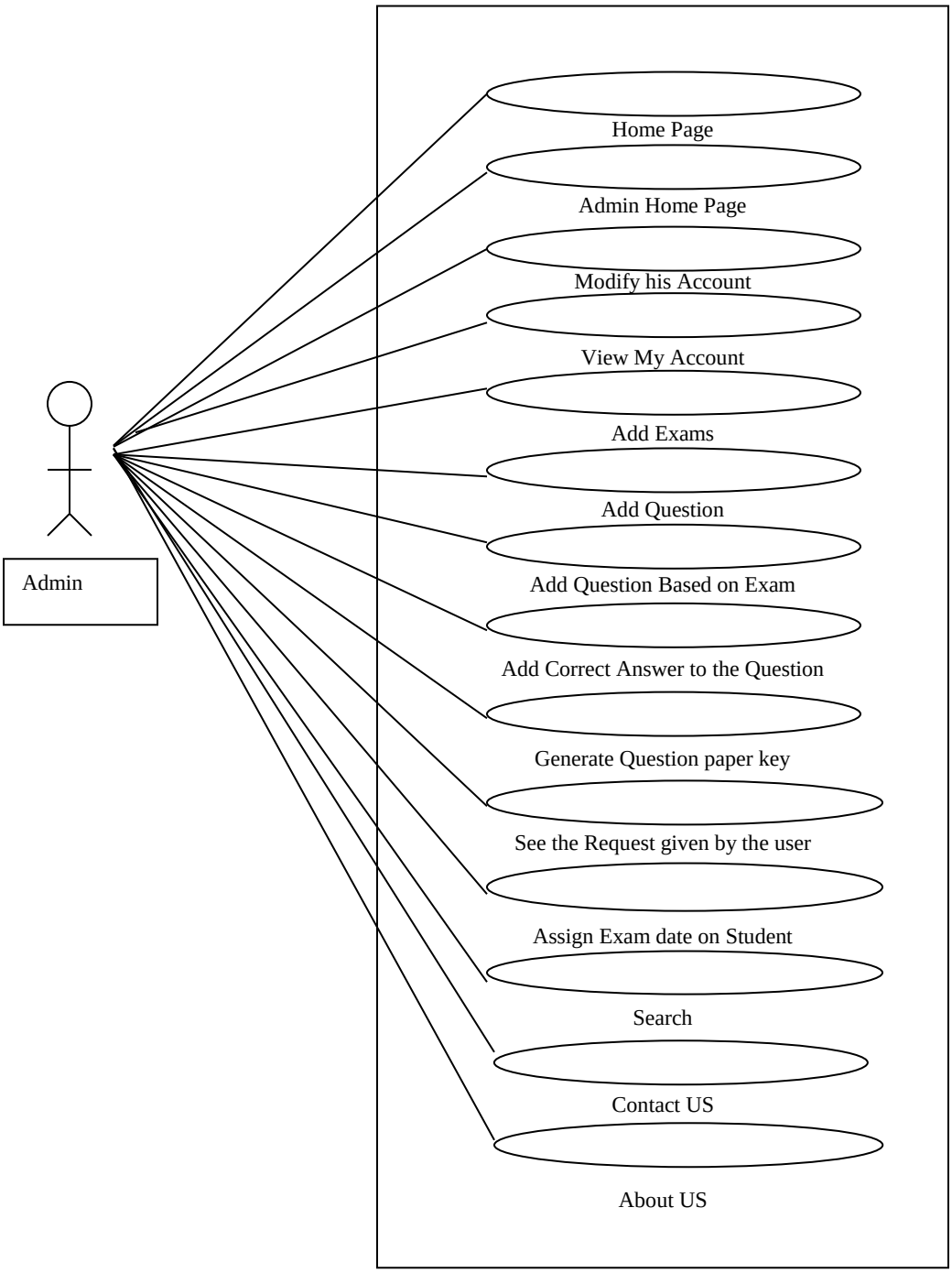
Update | Script File: dbo.LoginDatails.sql

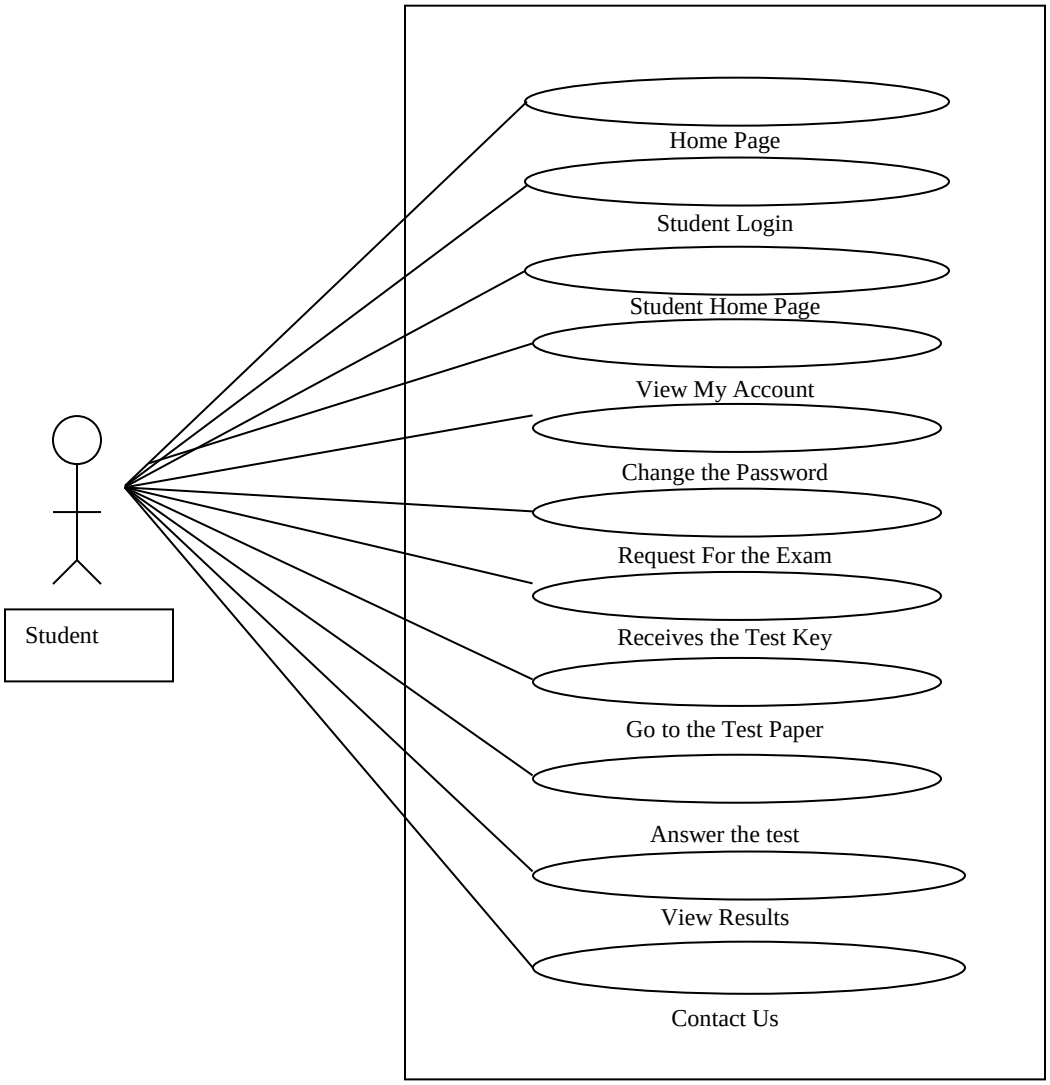
Name	Data Type	Allow Nulls
Id	int	☐
Password	varchar(50)	☑
SecurityQustion	varchar(100)	☑
SecurityAnswer	varchar(100)	☑
Status	varchar(50)	☑
Roll	varchar(50)	☑
UserName	varchar(50)	☑

dbo.ExamDatails [Design] | dbo.ExamQustion [Design]

Update | Script File: dbo.ExamQustion.sql

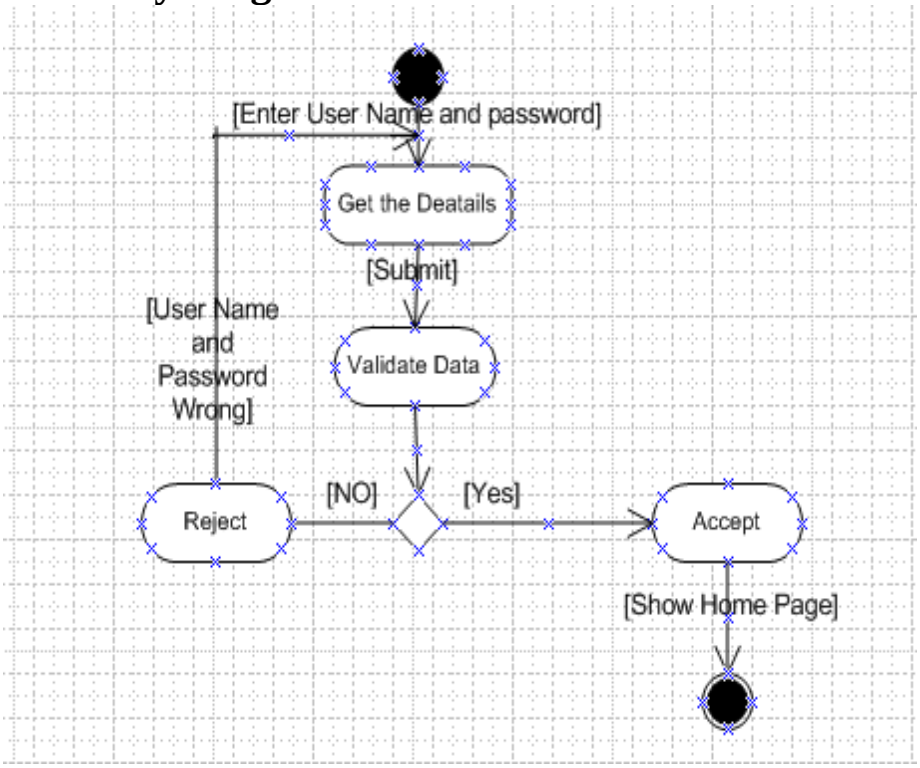
Name	Data Type	Allow Null
QustionSNo	int	☐
ExamId	int	☑
QustionText	varchar(1000)	☑
Answer1	varchar(1000)	☑
Answer2	varchar(1000)	☑
Answer3	varchar(1000)	☑
Answer4	varchar(1000)	☑
CorrectAnswer	varchar(1000)	☑
Mark	int	☑


Admin
Home Page
Admin Home Page
Modify his Account
View My Account
Add Exams
Add Question
Add Question Based on Exam
Add Correct Answer to the Question
Generate Question paper key
See the Request given by the user
Assign Exam date on Student
Search
Contact US
About US

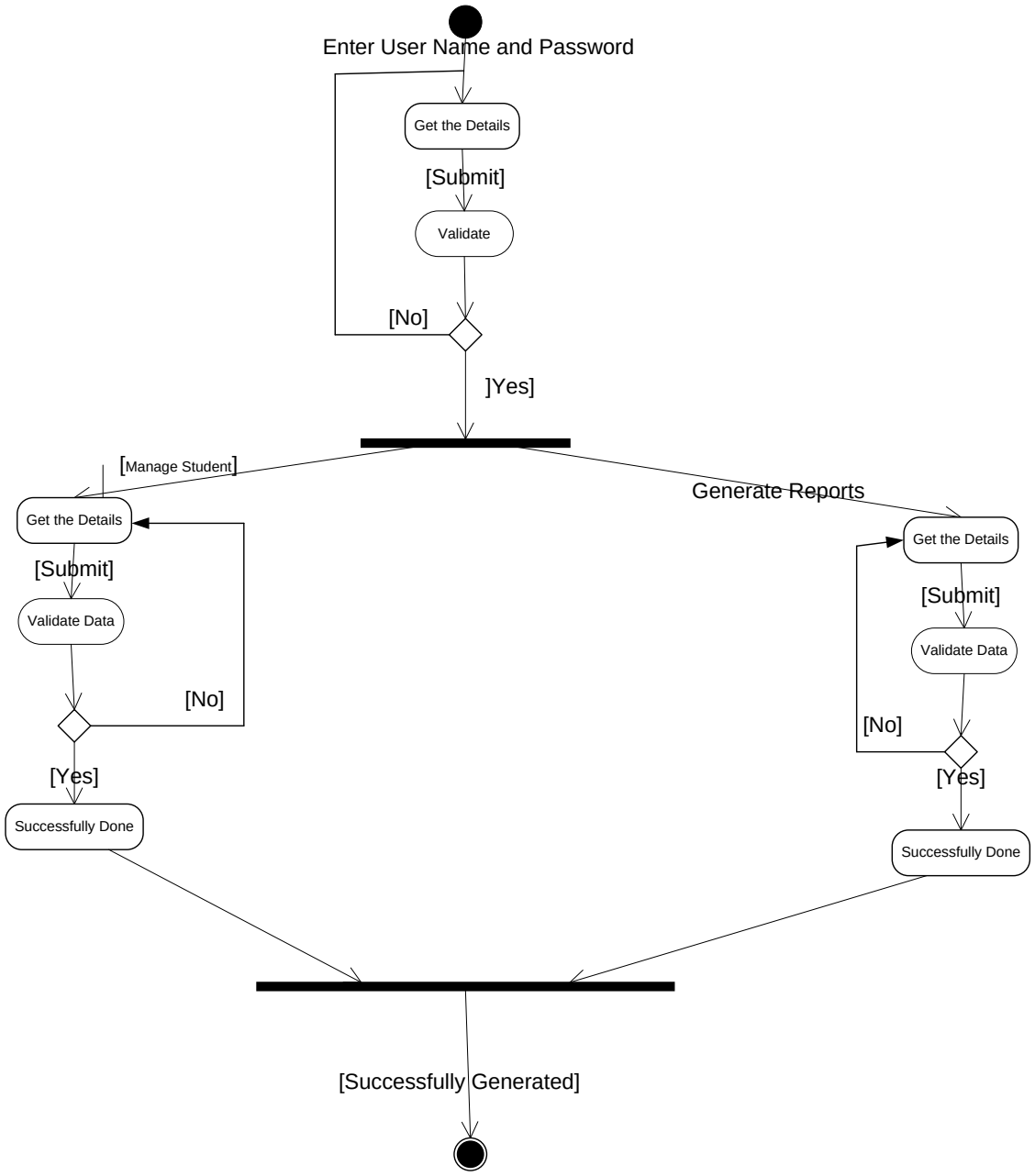

Home Page
Student Login
Student Home Page
View My Account
Change the Password
Request For the Exam
Receives the Test Key
Go to the Test Paper
Answer the test
View Results
Contact Us
Student

Activity Diagrams

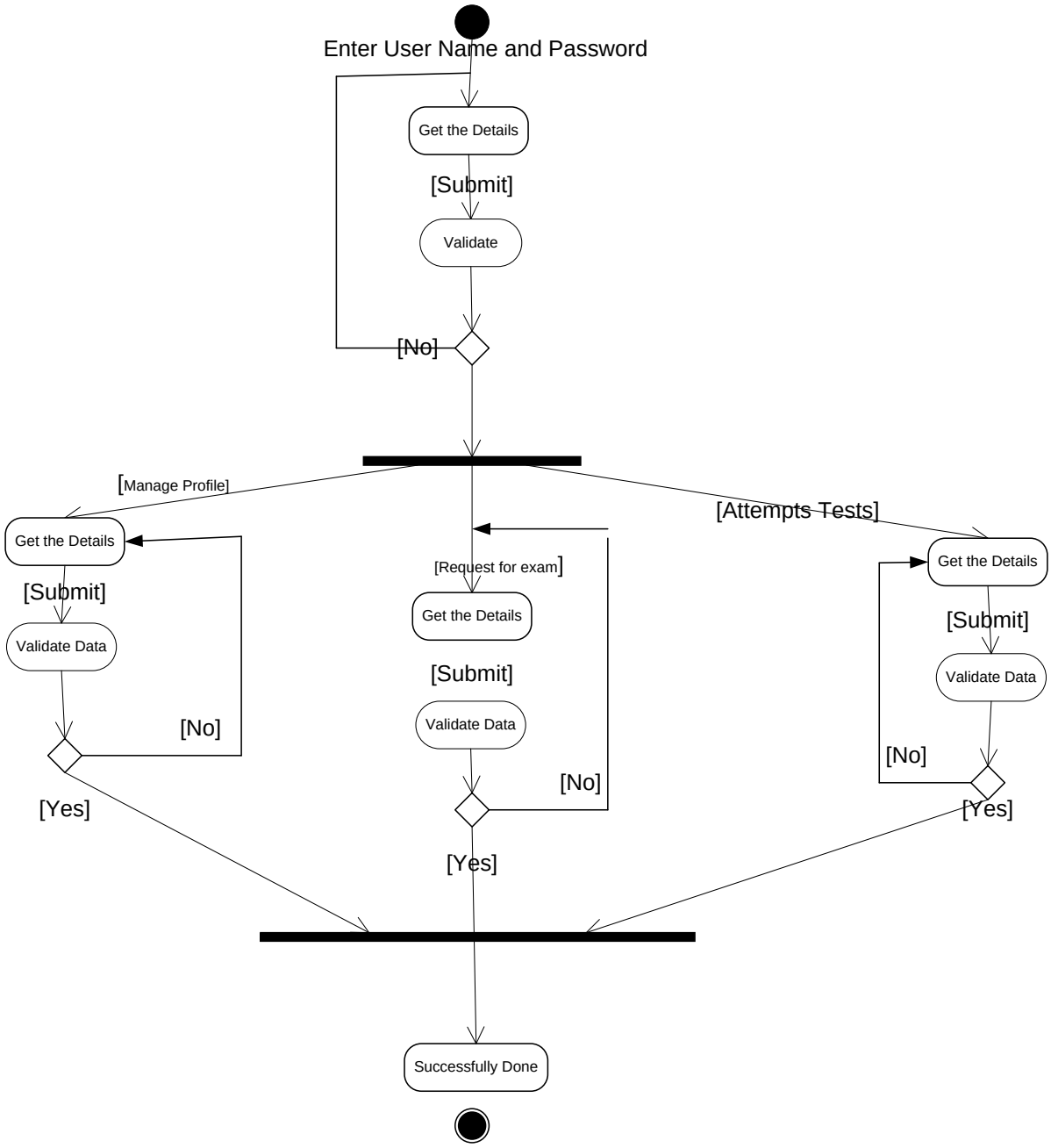
Login Activity Diagram:



Admin Activity Diagram:

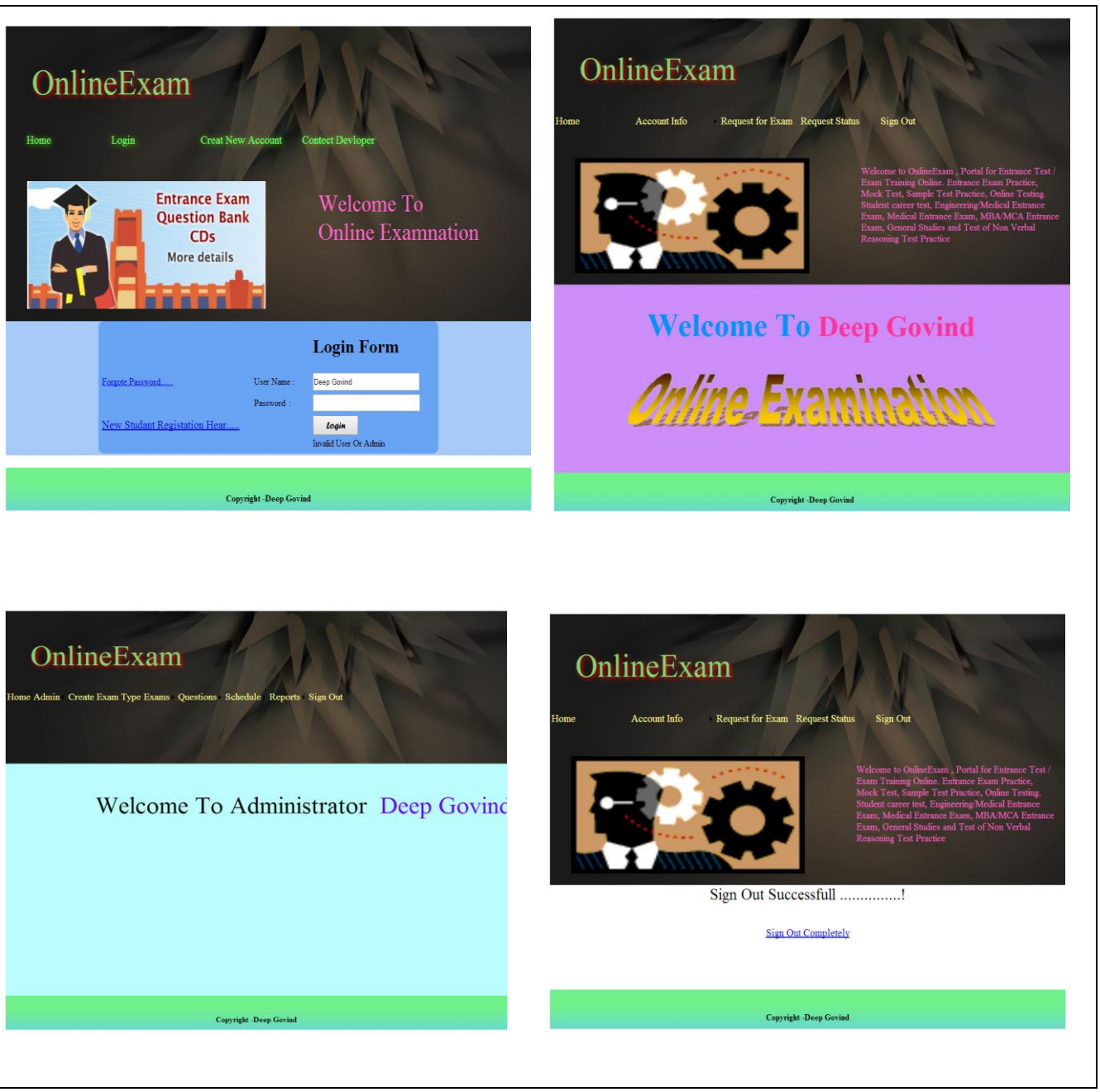


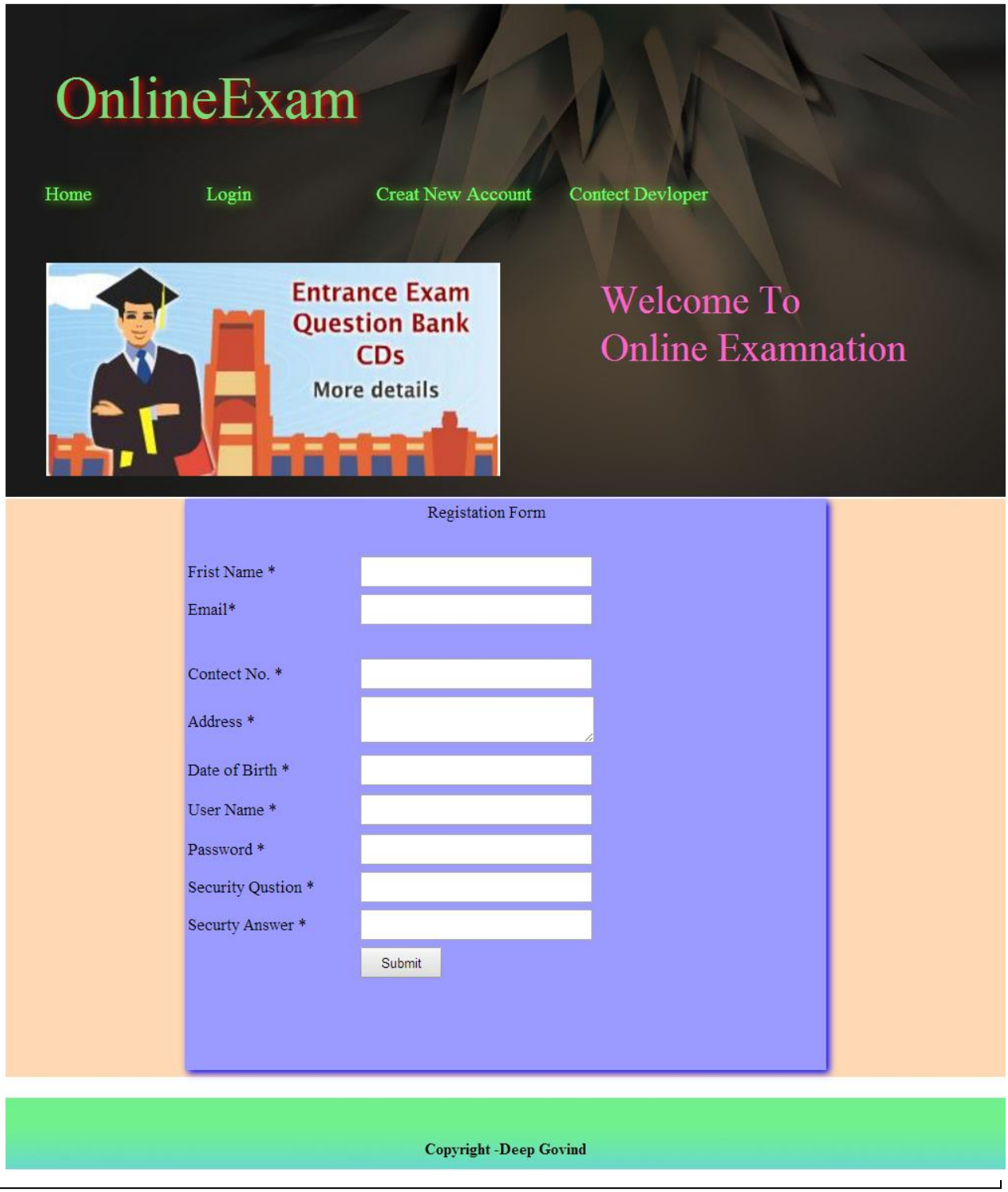
Employee Activity Diagram:


Enter User Name and Password
Get the Details
[Submit]
Validate
[No]
[Manage Profile]
[Attempts Tests]
Get the Details
[Submit]
Validate Data
[No]
[Yes]
[Request for exam]
Get the Details
[Submit]
Validate Data
[No]
[Yes]
Get the Details
[Submit]
Validate Data
[No]
[Yes]
Successfully Done

Chapter 5

OUTPUT SCREENS




OnlineExam
Home
Login
Creat New Account
Contect Devloper
Entrance Exam
Question Bank
CDs
More details
Welcome To
Online Examnation
Registation Form
Frist Name *
Email*
Contect No. *
Address *
Date of Birth *
User Name *
Password *
Security Qustion *
Securty Answer *
Submit
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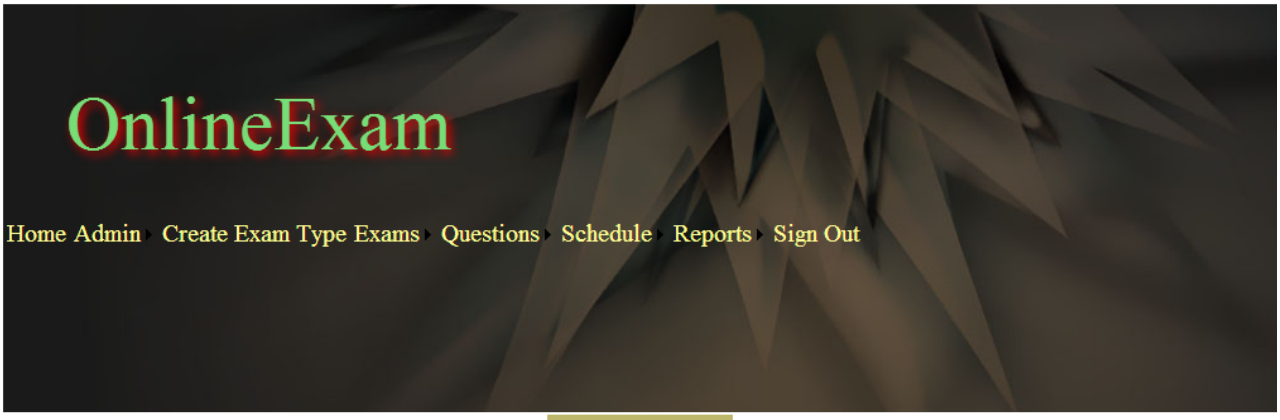
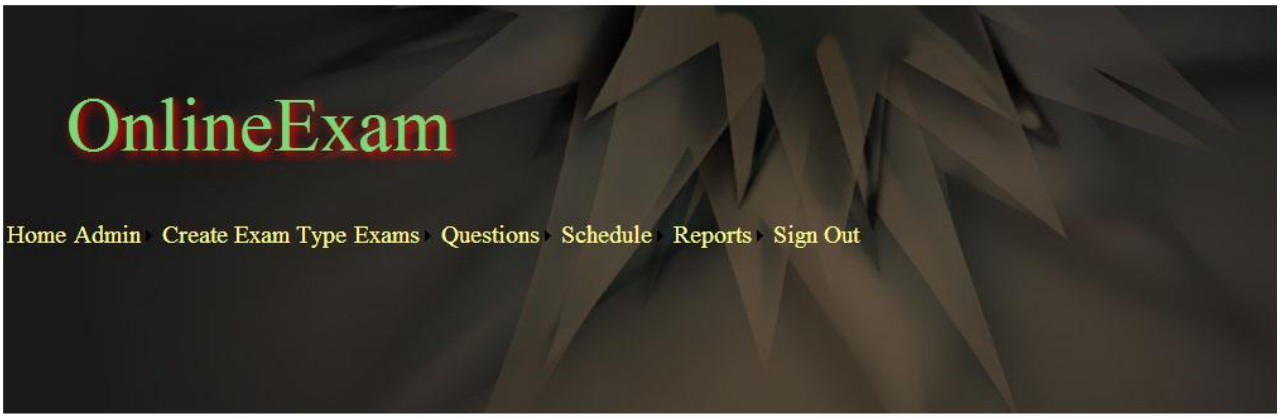


Student Report

UseId	Exam Type	Exam Name	No Of Questions	Correct Answers	Wrong Answers	Attempted	Marks	Time Taken	ExamAttended Date
6	Programing	ASP.net	10	2	4	6	2	00:00:15	8/1/2015
6	Programing	ASP.net	10	0	0	0	0	00:00:07	8/1/2015
6	Programing	ASP.net	10	0	0	0	0	00:00:03	8/1/2015
7	Programing	ASP.net	10	0	0	0	0	00:00:04	8/1/2015
6	Programing	C Programing	10	1	1	2	1	00:00:05	8/1/2015
6	Programing	C Programing	10	2	0	2	3	00:00:08	8/1/2015
6	Programing	ASP.net	10	0	0	0	0	00:00:06	8/1/2015
6	Programing	C++ Programing	10	1	0	1	1	00:00:07	8/2/2015
6	Programing	C Programing	10	0	0	0	0	00:00:05	8/2/2015
6	Programing	C++ Programing	10	0	0	0	0	00:00:03	8/2/2015
7	Programing	ASP.net	10	0	0	0	0	00:00:04	8/2/2015
7	Programing	ASP.net	10	6	0	6	6	00:00:39	8/2/2015
6	Programing	ASP.net	10	0	0	0	0	00:00:03	8/2/2015



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16	Delphi	Delphi	8/1/2015	10	Edit Delete

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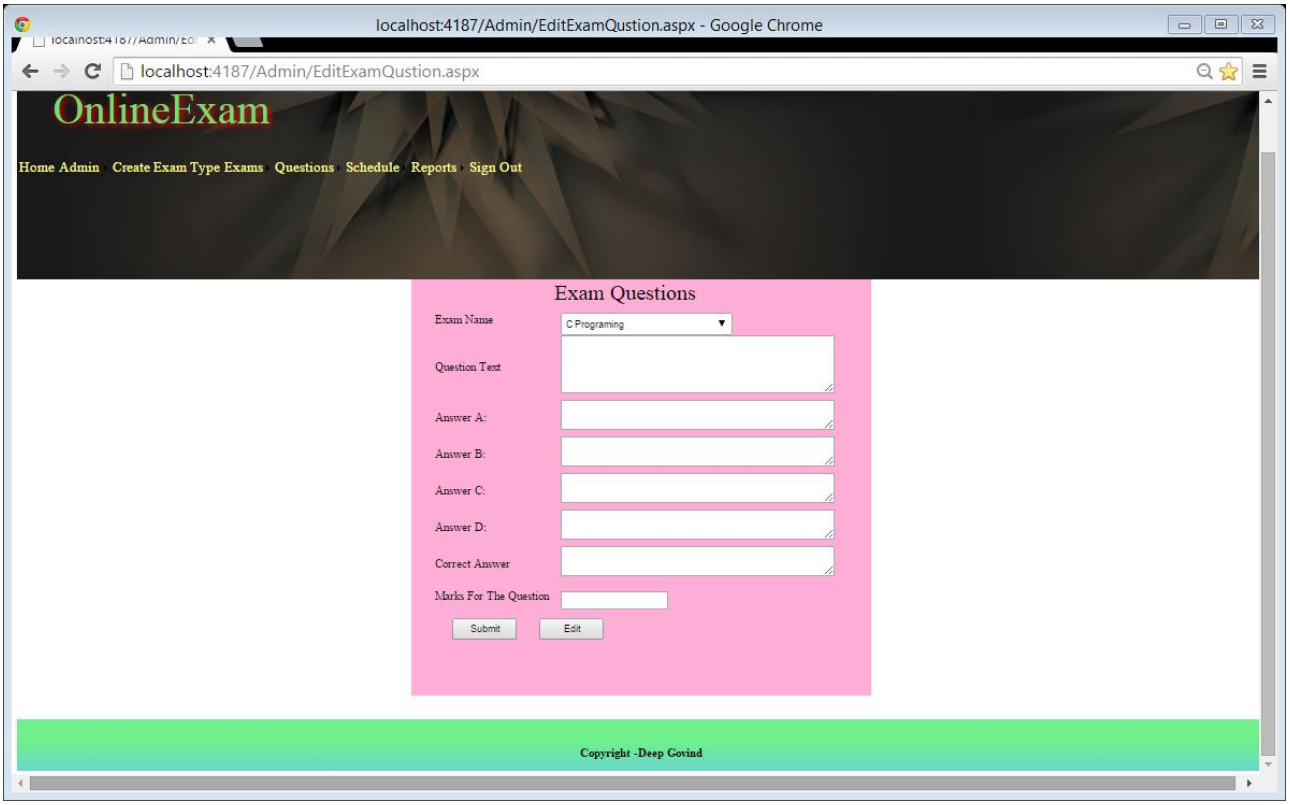

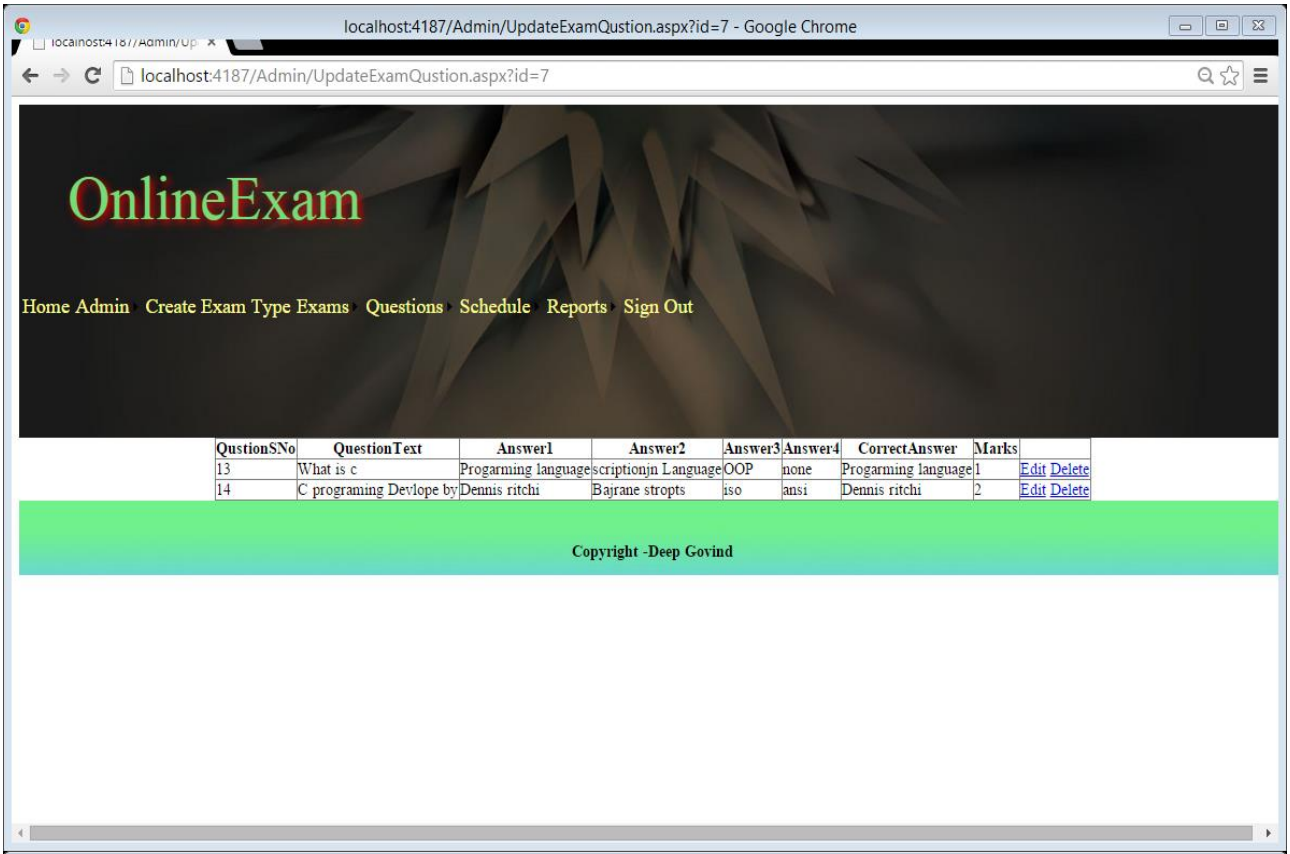
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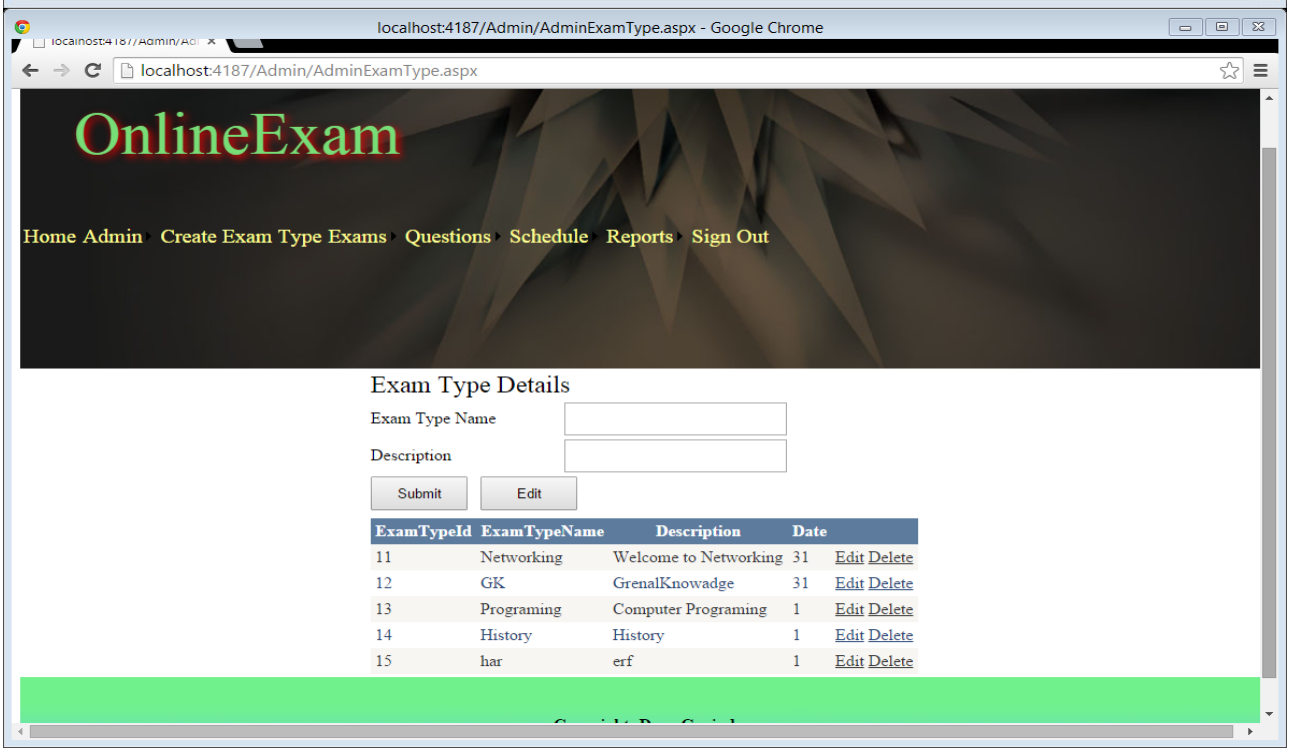
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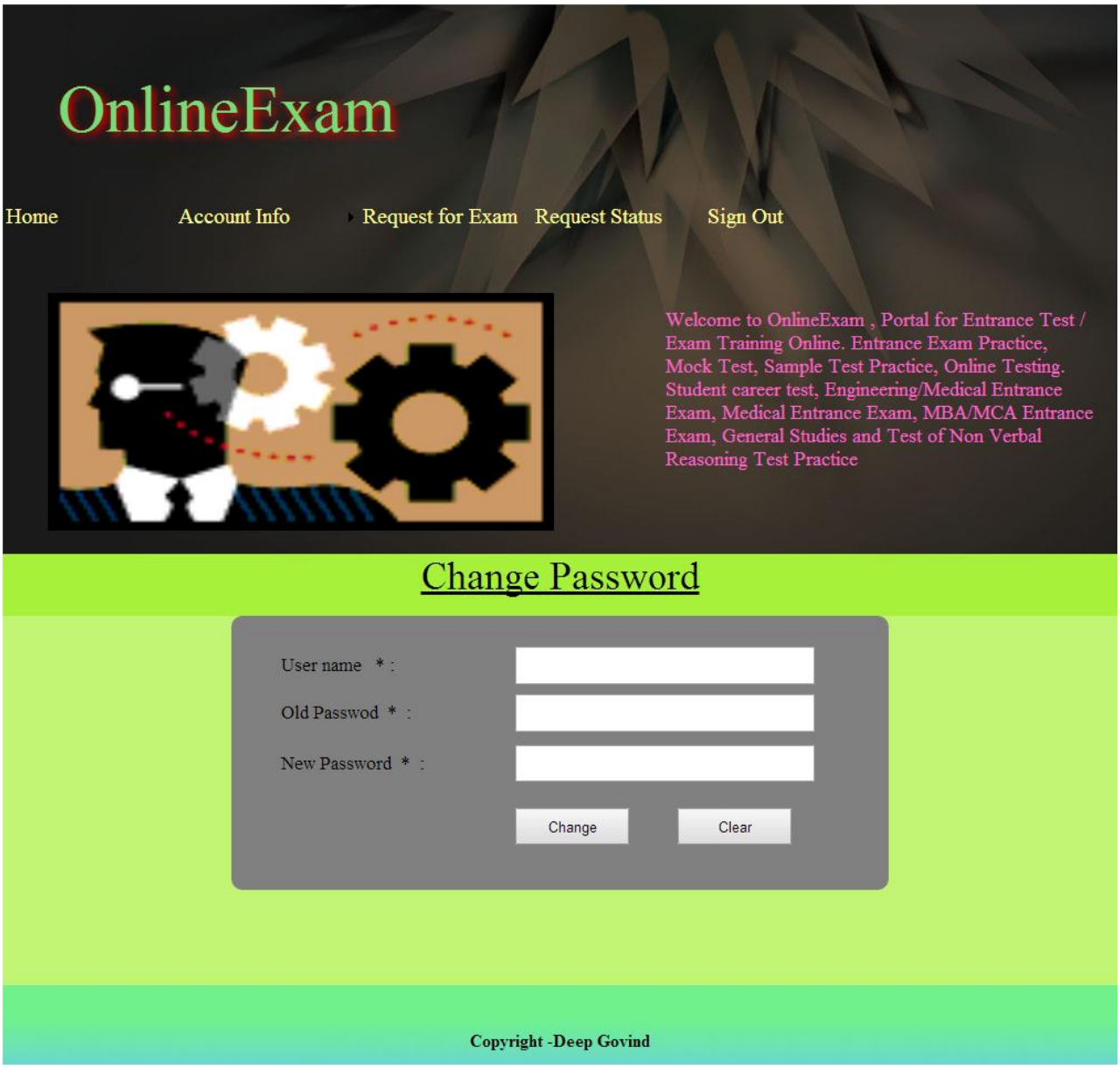
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Chapter 6

FUTURE IMPROVEMENT

- This System being web-based and an undertaking of Cyber Security Division, needs to be thoroughly tested to find out any security gaps.

- A console for the data centre may be made available to allow the personnel to monitor on the sites which were cleared for hosting during a particular period.

- Moreover, it is just a beginning; further the system may be utilized in various other types of auditing operation viz. Network auditing or similar process/workflow based applications...

Chapter 7

CONCLUSION

It has been a great pleasure for me to work on this exciting and challenging project. This project proved good for me as it provided practical knowledge of not only programming in ASP.NET and VB.NET web based application and no some extent Windows Application and SQL Server, but also about all handling procedure related with **"Online Web Examination".** It also provides knowledge about the latest technology used in developing web enabled application and client server technology that will be great demand in future. This will provide better opportunities and guidance in future in developing projects independently.

BENEFITS:

The project is identified by the merits of the system offered to the user. The merits of this project are as follows: -

- It's a web-enabled project.
- This project offers user to enter the data through simple and interactive forms. This is very helpful for the client to enter the desired information through so much simplicity.
- The user is mainly more concerned about the validity of the data, whatever he is entering. There are checks on every stages of any

new creation, data entry or updation so that the user cannot enter the invalid data, which can create problems at later date.

- Sometimes the user finds in the later stages of using project that he needs to update some of the information that he entered earlier. There are options for him by which he can update the records. Moreover there is restriction for his that he cannot change the primary data field. This keeps the validity of the data to longer extent.
- User is provided the option of monitoring the records he entered earlier. He can see the desired records with the variety of options provided by him.
- From every part of the project the user is provided with the links through framing so that he can go from one option of the project to other as per the requirement. This is bound to be simple and very friendly as per the user is concerned. That is, we can sat that the project is user friendly which is one of the primary concerns of any good project.
- Data storage and retrieval will become faster and easier to maintain because data is stored in a systematic manner and in a single database.
- Decision making process would be greatly enhanced because of faster processing of information since data collection from

information available on computer takes much less time then manual system.

- Allocating of sample results becomes much faster because at a time the user can see the records of last years.
- Easier and faster data transfer through latest technology associated with the computer and communication.
- Through these features it will increase the efficiency, accuracy and transparency,

LIMITATIONS:

- The size of the database increases day-by-day, increasing the load on the database back up and data maintenance activity.
- Training for simple computer operations is necessary for the users working on the system.

Chapter 8

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Thank You