P-2703

DEVELOPMENT OF AN ONLINE COURSE PORTAL FOR A CAMPUS OR ORGANIZATION

By

DIVYA.G.RAWAL
Reg. No. 71206621014

MAHATMA GANDHI KCT CBE-6 CENTRAL LIBRARY

Of

KUMARAGURU COLLEGE OF TECHNOLOGY, COIMBATORE

A PROJECT REPORT

Submitted to the

FACULTY OF INFORMATION AND COMMUNICATION ENGINEERING

In partial fulfillment of the requirements
For the award of the degree

Of

MASTER OF COMPUTER APPLICATION

July, 2009

BONAFIDE CERTIFICATE

Kumaraguru College of Technology

Coimbatore-641006.

Department of Computer Applications

BONAFIDE CERTIFICATE

Certified that this project report titled **DEVELOPMENT OF AN ONLINE COURSE PORTAL FOR A CAMPUS OR ORGANIZATION** is the bonafide work of **Ms.Divya.G.Rawal (Reg.No. 71206621014)** who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein dose not form part of any other project report or dissertation on the basis of which a degree or award was conferred on a earlier occasion on this or any other candidate.

Supervisor **Head of the Department**

Submitted for the viva-voce examination held on 06.07.2007

Internal Examiner **External Examiner**

Name User:181826 Submit time:2009-05-08 15:26:07

Cognizant Technology Solutions India Private Ltd.
Kumaraguru College of Technology,
STPI - IT Park,
Mountain View Campus,
Coimbatore - 641006. INDIA.
Phone : (+91-422) 3984000
Fax : (+91-422) 3984060

www.cognizant.com

Cognizant

To whomsoever it may Concern

This is to certify that **Miss Divya.G.Rawal** a student of **Kumaraguru College of Technology** had undergone a project titled **Development of an Online Course Portal for a campus** at **Cognizant Technology Solutions India Pvt.Ltd** under the guidance of **Mr. Rajendran G** (Manager Projects).

The duration of the project was from 01/11/08 and 01/05/09.

We wish her all the success for her future endeavors

For Cognizant Technology Solutions India Pvt. Ltd.

Prabhu Chari
Asst. Manager - Human Resources

May 10, 2009

ACKNOWLEDGEMENT

ACKNOWLEDGEMENT

I wish to express my deep unfathomable feeling of gratitude and indebtedness to **Dr.R.Annamalai**, Vice Principal – Kumaraguru College of Technology, Coimbatore for the successful completion of the project work.

I am very glad to express a special word of thanks to **Dr. M. Gururajan M.Sc., Ph.D,** Head of the Department, Department of Computer Applications, Kumaraguru College of Technology, Coimbatore for encouraging me to do this work.

I am very much indebted to **Dr.Muthukumar,Ph.D Course Coordinator,** Department of Computer Applications, Kumaraguru College of Technology, Coimbatore for his complete assistance, guidance and support given to me throughout my project.

I would express heartfelt thanks to my internal guide **Mr. M. Manikantan, M.C.A.,M.phil** Senior Lecturer, Department of Computer Applications, Kumaraguru College of Technology as without his best guidance it would not have been possible for me to successfully complete this project and also for his innovative ideas at crucial times and tremendous encouragement

My heartfelt gratitude to **Mr. Rajendran G,** Manager Projects, Cognizant Technology Solutions for his valuable guidance and patience, without which this project would not have been completed

And I would like to thank my parents, friends, and all those who helped me in this project and whose names are leftover.

ABSTRACT

ABSTRACT

This project aims at creating a Courses portal for a campus/organization. This allows registered users of the system to join a course available in the site and access the materials published for the course. People can register themselves as students of a course or Faculty for a course. When a person registers himself as a Faculty, an approval mechanism should be triggered which sends an email to the Administrator for approving the person as a Faculty. There will be an admin approval page where admin can approve the faculty members for the course.

The course home page should contain the title of the course and a brief description. There will be a discussion board for each course where students can interact, an announcement section, which contains the latest announcements, and a course content section which gives the links for the material available for the course. For faculty members there will be an extra link for uploading the course content in a zip file format. The course content should be html pages, which should be uploaded in the zip file format. There should be a mechanism for the faculty members to create a test for the course specifying the test title and a set of multiple-choice questions and duration of time of the test.

TABLE OF CONTENTS

TABLE OF CONTENTS

CHAPTERS	PAGE NO
ACKNOWLEDGEMENT	iii
ABSTRACT	iv
LIST OF TABLES	vii
LIST OF FIGURES	vii
LIST OF ABBREVATIONS	vii
1. INTRODUCTION	1
1.1 ORGANIZATION PROFILE	1
1.2 PROJECT OVERVIEW	2
2. SYSTEM STUDY AND ANALYSIS	3
2.1 EXISTING SYSTEM	3
2.1.1 Drawbacks of the Existing System	3
2.2 PROPOSED SYSTEM	4
2.2.1 Advantages of the Proposed System	4
2.3 FEASIBILITY ANALYSIS	4
2.3.1. Feasibility Consideration	4
2.3.1.1 Technical Feasibility	5
2.3.1.2 Operational Feasibility	5
2.3.1.3 Economic Feasibility	5
2.4 USERS OF THE SYSTEM	6
3. DEVELOPMENT ENVIRONMENT	8
3.1 HARDWARE REQUIREMENTS	8
3.2 SOFTWARE REQUIREMENTS	8
	8

3.3 PROGRAMMING ENVIRONMENT 8
3.3.1 ASP.NET
3.3.2 SQL Sever 2000 10
4. SYSTEM DESIGN AND DEVELOPMENT 12
4.1. ELEMENTS OF DESIGN 12
4.1.1 Modular design 12
4.1.1.1. Master Table Creation & Administrator Module 13
4.1.1.2. Application Module – Student & Faculty 14
4.1.1.3. Faculty Approval Module 14
4.1.1.4. Upload and Download Module for Course 14
4.1.1.5Online Course Performance Testing & Assessment 15
4.1.2 Input Design 15
4.1.3 Output Design 16
4.1.4 Database Design 17
4.2 TABLE STRUCTURE 18
5. IMPLEMENTATION 27
5.1 SYSTEM VERIFICATION 27
5.2 SYSTEM VALIDATION 27
5.3 TESTING 28
5.3.1 Unit Testing 29
5.3.2 Integration Testing 29
5.3.3 System Testing 30
5.3.3.1 Security Testing 30
5.3.3.2 Stress Testing 30
6 CONCLUSION AND FUTURE ENHANCEMENT 30
APPENDICES 32
REFERENCES 43

List of Tables

S.No	Name of Table	Page No.
1	Login Master	14
2	Branch Master	15
3	Course Master	15
4	Course Content Master	15
5	Student Master	16
6	Faculty Master	16
7	Online Test	17

List of Figures

S. No	Name of Figure	Page No.
1	ER Diagram	18
2	Use case Diagram	19
3	Data Flow Diagram	22

List of Abbreviations

Acronyms	Full Form
ASP	Active Server Pages
HTML	Hyper Text Markup Language
JIT	Just In Time

INTRODUCTION

CHAPTER 1

INTRODUCTION

This chapter is organized into two parts. The first part deals with the organization profile. It provides a brief insight into the history of the organization and the products. The second part gives an introduction about the project.

1.1 ORGANIZATION PROFILE

Cognizant is a leading provider of information technology, consulting, infrastructure and business process outsourcing services. Confidant's single-minded mission is to dedicate our business process and technology innovation know-how, our deep industry expertise and worldwide resources to working together with clients to make their businesses stronger. Value Proposition As a customer-centric, relationship-driven partner, we are redefining the way companies experience and benefit from global services via a unique delivery model infused by a distinct culture of high customer satisfaction. Cognizant delivers a trusted partnership, cost reductions and business results. Cultural Value Drivers Open, Transparent, Driven, Empowered, Opportunity filled, Flexible, Collaborative. Differentiation Factors 15 years of experience fusing the Two-in-a-Box TM Client Relationship Model with a seamless Global Delivery experience Multifaceted client partnership architecture yielding high customer value and continuous alignment with client teams Commitment to measuring full value of outsourcing with "Confidant's Return on Outsourcing TM" proprietary methodology (ROO)1 based on proven record of delivering results Financial success and sound management record resulting in continuous innovation, new services and higher value creation Key Attributes "Client-first" culture of customer satisfaction, resulting in unique "Cognizant customer experience" Distinct identity: Born-global corporation, multicultural work-force and management, entrepreneurial leadership & culture Dedicated to building deep, sustainable and long-term client relationships based on collaboration, customization and quality.

1.2 SYSTEM OVERVIEW

The project "**Online Course Portal for a Campus/Organization**" serves as an educational forum for the students over the internet. The project maintains the details of the students, staffs and monitors their daily activities too. The project brings about a virtual classroom experience with students being provided with course materials and staffs assessing them with periodic tests. The administrator provides certificates of recognition based on the performance of the students. The project also aims to provide up to date information regarding course materials and their practical usage.

The course home page should contain the title of the course and a brief description. There will be a discussion board for each course where students can interact, an announcement section, which contains the latest announcements, and a course content section which gives the links for the material available for the course. For faculty members there will be an extra link for uploading the course content in a zip file format. The course content should be html pages, which should be uploaded in the zip file format. There should be a mechanism for the faculty members to create a test for the course specifying the test title and a set of multiple-choice questions and duration of time of the test.

Some of the functionalities of the project include

- Certification to deserving candidates based on their performance in the test.
- Online tests and assessment mechanism.
- Access to latest data relative to the course subjects.

SYSTEM STUDY AND ANALYSIS

CHAPTER 2

SYSTEM STUDY AND ANALYSIS

A complete understanding of the requirement is essential for the success of software development. The software scope, initially established by the system engineer and refined during the project planning, is refined in detail. Model of the required data, information and control flow, and operational behavior are created. Alternative solution are analyzed and allocated to various software elements. The feasibility study evaluates the viability of the project and presents the recommended strategy adopted for the development

2.1 EXISTING SYSTEM

The existing system is a manual system requiring students and faculties to be present for the classes. The classes are constrained to a closed group of students. It requires extra effort from the students and faculties side.

2.1.1 Drawbacks of the Existing System

- It is a time and effort intensive work.
- Use of traditional dataflow.
- Assessment is a time consuming and inefficient process.
- Up gradation of latest information is in an inept state.

2.2 PROPOSED SYSTEM

This project aims at creating an Online Courses portal for a campus/organization. This allows registered users of the system to join a course available in the site and access the materials published for the course. The users can register themselves as Students or Faculties.

2.2.1 Advantages of the Proposed System

The expected benefits of the Proposed System are as follows:

- The Online Course Portal reaches out to a global market wherein students and faculties of different institutes can work together.
- The project provides certificate recognized by a government body.
- Time and Space are considerably reduced with automatic result generation during online tests.
- Access to latest information.

2.3 FEASIBILITY ANALYSIS

Feasibility analysis is the measure of how beneficial or practical the development of the System will be to the project. Once the problem is explained information is gathered about the system to test whether the system is viable Technically, Financially and Operationally. Thus, feasibility study is carried out in three phases as follows:

2.3.1. Feasibility Consideration

The Key considerations involved in the feasibility analysis are

- Technical
- Operational
- Economic

2.3.1.1 Technical Feasibility

Technical Feasibility is the measure of practicality of a specific technical solution and the availability of technical resources and expertise. It centers on the existing computer system (hardware, software, etc.) and to what extent it can support the new addition. The level of technology is determined by factors such as the software tools available, the machine environment ,platform etc.Since the resources required for the development of the project are already available in the organization, the project is technically feasible.

The proposed system is to be developed using ASP.Net and SQL SERVER 2000 which are some of the leading technologies in the market. These technological resources are easily available and the company/project does not need to acquire any development licenses. Visual studio .NET 2005 and SQL SERVER 2000 are already available with the company. These technologies work well on Microsoft platforms.

.2.3.1.2 Operational Feasibility

Operational Feasibility asks if the system will work when it is developed and installed. It checks for the support of the management, the current business methods, user's involvement and their attitude towards the proposed system, etc.

The proposed system has found encouraging support from the management as it will be of great use to them.

2.3.1.3 Economic Feasibility

Economic Feasibility is the measure of the cost-effectiveness of the proposed system. The investment to be made in the proposed system must prove a good investment to the project by returning benefits equal to or exceeding the costs incurred in developing the system.

The proposed benefits of the system will outweigh the costs to be incurred during system developed since the system does not require procurement of additional hardware facilities it is economically feasible. In addition capability of the system to incorporate future enhancement will improve the performance to suit the future need of the company/project.

2.4 USERS OF THE SYSTEM

The users of the proposed Business Resource & Workflow Management System have been categorized as below and each of the user categories will have a set of rights which manage their use of the proposed system.

Administrator	
Description of requirement	Smooth operation of all functions
Priority	Very High
Further detail	The Administrator is responsible for the overall functionalities of the product and so it requires a system with ease in carrying out the operations and high monitoring capabilities.

Faculty	
Description of requirement	Assessing the depth of understanding of Students
Priority	High
Further detail	The online course is provided for Students to expand their knowledge and there has to a system to test the Students involvement. The Faculty looks to assess the student based on tests and queries.

Student	
Description of requirement	Expansion of knowledge, Download of course materials, Certificates.
Priority	High for all requirements
Further detail	▪ The Student primarily opts for online course to pursue a course that is inept with their degree and also an expansion of their knowledge. ▪ Students expect the course material to be of the latest trend something to help them update their information and awareness. ▪ Certificates prove a boon for the Students career and so a recognized institution providing the certificate is anticipated.

DEVELOPMENT ENVIRONMENT

CHAPTER 3

DEVELOPMENT ENVIRONMENT

3.1 HARDWARE REQUIREMENTS

The hardware support required for deploying the application

Processor:	Pentium IV
RAM:	256 MB
HARDDISK:	Seagate 80 GB
KEYBOARD:	Logitech 104 Keys

3.2 SOFTWARE REQUIREMENTS

The software support required for deployment is:

Operating System:	Windows XP
Database:	SQL Server 2000
Software for development:	Visual Studio 2005

3.3 PROGRAMMING ENVIRONMENT

3.3.1 ASP.NET

ASP.NET is the .NET framework layer that handles Web requests for specific types of files, namely those with (.aspx or .ascx) extensions.The ASP.NET engine provides a robust object model for creating dynamic content and is loosely integrated into the .NET framework.

ASP.NET is part of the .NET framework.ASP.NET programs are centralized applications hosted on one or more Web servers that respond dynamically to client requests. The responses are dynamic because ASP.NET intercepts requests for pages with a specific extension (.aspx or .ascx) and hands off the responsibility for answering those requests to just-in-time (JIT) compiled code files that can build a response "on-the-fly."

ASP.NET deals specifically with configuration (web.config and machine.config) files, Web Services (ASMX) files, and Web Forms (ASPX) files. The server doesn't "serve" any of these file types—it returns the appropriate content type to the client.

The configuration file types contain initialization and settings for a specific application or portion of an application. Another configuration file, called machine-web, contains machine-level initialization and settings. The server ignores requests for web files, because serving them might constitute a security breach.

Client requests for these file types cause the server to load, parse, and execute code to return a dynamic response. For Web Forms, the response usually consists of HTML or WML. Web Forms maintain state by round-tripping user interface and other persistent values between the client and the server automatically for each request.

A request for a Web Form can use View State, Session State, or Application State to maintain values between requests. Both Web Forms and Web Services requests can take advantage of ASP. Net's integrated security and data access through ADO.NET, and can run code that uses system services to construct the response.

ASP.NET uses .NET languages.ASP.NET code exists in multithreaded JIT compiled DLL assemblies, which can be loaded on demand. Once loaded, the ASP.NET DLLs can service multiple requests from a single in-memory copy.

ASP.NET supports all the .NET languages (currently C#, C++, VB.NET, and JScript, but there are well over 20 different languages in development for .NET), so you will eventually be able to write Web applications in your choice of almost any modern programming language.

MAIN FEATURES OF ASP.NET

- ✓ Object-oriented
- ✓ Event-based
- ✓ Rich library of Web Controls
- ✓ Separation of layout (HTML) and logic (e.g. C#)
- ✓ Compiled languages instead of interpreted languages
- ✓ GUI can be composed interactively with Visual Studio .NET
- ✓ Better state management

3.3.2 SQL Sever 2000

DATABASE

A database management, or **DBMS**, gives the user access to their data and helps them transform the data into information. Such database management systems include **SQL Server 2000,** dbase, paradox, IMS, and oracle. These systems allow users to create, update and extract information from their database.

A database is a structured collection of data. Data refers to the characteristics of people, things and events. SQL stores each data item in its own fields. In SQL the fields relating to a particular person, thing or event are bundled together to form a single complete unit of data, called a record. Each record is made up of a number of fields. No two fields or change the definition of existing fields.

SQL TABLES

SQL Stores records relating to each other in a table. Different tables are created for the various groups of information. Related tables are grouped together to form a database.

PRIMARY KEY

Every table in SQL has a field or a combination of fields that uniquely identifies each record in the table. The Unique identifier is called the Primary key, or simple the key. The primary keys providers the means to distinguish one record from all other in table. It allows the user and the database system to identify, locate and refer to one particular record in the database.

RELATIONAL DATABASE

Sometimes all the information of interest to a business operation can be stored in one table. SQL makes it very easy to link the data in multiple tables. Matching an employee to the department in which they work is one example. It stores data in two or more tables and enables you define relationships between the tables and enables you to define relationships between the tables.

FOREIGN KEY

When a field is one table matches the primary key of another field is referred to as a foreign key. A foreign key is a field or a group of fields in one table whose values match those of the primary key of another table.

SYSTEM DESIGN AND DEVELOPMENT

CHAPTER 4

SYSTEM DESIGN AND DEVELOPMENT

4.1 ELEMENTS OF DESIGN

System Design is the most creative and challenging phase in the development of a software system. Design implies to a description of the final system and the process by which it is developed. The first step is to determine what input data is needed for the system and then to design a database that will meet the requirements of the proposed system. The next step is to determine what outputs are needed from the system and the format of the output to be produced.

During the design of the proposed system some areas where attention is required are:

- What are the inputs required and the outputs produced?
- How should the data be organized?
- What will be the processes involved in the system?
- How should the screen look?

The steps carried out in the design phase are as follows:

- Modular Design
- Input Design
- Output Design
- Database Design

4.1.1 Modular design

It is always difficult for any System Development team to grasp a system without breaking it into several subsystems/modules. These subsystems/modules will be a part of the original system yet they will be independent in the sense that they will incorporate within them the major functionalities of the proposed system.

A software system is always divided into several subsystems/modules which make it easier to develop and perform tests on the whole system. The subsystems are also known as the modules and the process of dividing an entire system into subsystems/modules is known as Decomposition.

The modules included in this project are

1. Administrator Module.
2. Application Module – Student & Faculty.
3. Faculty Approval Module.
4. Upload and Download Module for Course.
5. Online Course Performance Testing & Assessment Module.

4.1.1.1. Master Table Creation & Administrator Module:

In this module, the various different master tables to be created namely –

a. Student Master
b. Faculty Master
c. Course Master.
d. Course Content Master
e. Questions & Answers Master etc are created.

The various attributes and specific characteristics of each master are created to accommodate the minute details pertaining to each entity. The various functionalities like Addition, Deletion, Edit and Update Functionalities are implemented to manage the master table's records. The various Courses and Course Content are added in order facilitate the subsequent Modules.

4.1.1.2. Application Module – Student & Faculty:

In this module, I create the GUI for Students and Faculties to apply for the Course and for the Performance Testing Function. The Form and corresponding database design is created in such a way that the students can apply for the appropriate functionalities by using this Application module. The Faculty can choose to opt for any Course. With the choice of Course work not taken up the any other faculty, the faculty can apply for a definite course of his/her choice subjected to the approval of the Administrator.

4.1.1.3.Faculty Approval Module :

The Faculty who has applied for course has to be approved by the concerned Administrative Personnel. This course selection process has to be authenticated by the administrator who will happen to be H.O.D or Principal or one who has the administrator login access to this authentication procedure. The criteria for the approval will be decided by the board. Once the approval is done that particular course is not available to be taken any other faculties.

4.1.1.4.Upload and Download Module for Course :

The upload and download functionalities which facilitate faculties to upload the Course Contents required for a course and the subsequent process of downloading those content by the corresponding student are implemented in this module. We use specialized functionalities like File Upload Controls to implement file transfer between the Client and Server. The corresponding Login for Students and Faculties are implemented and the database of the documents available for download is maintained.

4.1.1.5 Online Course Performance Testing & Assessment Module:

The course that has been taken up by the student is tested for learning and retention of the concepts by implementing Testing and Assessment module. In this module the objective type question is given for performance evaluation by creating appropriate GUI to enable using mouse to navigate from one question to another. The evaluation methods gives scoring to the examinee depends on the number of answers that are correct and also based on the difficulty of the questions.

4.1.2 Input Design

Input design is a part of the system design and hence must be carefully designed which otherwise lead to serious errors in the later stages of development. Inaccurate will input data is the most common cause of errors in data processing. The main objective of designing input focus on

- Controlling the amount of input required.
- Avoiding delayed responses
- Controlling errors
- Keeping errors
- Keeping process simple
- Avoiding errors

The required input is stored in the form of the tales. They may be numeric or alphanumeric values. The input screens should be user friendly, so that everyone can access the options on it without having knowledge regarding the complete system.

Input Design Considerations

The nature of the input processing

- Flexibility and thoroughness of validation rules.
- Handling of priorities within the input procedures.
- Use of composite input procedure.
- Use of composite input document to reduce the number odd ones
- Scheduling of input runs in case of large rejection rates at validation.

4.1.3 Output Design

Output generally refers to the results and information that are generated by the system. For many end-users, output is the main reason for developing the system and the basis on which they will evaluate the usefulness of the application. Most end-users will not actually operate the information system or enter data through workstations, but they will use the output from the system. When designing output, systems analysts must accomplish the following.

- Determine what information to present.
- Decide whether to display, print, or "speak" the information and select the output medium.
- Arrange the presentation of information in an acceptable format.
- Decide how to distribute the output to intended recipients.

That arrangement of information on a display or printed document is termed as layout. Accomplish the general activities listed above will require specific decisions, such as whether to use preprinted forms when preparing reports and documents, how many lines to plan on a printed page, or whether to use graphics and color.

The output design is specified on layout performs, sheets that describe the location characteristic, and format of the column headings and pagination. As we indicated at the beginning of this discussion, these elements are analogues to an architect's blue print that shows the location of the each component.

The output must be provided in a format easily understandable even by a novice user. After analyzing the operations of the system, output information required for each jobs are determined .In addition to this, these outputs may be in format suitable as inputs for subsequent processing.

4.1.4 Database Design

A database is a collection of inter-related data stored with minimum redundancy to serve many users quickly and efficiently. The general objective of database design is to make the data access easy, inexpensive and flexible to the user. An elegantly designed database can play a strong foundation for the whole system.

The details about the relevant data for the system are first identified. According to their relationship, tables are designed through the following method.

- The data type for each data item in the table is decided.
- The tables are then normalized.

The tables are normalized so that they can provide better response time, have data integrity, avoid redundancy and be secure.

4.2 TABLE STRUCTURE

Table 1: Login Master

This table holds the entire users name, corresponding password and their role which defines their rights.

Field	Type	Description
User_Name	var char(50)	Not Null
User_Password	var char(20)	Not Null
User_Role	var char(20)	Not Null

Primary Key: User_Name

Table 2: Branch Master

This table holds the branches availed by the university.

Field	Type	Description
Br_Id	int	Not Null
Br_Name	var char(20)	Not Null

Primary Key: Br_Name

Table 3: Course Master

This table holds the various courses available in the project. It also holds a reference to the Branch Master so that a user is able to choose a course relative to their degree course.

Field	Type	Description
C_Id	int	Not Null
Br_Id	int	Not Null-Reference to Branch Master
C_Name	var char(20)	Not Null

Primary Key: C_Name

Table 4: Course Content Master

This table holds the content and relative link details to the content. It also holds a reference to the Course Master so that a user is provided content relative to the course.

Field	Type	Description
Cont_Id	int	Not Null
C_Id	int	Not Null-Reference to Course Master
Cont_Name	var char(200)	Not Null

Primary Key: Cont_Id

Table 5: Student Master

This table holds the details of the Students registering to engage in the course.

Field	Type	Description
Roll_no	int	Not Null
Name	var char(50)	Not Null
Gender	var char(1)	Not Null
Branch	int	Not Null-Reference to Branch Master (Br_Id)
Course	int	Not Null-Reference to Course Master (C_Id)
Door_no	var char(5)	Not Null
Streeet	var char(20)	Not Null
City	var char(50)	Not Null
Pincode	int	Not Null
Phone_no	int	
Mob_no	int	
Mail_Id	var char(50)	Not Null
Score	int	

Primary Key: Roll_no

Table 6: Faculty Master

This table holds the details of the Faculties registering.

Field	Type	Description
Staff_Id	int	Not Null
Staff_Name	var char(50)	Not Null
Gender	var char(1)	Not Null
Designation	var char(50)	Not Null
Qualification	var char(20)	Not Null
Experience	var char(20)	Not Null
Reference	var char(50)	Not Null
Phone_no	int	
Mob_no	int	
Mail_Id	var char(50)	Not Null

Primary Key: Staff_Id

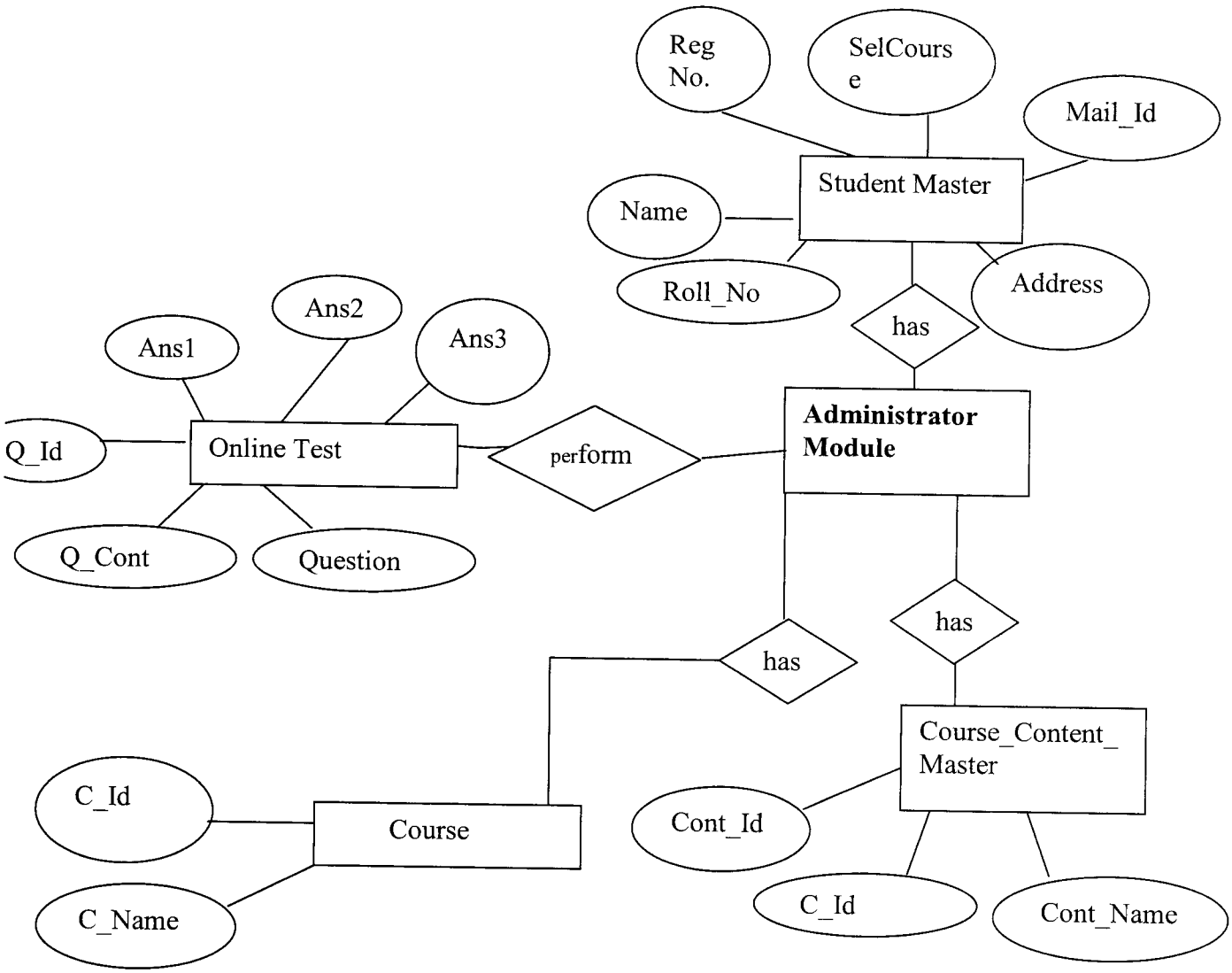
Table 7: Online_Test

This table holds the questions, their options and the corresponding result answer.

Field	Type	Description
Q_Id	int	Not Null
Q_cont	var char(500)	Not Null
Ans1	var char(200)	Not Null
Ans2	var char(200)	Not Null
Ans3	var char(200)	Not Null
Ans4	var char(200)	Not Null
Res_Ans	var char(200)	Not Null

Primary Key: Q_cont

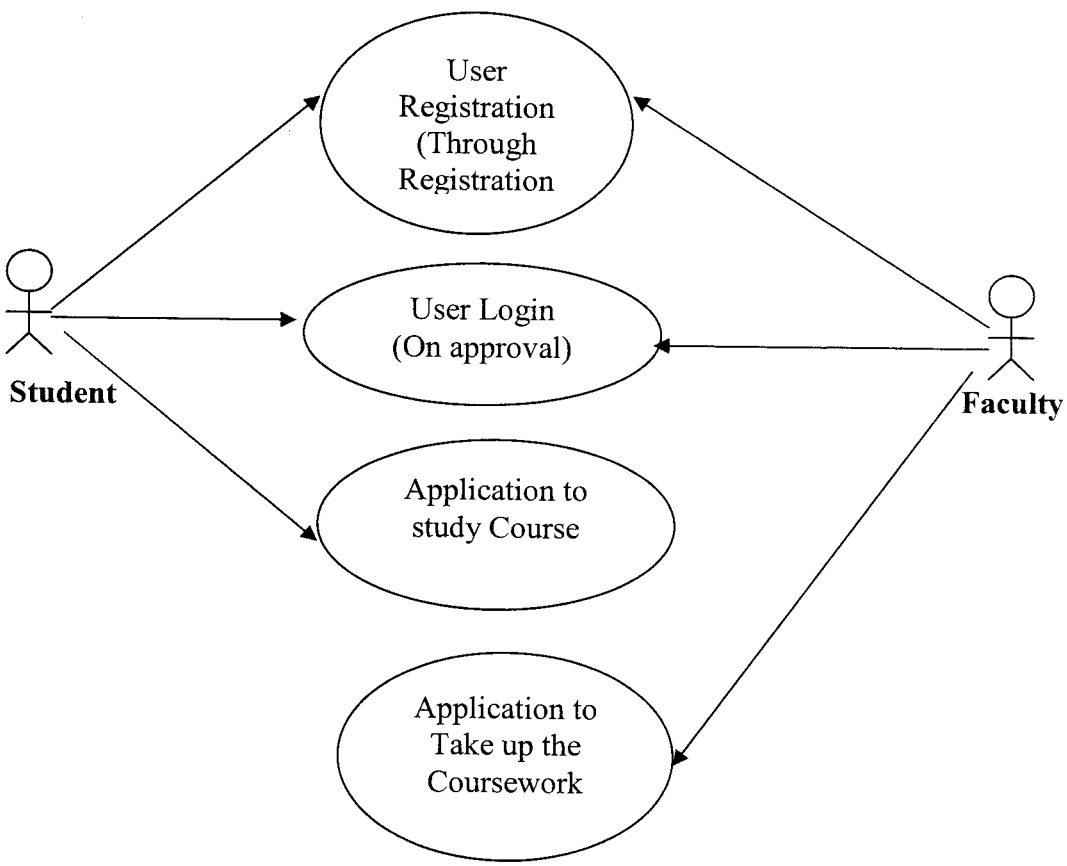
4.3 Database ER Diagram



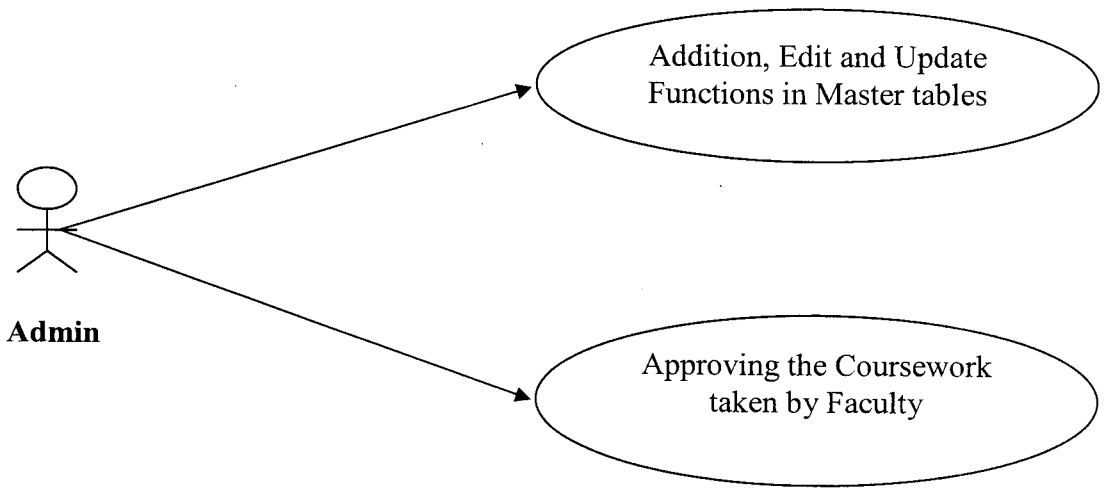
4.4 USE CASE DIAGRAMS

Use case diagrams give a picture of the different scenarios wherein users interact with the different components of the system. It gives a general idea on the requirements to be addressed by the system and the sequence of operations happening.

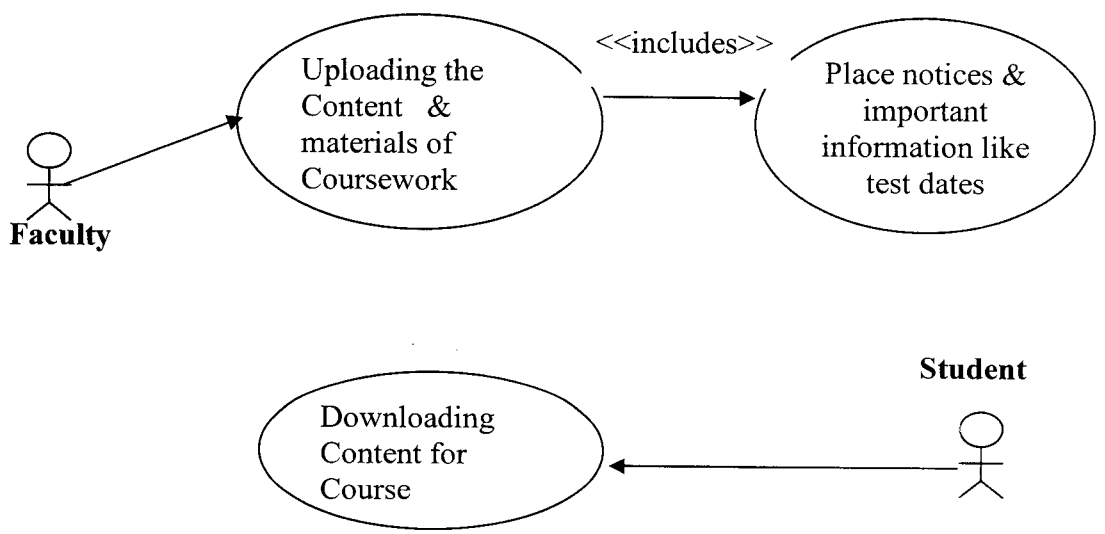
Use Case 1. Application Module:



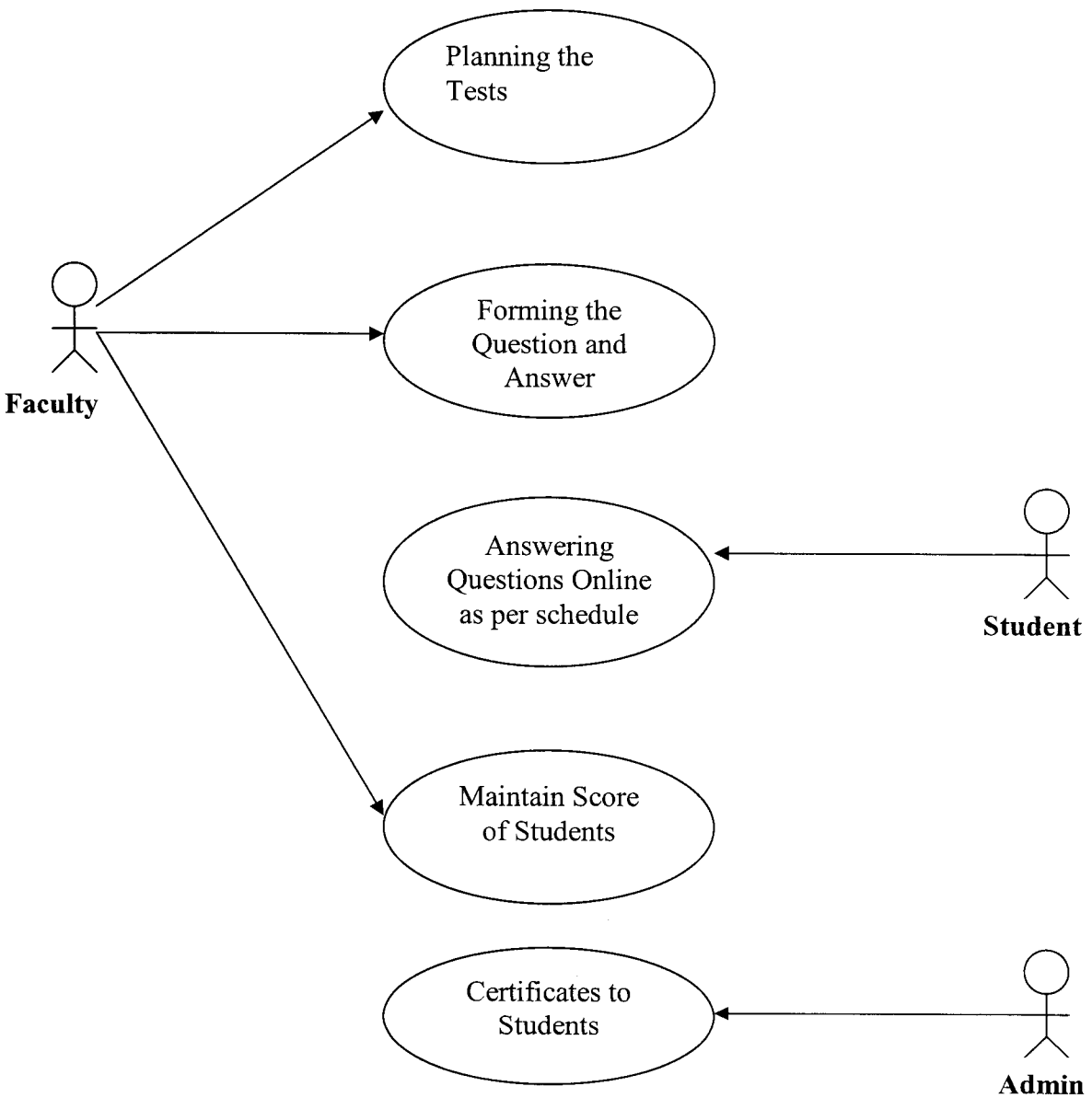
Use Case 2. Administrator Module:



Use Case 3. Upload and Download Module for Course:

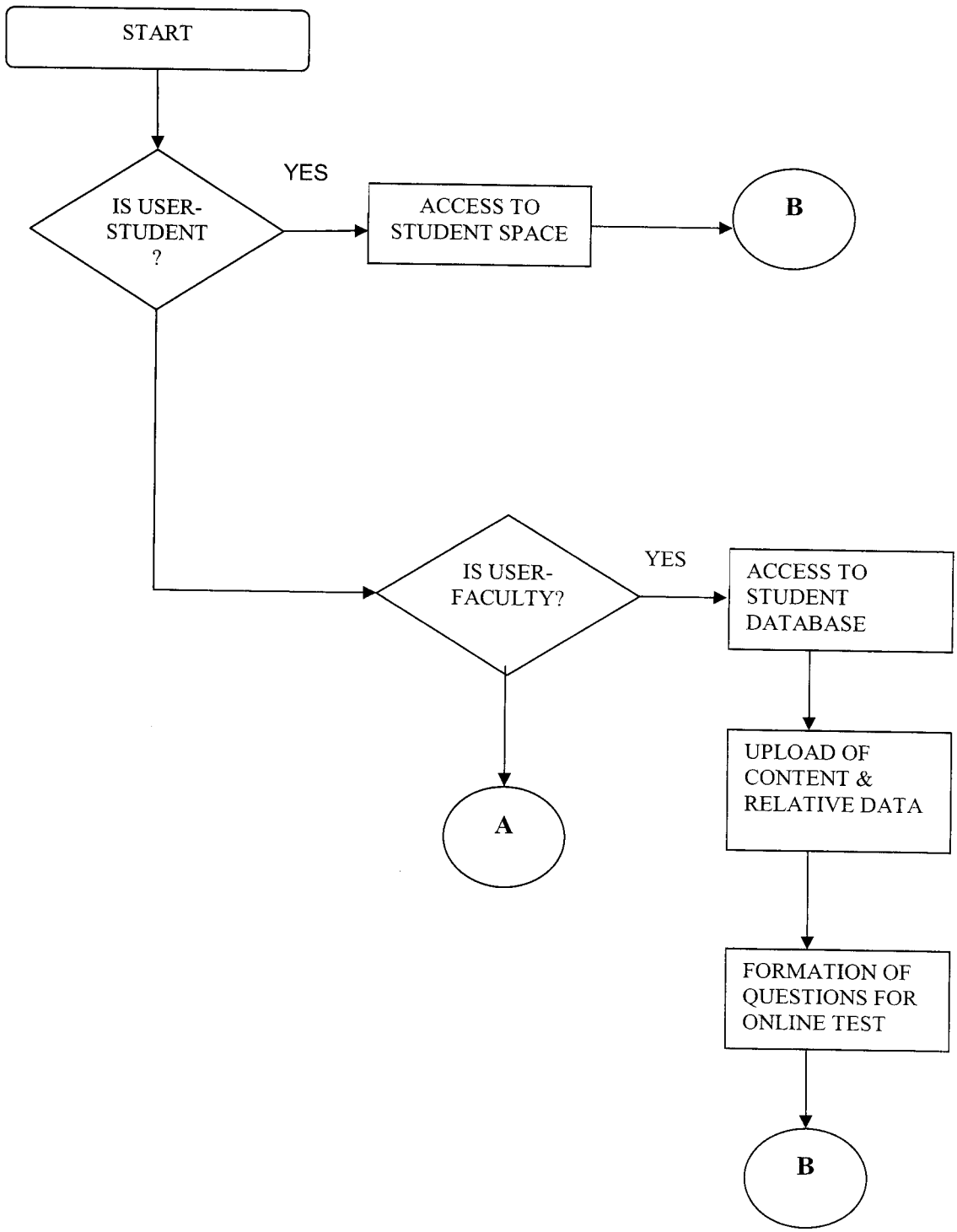


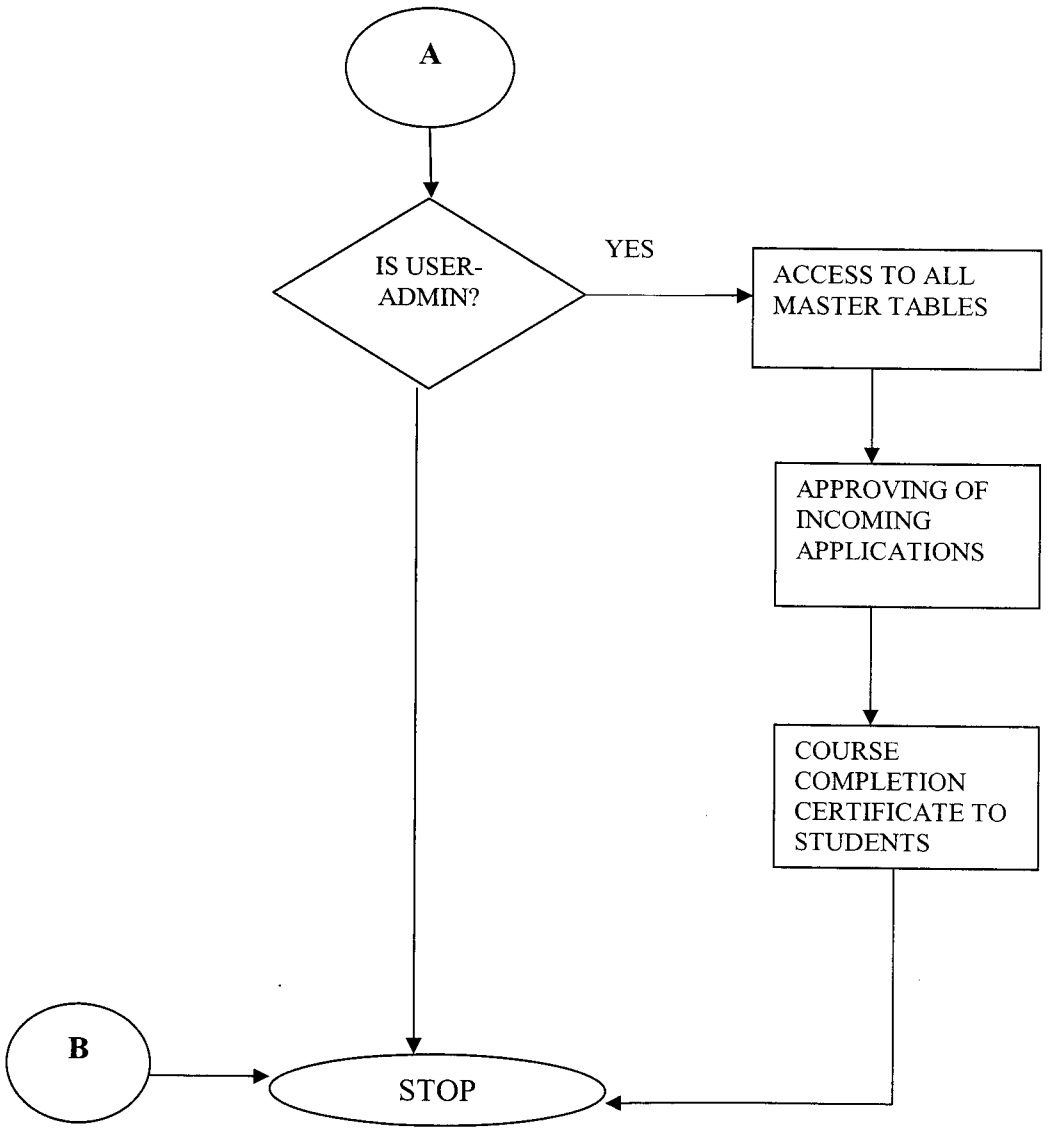
Use Case 4. Online Tests & Assessment Module.



4.5 Data Flow Diagram

The following data flow diagram gives a core of activities and the flow of information in the system.




A
IS USER-ADMIN?
YES
ACCESS TO ALL MASTER TABLES
APPROVING OF INCOMING APPLICATIONS
COURSE COMPLETION CERTIFICATE TO STUDENTS
B
STOP

IMPLEMENTATION

CHAPTER 5

IMPLEMENTATION

System Implementation is the part of the software engineering life cycle, where, the design artifacts are converted to a working application. Coding is done in this stage using an apt framework and programming language, which would solve the specific problem the best way. Once the design is coded into a working application, it has to be verified, validated and tested in detail. The tested product if successful is deployed in the user environment.

5.1 SYSTEM VERIFICATION

System Verification answers the question "Am I building the product right?" It includes the review of interim work steps and interim deliverables during a project to ensure they are acceptable. Verification also determines if the system is consistent, adheres to standards, uses reliable techniques and prudent practices, and performs the selected functions in the correct manner. In data access, it verifies whether the right data is being accessed, in terms of the right place and in the right way.

5.2 SYSTEM VALIDATION

Validation answers the question "Am I building the right product?" This checks whether the developer is moving towards the right product, whether the development is moving towards the actual intended product that was agreed upon in the beginning. Validation also determines if the system complies with the requirements and performs functions for which it is intended and meets the organization's goals and user needs. It is traditional and is performed at the end of the project. In data access, it checks whether we are accessing the right data, in terms of data required to satisfy the requirement.

5.3 TESTING

Testing is a critical element of software quality and assurance and represents the ultimate review of specification design and coding. It is a vital activity that has to be enforced in the development of any system. This could be done in parallel during all the phases of system development. The feedback received from these tests can be used for further enhancement of the system under consideration. The testing phase conducts test using the Software Requirement Specification as a reference and with the goal to see whether the system satisfies the specified requirements.

Testing Objectives

The main objective of testing is to uncover a host of errors, systematically and with minimum effort and time. Stating formally, we can say,

- Testing is a process of executing a program with the intent of finding an error.
- A successful test is one that uncovers an as yet undiscovered error.
- A good test case is one that has a high probability of finding error, if it exists.
- The tests are inadequate to detect possibly present errors.
- The software more or less confirms to the quality and reliable standards.

The main types of tests carried out on External True System are:

- Unit Test
- Integration Test
- System Test

5.3.1 Unit Testing

Module or Unit Testing is the process of testing all the program units that make up a system. Unit testing focuses on an individual module thus allowing one to uncover all the errors made logically and while coding in the module.

In External True System each page is tested separately as a unit. Initially the flow of control and data through that page is checked. When considering a module as a unit, the flow of data and control through the whole module is tested. The result is stored in the test plan. In a page, each control is further tested in unit testing. The process is done in all the pages of the system. Once the errors are rectified, the testing procedure is repeated with same test cases to ensure this hasn't produced new errors. Hence this is a continuous process.

5.3.2 Integration Testing

Integration testing tests the process of integrating the various modules to form the completed system. Integration starts with a set of units each individually tested in isolation and ends when the entire application has been built. Integration testing verifies that the combined units function together correctly. It facilitates in finding problem that occur at interface or communication between the individual parts.

External System followed top-down integration testing. Modules were linked to the main menu in a sequence as required in the real time operating mode of the system. Menu items were created as and when required for the integration. This process is continued from the page level to module level, finally to the system level. In the final stage, the whole system is taken together and tested for integration. A change in one place should be reflected through out the system. Regression testing is done after each change made into the software. This tests if the change has affected any part of External True System negatively after the change was made. The whole set of test cases need to be run again to do the regression testing.

Also in External True System the integration testing is carried out by simultaneously logging on to the testers portal to verify whether all the changes related to tester's information are properly reflected and the status change of test units and testers are done perfectly.

5.3.3 System Testing

System testing is actually a serious of different tests, whose primary purpose is to fully exercise the computer-based system. This helps in verifying that all the system elements have been properly integrated and perform the allocated functions. It verifies the entire product after having integrated all software and hardware components, and validates it according to the original project requirement. The system testing takes into consideration the hardware, and the software.

5.3.3.1 Security Testing

Security testing is important in system testing. The system in no way shall be accessible to unauthorized users. Testing is done to ensure that a user with respective rights can only view the various modules and reports presented by External True System. If users try to perform something beyond his assigned rights corresponding messages should be displayed. The External True System in such cases displays a error message.

Security testing thus,attempts to verify that protection mechanism built into a system will,in fact, protect it from improper penetration.

5.3.3.2 Stress Testing

Stress Testing executes a system in a manner that demands resources in abnormal quantity, frequency or volume. External True System was stress tested by all employees in the project and accessing simultaneously to various modules in the system.

CONCLUSION AND FUTURE ENHANCEMENT

CHAPTER 6

CONCLUSION AND FUTURE ENHANCEMENT

6.1 CONCLUSION

The project '**Development Of An Online Course Portal for a Campus or Organization**' has been designed and developed using ASP.NET and SQL SERVER 2000.It is user friendly and deals with the problem of space and time for Students and Faculties.

The current system overcomes most of the drawbacks of existing system through the use of internet/intranet which is available anytime anywhere. Moreover, it can be easily modified or upgraded to suit the changes in requirement or technology, arising at any point of time in the future.

The current system is very efficient because it has been repeatedly tested with the help of a variety of test cases and can therefore be implemented successfully. Since the system has been developed using standard programming codes, rules and conventions, it is easily understandable and can be reused under any similar circumstances in the future.

6.2 FUTURE ENHANCEMENT

Enhancement is always an important and necessary activity in the life of the portal developed. Any system development should always provide room to accept any changes and further inclusions.

The future enhancements that the project can be subjected to are:

- Video Conferencing among the students and the faculties.
- Mobile Access to the application.

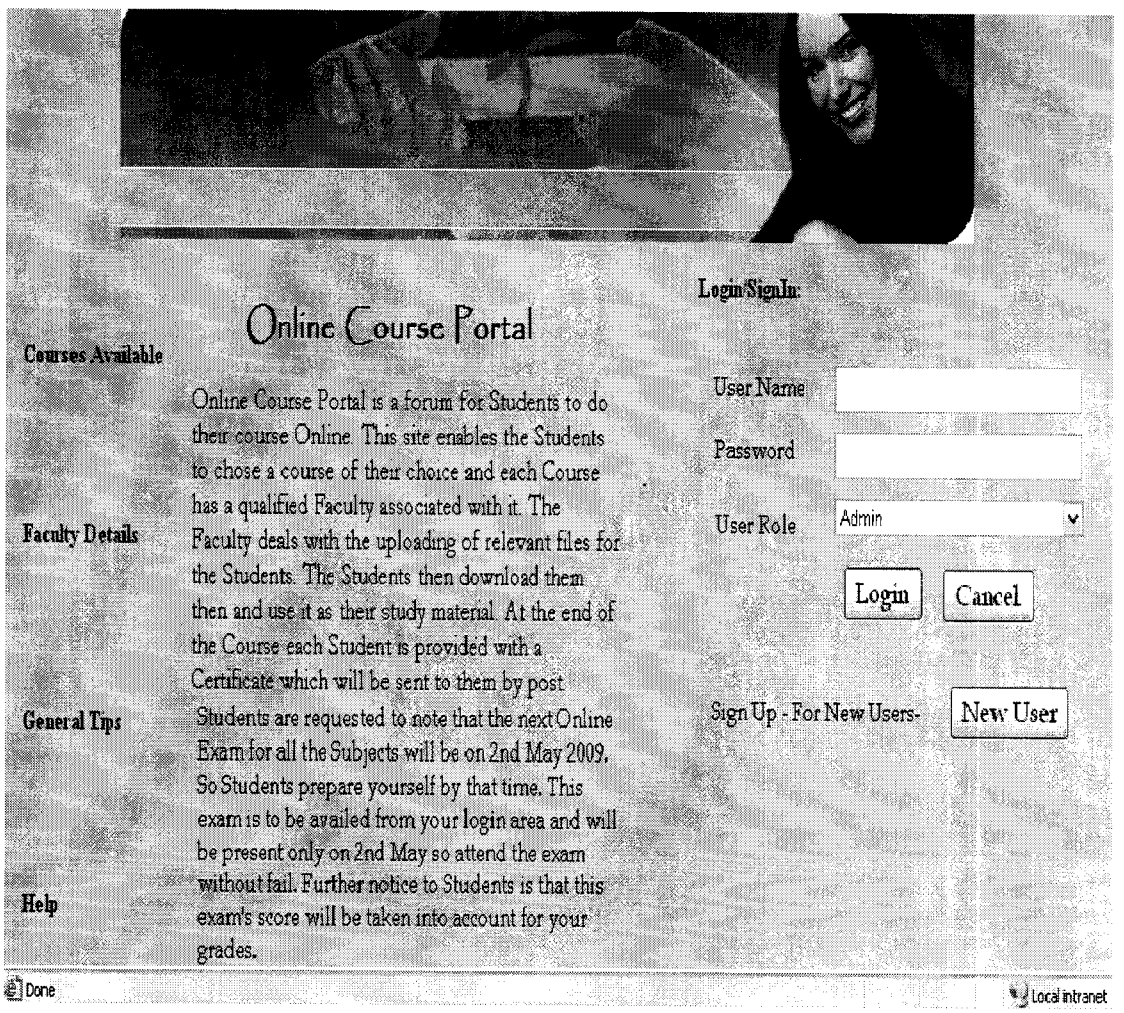
APPENDICES

CHAPTER 7

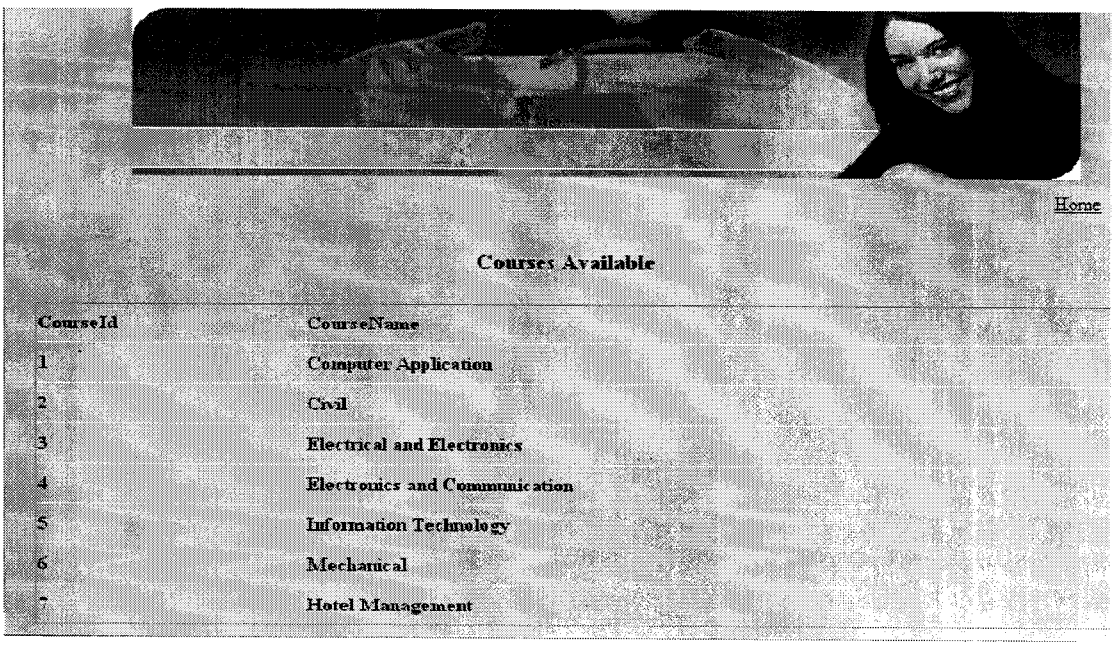
APPENDICES

SCREEN SHOTS

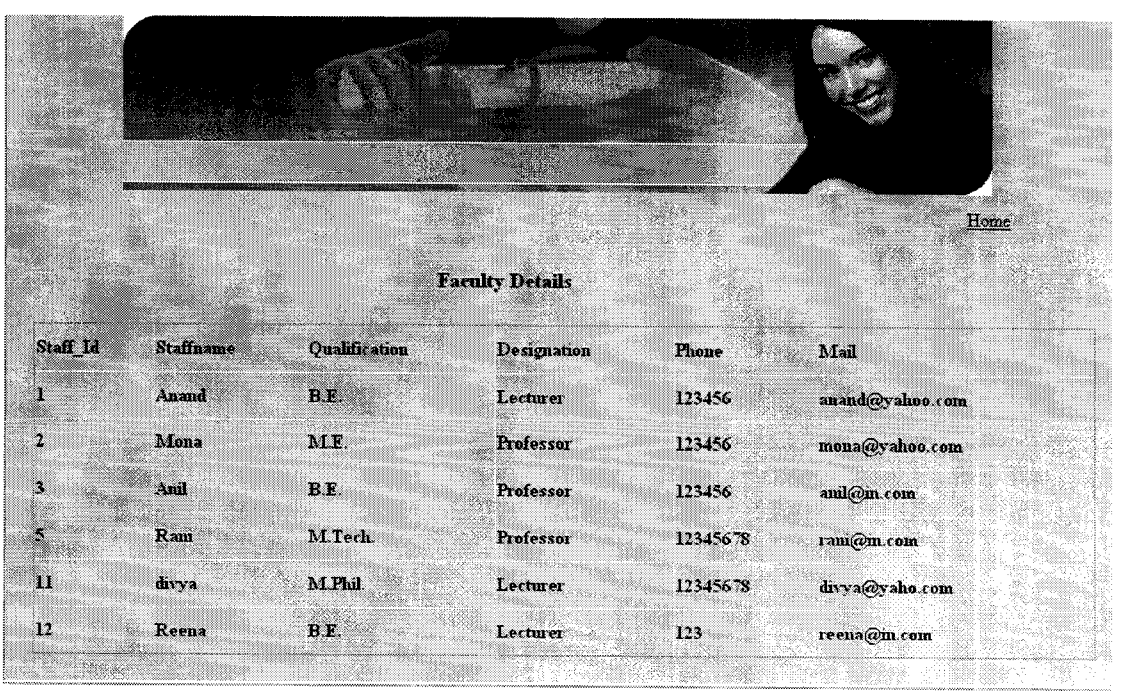
Home Page



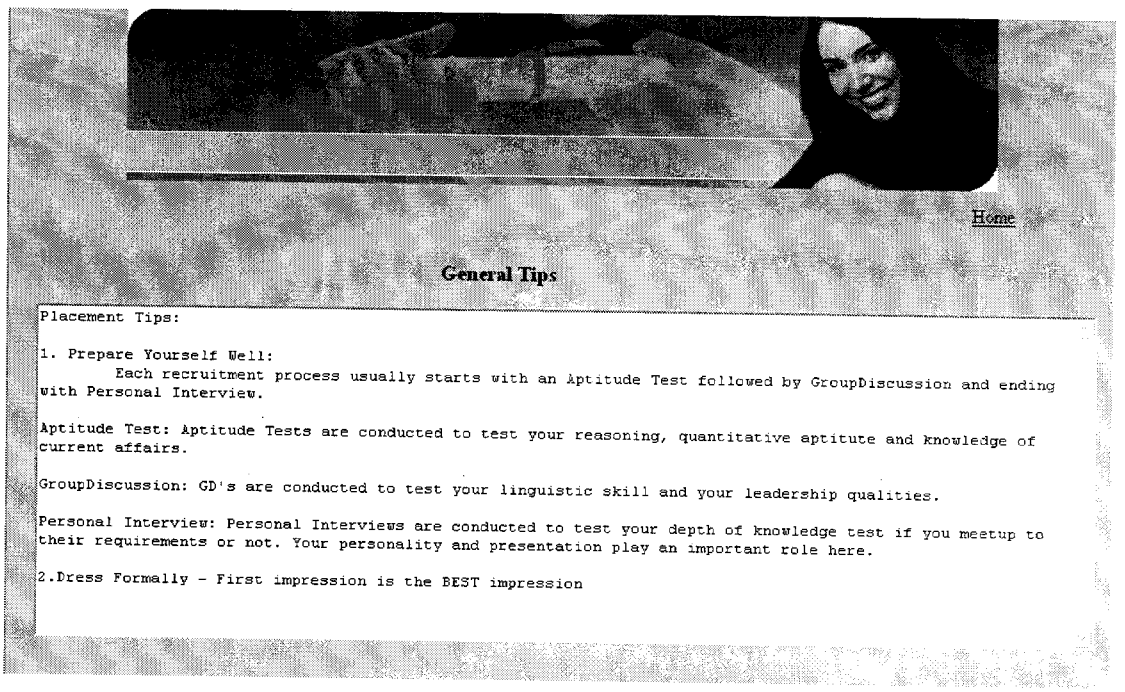
Courses Available



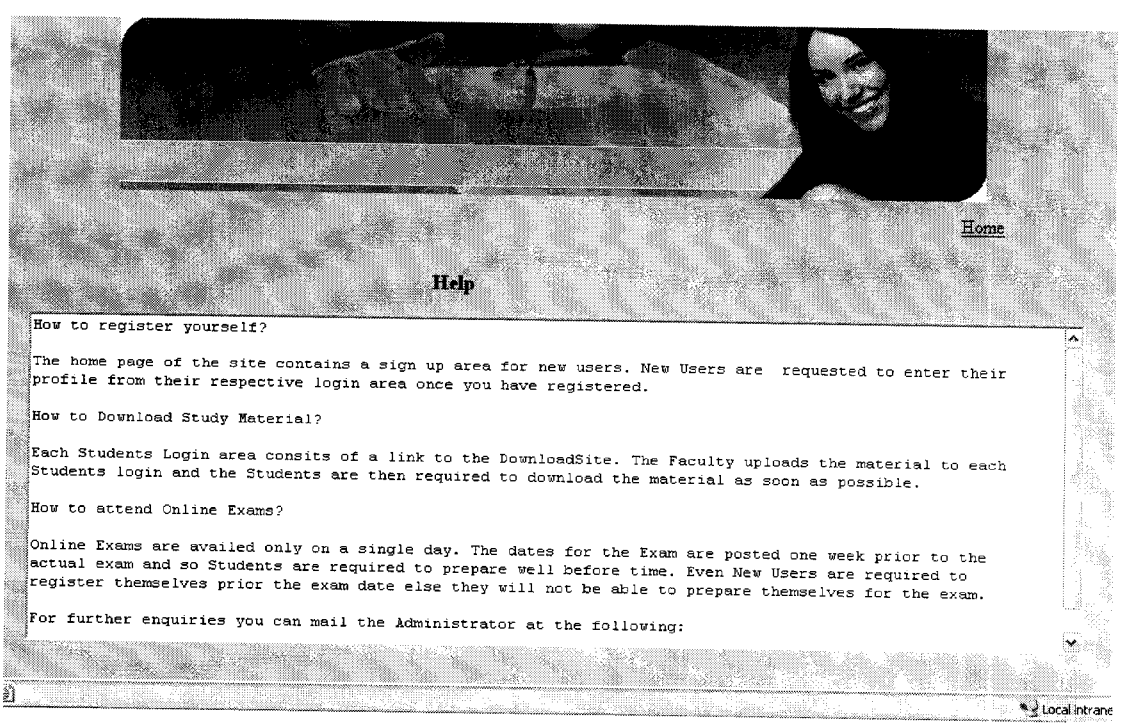
List of Faculties



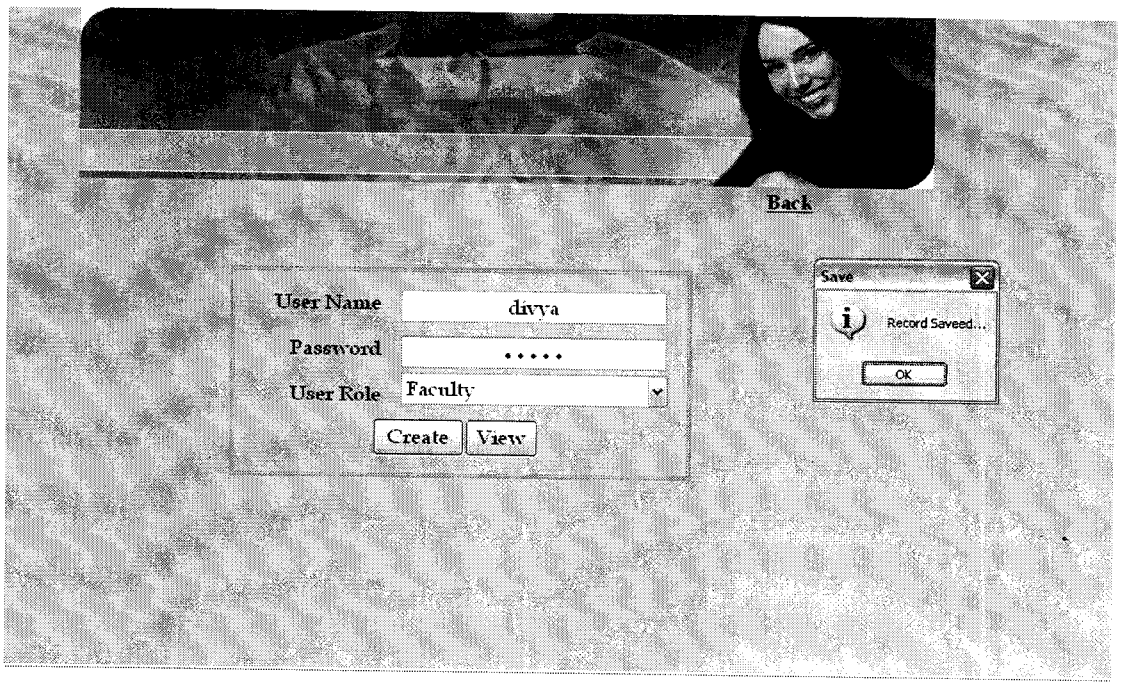
General Tips



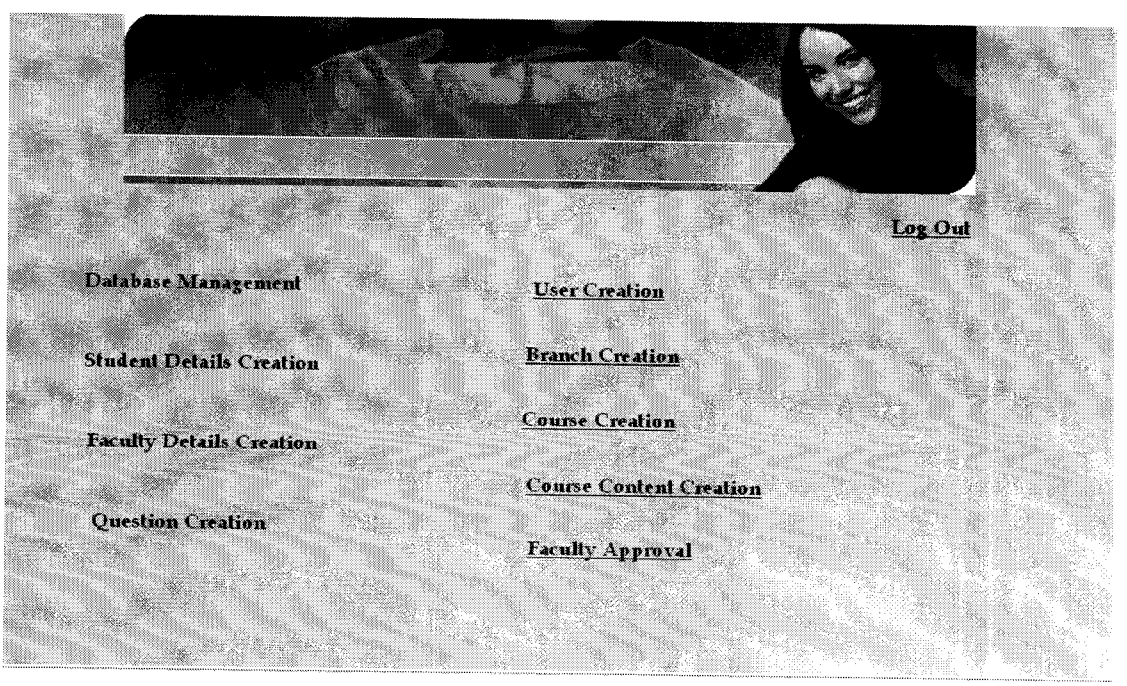
Help Online



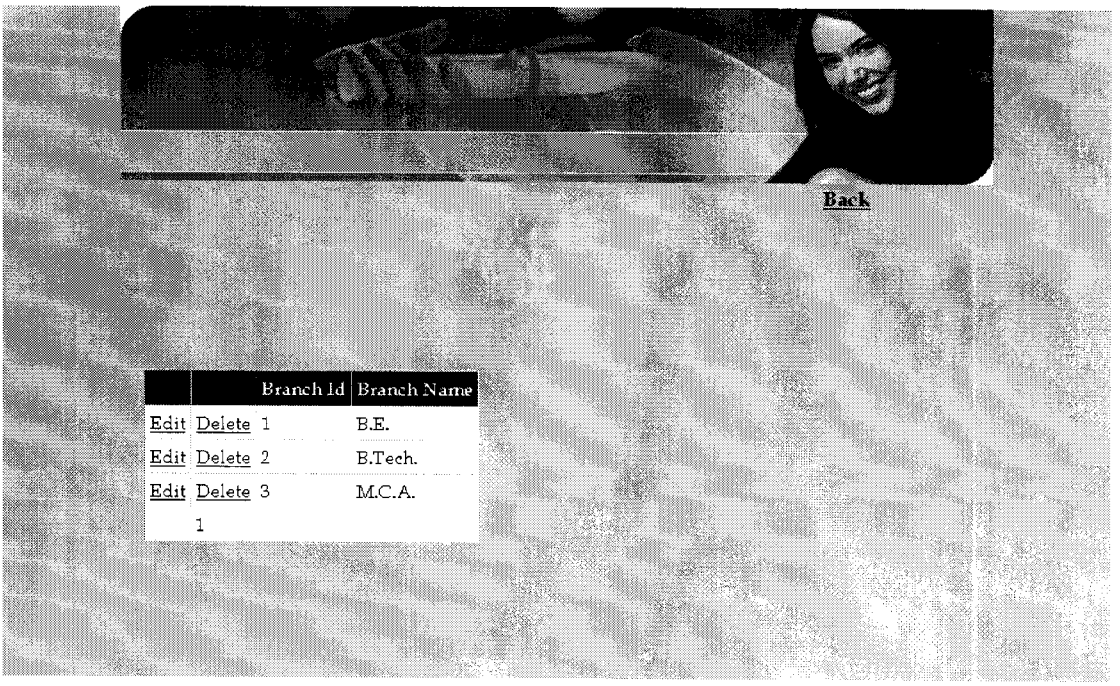
New User Creation



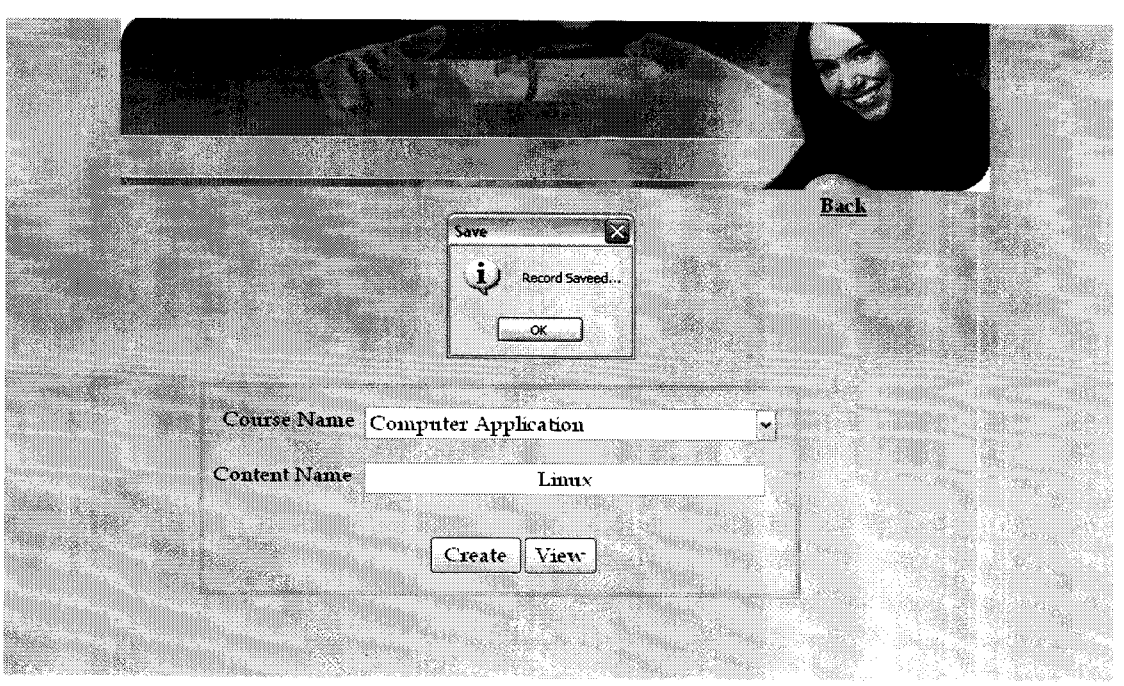
Admin Login



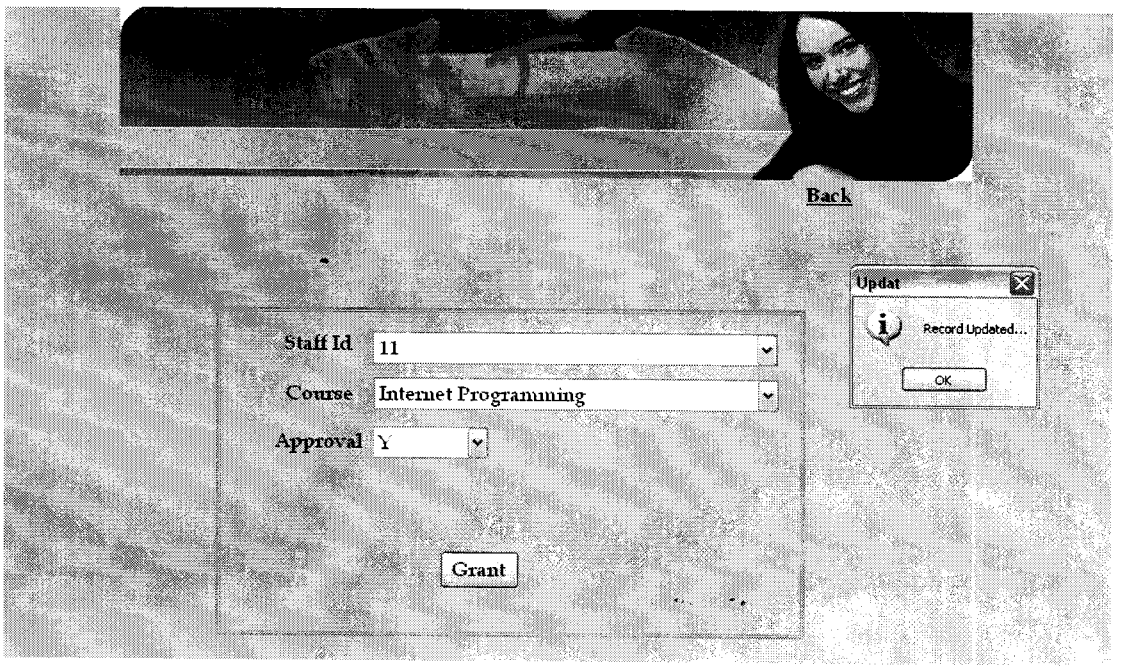
Branch View



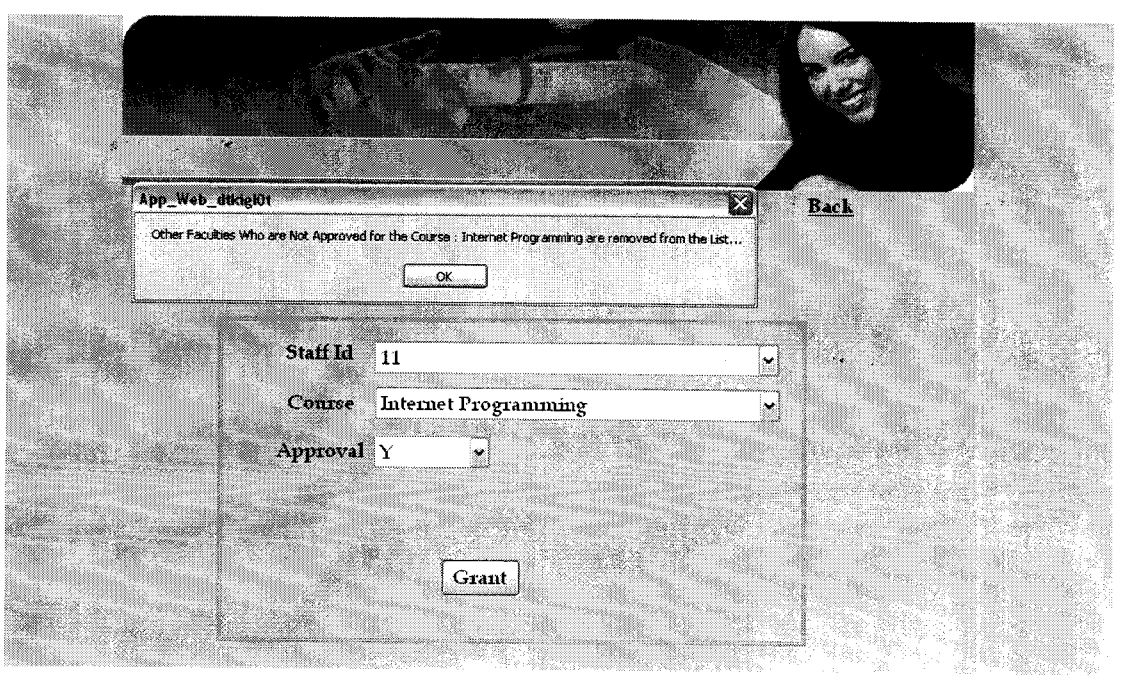
Course Content Creation



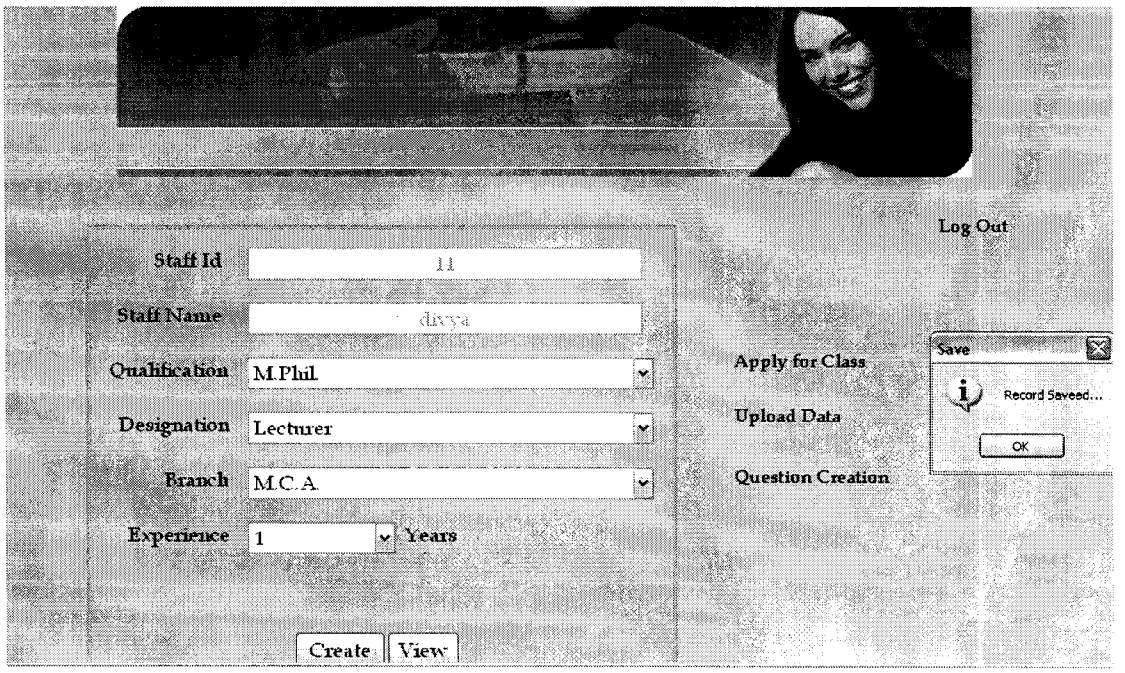
Faculty Approval Step I



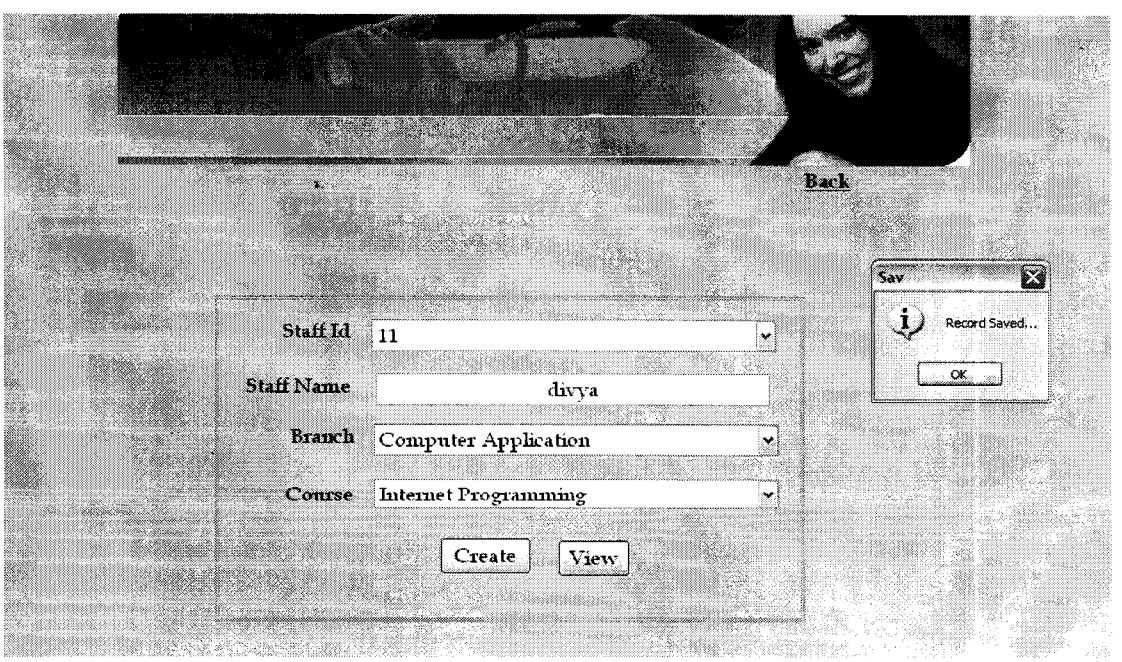
Faculty Approval Step II



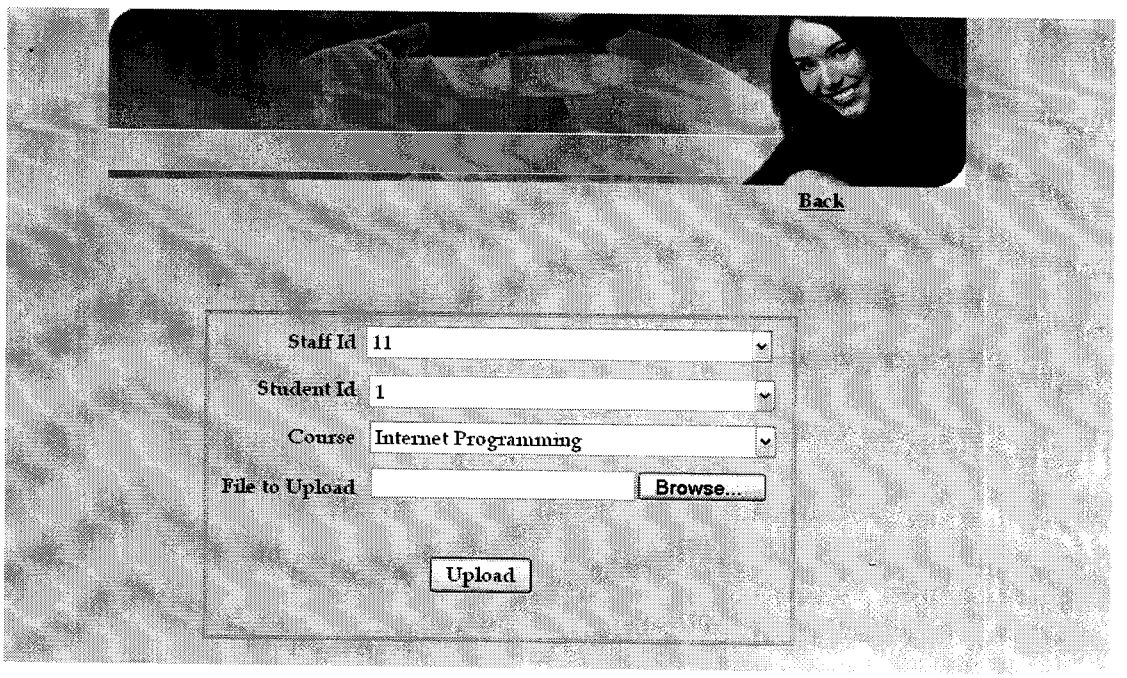
Faculty Login



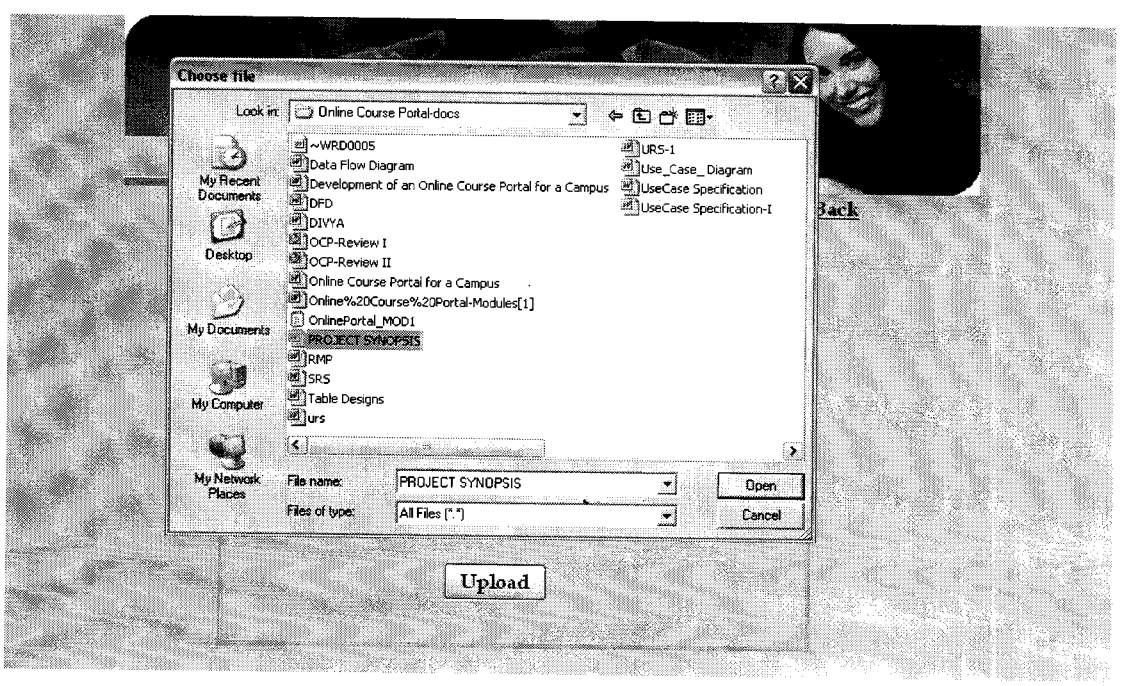
Application for a Course



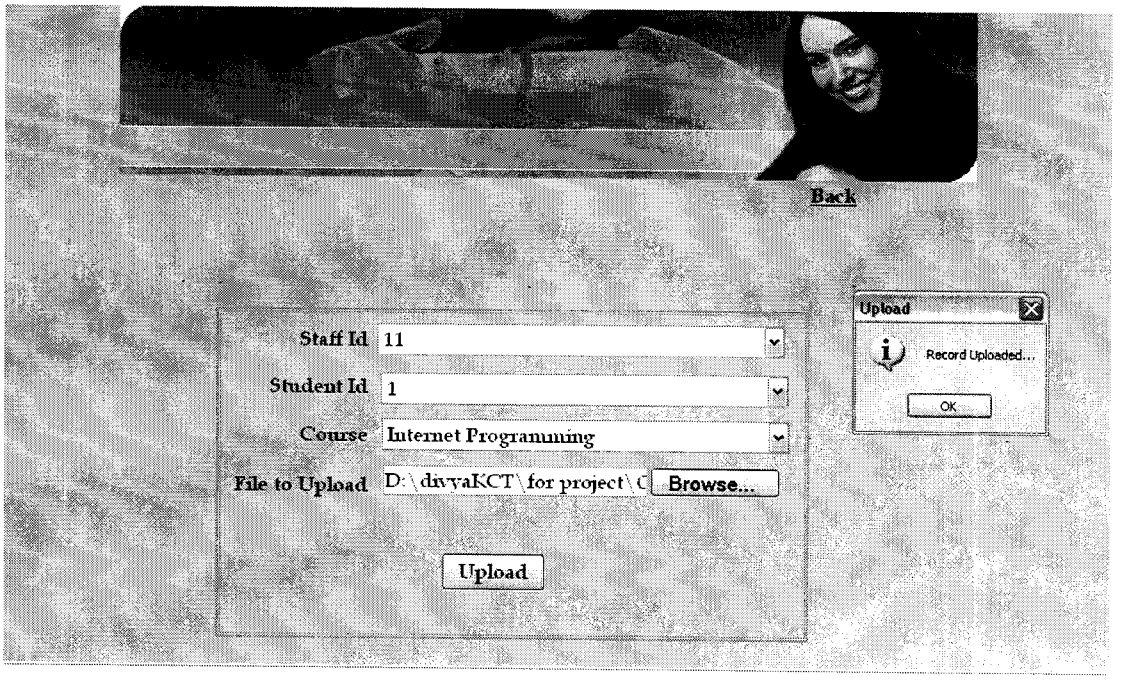
Data Upload Page Step I



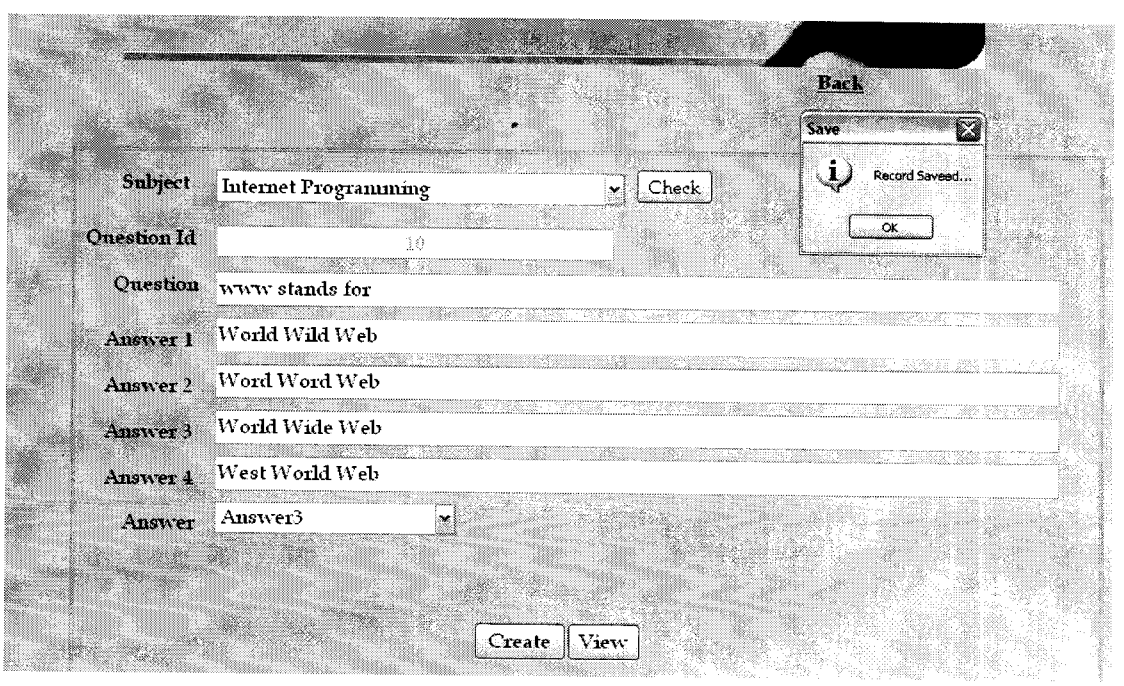
Data Upload Page Step II



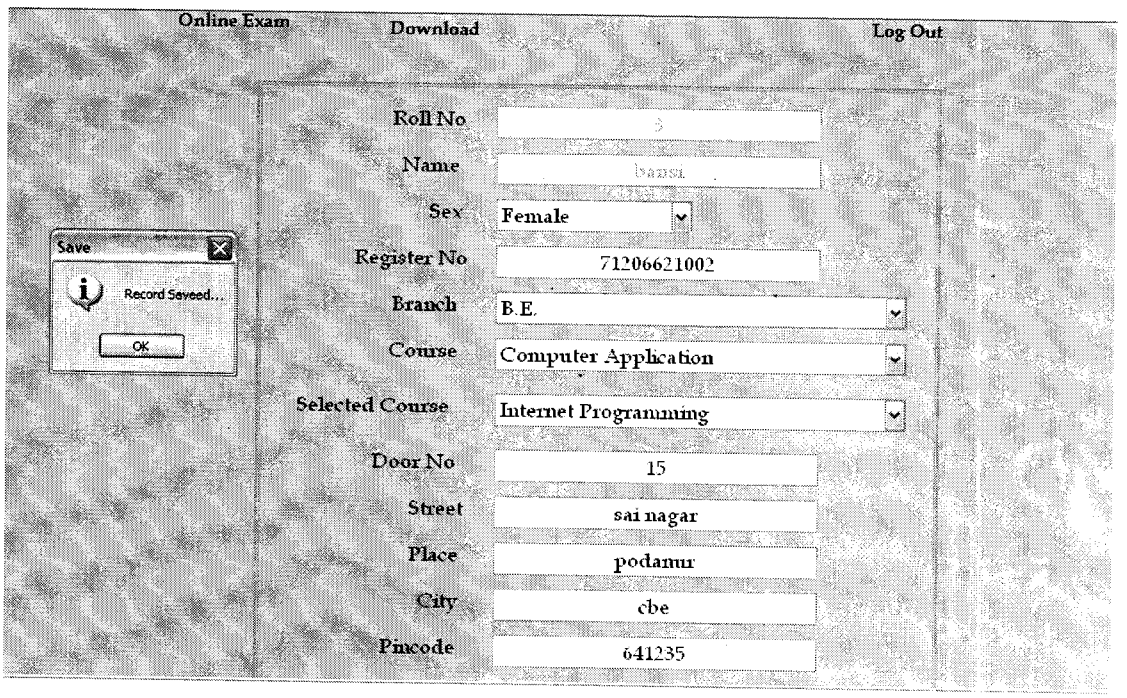
Data Upload Page Step III



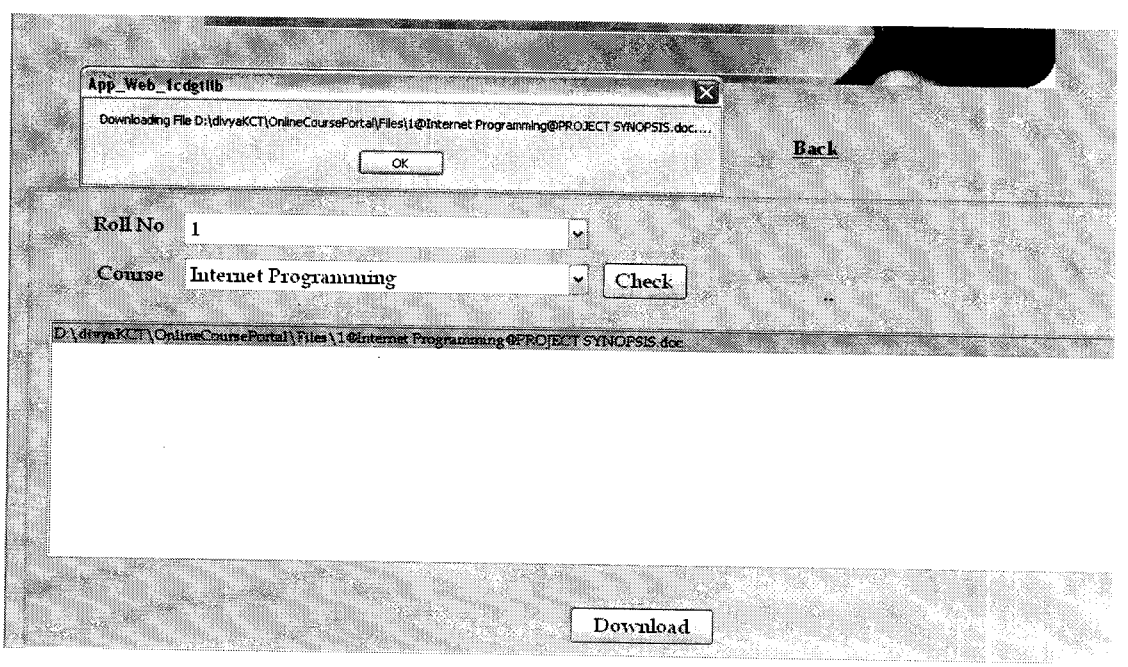
Question Creation by Faculty



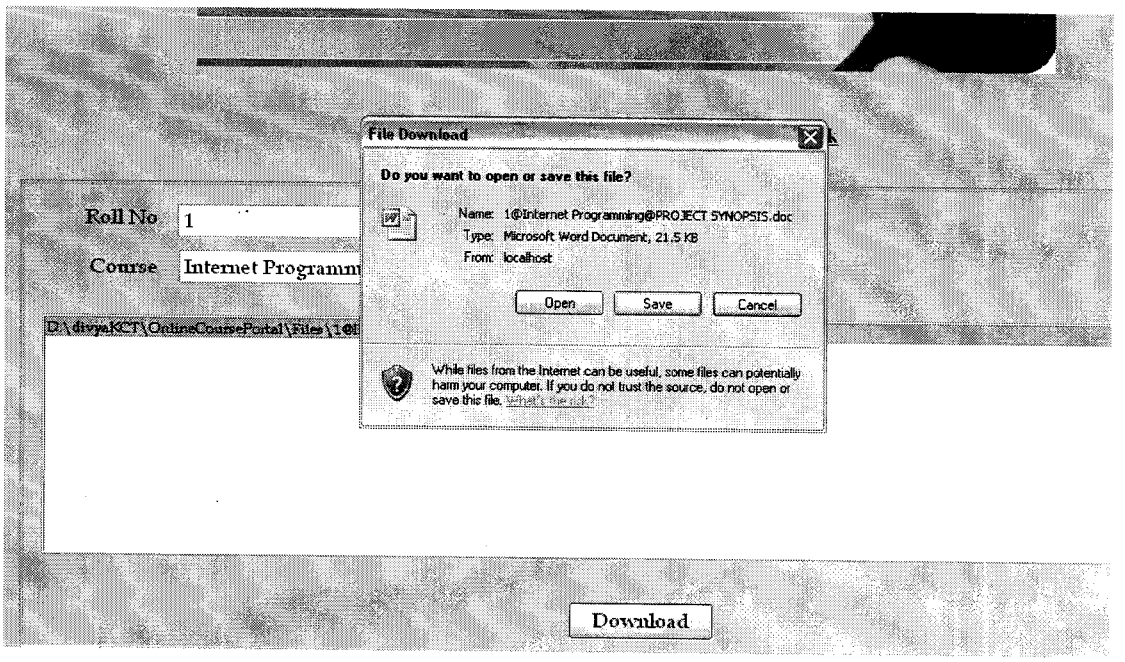
Students Login Page



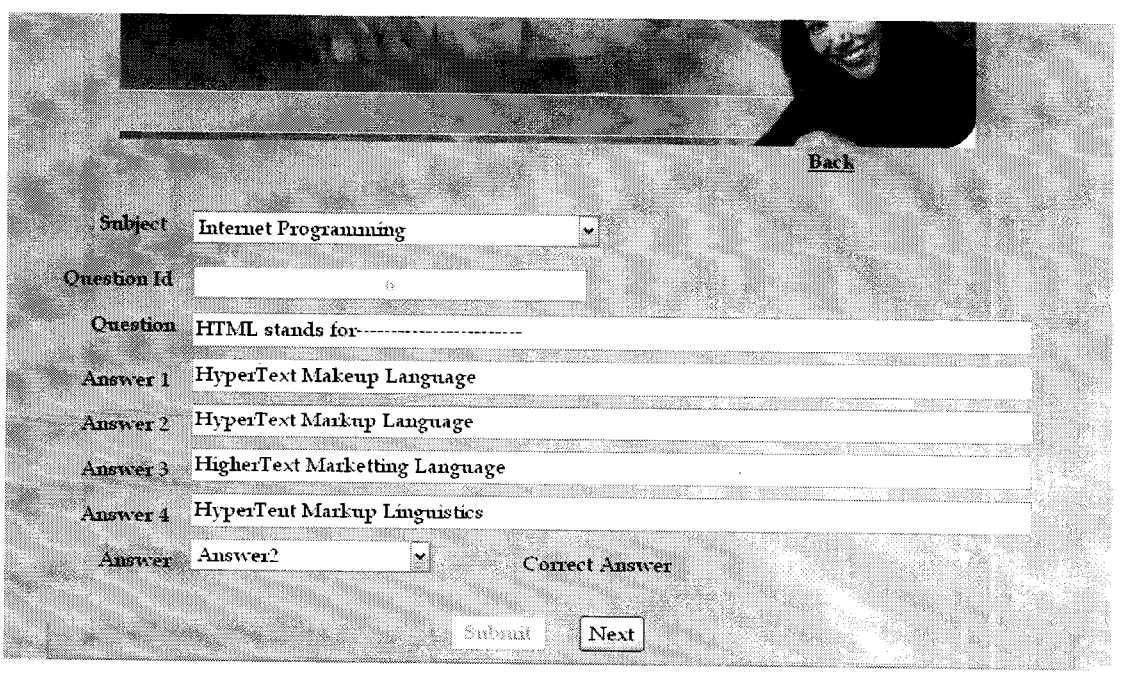
Download Step I



Download Step II



Online Exam



REFERENCES

REFERENCE

1. G. Andrew Duthie "**Microsoft ASP.NET Programming with Microsoft Visual C# .NET Version 2003 Step By Step**", Microsoft Press.
2. Peter DeBetta," **Introducing Microsoft SQL Server™ 2000 for Developers",** Microsoft Press.
3. Bill Hamilton,"**Programming SQL SERVER 2000**", O'Reilly Publication