SYNOPSIS

1. Synopsis

1.1 Introduction

E-Learning System is a web based learning system that helps the students to take the learning in incremental steps by providing the latest available content on the subjects. At it's most basic level, it is an online course with a series of online resources to help students understand and prepare for their interested subjects. Essentially, e-Learning is the realization of the concept of flexible learning, by giving the user time, resources and scope to learn at his own interest and potential.

1.1.1 Problem Domain

Now days, when people are not having time to visit an institute. Therefore, the software is designed to provide the education through Internet.

It shows educators and trainers how to adapt teaching methods and materials to make use of the Internet. Including a framework showing how to apply Internet technology progressively as skills and confidence grow, the project demonstrates the route from adapting materials to developing a virtual course.

The project **"E-Learning"** helps the common world in any field they are to get the knowledge what they want even sitting at their places. This helps them to spare time in their busy schedule and save their time during transportation.

1.1.2 Solution Domain

The website is user friendly and it doesn't requires any training or extra effort to understand it properly. It provides a number of facilities on a single click of mouse. This system is aimed at the smooth functioning of the E Learning. In order to achieve this website contains following features:

- It provides distance learning.
- It makes convenient for people who have other commitments.
- Cost reduction. Reduced paper work.
- Computer evaluated tests.

1.1.3 Objective & Scope

The name of our product will be “E-learning” and its function is to provide teachings materials to people. This product will provide the facility of performing all the basic teaching methodology. The targeted user groups are the remote students who will be the main benefit bearer.

1.1.4 Intended User

Developers: The developers would use this document to implement the functionalities and to ensure traceability of the software.

Testers: The testers would use this document to know the interfaces and to test the software accordingly.

Users: The users would use this document to verify if the requirements specified satisfy their needs.

1.2 Existing System

Now the word E-learning has transcended the traditional definition of "education through offline mode (pen and paper) only". In this approach of learning, students have to go to school and concentrate in a regular class. They have to go school campus and library on the daily basis. There is no feature of studying online and all the tests and material are given to student in offline manner.

1.2.1 Limitations

Following are the limitations of the existing system:

- The questions have to be written to the database directly.
- There is no facility for multiple choice answers.
- There is no facility for subjective answers.
- There is no chat facility which allows the student to interact with the lecturer directly.
- There is no student analysis report given to the test taker.
- There are no video lectures and presentation available to users.

1.3 New System Requirements

1.3.1 System Feature

E-Learning System is a web based learning system that helps the students to take the learning in incremental steps by providing the latest available content on the subject. This process is beneficial both for personal and group learning. Our E-learning website saves the time of learner. Through e-learning system a number of students can be learnt at the same time, what is not possible in face to face learning process. The e-earning website will offer advance test series to the students. The presentation and videos are easy to operate and also come with full instructions. Apart from these our website will generate on the spot analysis of all the students who had given tests. This e-learning website not only offer different courses but also offer test series to test the learner's knowledge. These test series are full with all types of basic, intermediate, and advanced questions, which can help the learner to assess his/her own ability.

1.3.2 Process Flow

The process flow of existing system project goes in the following way:

Information Gathering: This first step is actually the most important one, as it involves a solid understanding of the project and foe the one it is developing for. It involves all the information of your project and the outputs it should provide.

1. **Planning:** The end user of the website is kept in mind when designing the site. These are, after all, the people who will be using the website and its features.
2. **Design**: A good user interface creates an easy navigate web site and should be responsive and user-friendly and the website should be different in look and it should be attractive, that's all we have tried to in our pages.
3. **Development**: At this phase, we have done database connectivity with the designed pages.
4. **Testing and Delivery**: This phase is also one of the important phases of the project we have done testing the working of the pages, proper and correct working with the database.
5. **Maintenance**: After testing, whatever things didn't work out properly, we worked on it again and maintained the proper working of our project.

1.3.3 Hardware Requirements

Processor : Pentium III

Speed : 1.0 GHz

Memory : 256 MB RAM

Hard Disk : 40GB Hard disk with minimum 4GB free space

Interface : Mouse, Keyboard

1.3.4 Software Requirements

Operating System : Windows 2000/XP/7/8.

User Interface : HTML/CSS.

Client-Side Script : JavaScript

Language : Java

Web Technologies : JDB , Servlets , JSP

IDE/Workbench : My Eclipse

Database : My SQL

Server : Tomcat 5.5

1.3.5 Server Side

Processor : Pentium III

Speed : 1.0 GHz

Memory : 256 MB RAM

Hard Disk : 40GB Hard disk with minimum 4GB free space

Interface : Mouse, Keyboard

1.3.6 Client Side

Operating System : Windows 2000/XP/7/8.

Application type : Web Application

1.4 Conclusion

In an era of "lifelong learning", skills for acquiring knowledge play a greater role in success than do knowledge concepts. E-Learning brings it with new dimensions in education. The E-learning website has all the features to learning courses and to give user a friendly environment anywhere and anytime. It will create on demand access. Also it will open opportunities for collaborative learning.

1.4.1 Open Issue

Security & Privacy: The data passes through the Internet is in the public domain; the consequence of this is that, theoretically, anyone with the right tools can eavesdrop on data passing from one computer on the Internet to another.

Structure & Data: A problem that is being increasingly experienced by Internet companies is the fact that they have to interchange a large amount of data and that such data inherently lacks structure. For example, HTML has proved to be an enduring markup language for developing Web pages; however, there are no facilities within the language

1.4.2 Future Enhancements

- A more user friendly interface, the GUI of the website will be modified so that the website becomes more engaging and easier to understand.
- Divide admin module into faculty for easy course management, so that there could be one-one interaction between students and faculty.
- Adding extra courses and test series.
- Providing chat facility between faculty and user
- Adding more presentations and videos.

1.5 Application Domain

1. This is a kind of teaching and learning that one can be acquire by the assist of internet technology.

2. Instead of going to school and concentrate in a regular class, e-learning is done in the soothe of your own home, school campus and library.

2. The e-Learning has several competitive blessings during a variety of areas like accessibility, flexibility, technology and convenience. However, academic sources on-line have utterly revolutionized the approach towards tutorial education in class and school.

3. Dependency on the net based mostly learning has tremendously increased in recent years. As we all know that data is one treasure that nobody will exclude from you.

4. Students attend college to be told and gain data which is able to eventually help them to become successful professionals. That ever college students choose to attend, the foremost necessary factor is that they're gaining knowledge.

5. Thanks to fast modification in web technology, students like e-learning education which may save their time, cash and energy.

1.6 Expected Output

- Students can register for various courses.
- Computer evaluated tests can be taken.
- Students can take tests and evaluate themselves.
- Rating can be done based on content provided.
- On the spot analysis and recommendations will be provided.
- Users can view presentations and videos of all the courses.

1.7 References & Abbreviations

[1] Core Java Vol. 2 by Cay S. Horstmann, Publication name, Publication year

[2] Database management system by Raghu Ramakrishnan and Johannes Gehrke

[3] www.wikipedia.com

[4] www.sun.java.com

[5] www.mysql.com

[6]www.codeacademy.com

[7]www.w3school.com

SOFTWARE REQUIREMENTS SPECIFICATION

2. Software Requirement Specification

2.1 Introduction

This Software Requirements Specification specifies the requirements of the E Learning system that helps the students to take the learning in incremental steps by providing the latest available content on the subjects. E-Learning is a web application designed exclusively for people to learn. Using this website all registered students can access required learning materials. The aim of the project is to create a website for people who want to enhance their knowledge in particular fields .The website makes it possible for the students to access all learning materials from home and they can also evaluate themselves through online tests. The students can access notes on any subject, videos can be viewed by all registered users of the system. Moreover, power point presentations on all topics can be uploaded in to the system. The system provides online tests on all subjects through which the students can get a regular assessment of themselves.

2.1.1 Purpose

This Software Requirement Specification (SRS) specifies the requirements of the E-learning System which will be used by the student. This document will be useful for the users and system designers of this project for future modifications.

2.1.2 Scope

The name of our product will be “E-learning” and its function is to provide teachings materials to people. This product will provide the facility of performing all the basic teaching methodology. The targeted user groups are the remote students who will be the main benefit bearer.

2.1.3 Definitions, Acronyms, and Abbreviations

Table 1: Definitions

Term	Definition
E-Learning	E-learning is a general term that relates to all training that is delivered with the assistance of a computer. Delivery of e-learning can be via CD, the Internet, or shared files on a network.
User/Student	Someone who interacts with website
Admin/Teacher	System administrator who is given specific permission for managing and controlling the system
JSP	Java Server Pages (JSP) is a technology that helps software developers create dynamically generated web pages based on HTML, XML, or other document types. Released in 1999 by Sun Microsystems, JSP is similar to PHP, but it uses the Java programming language.
HTML	Hyper Text Markup Language, commonly referred to as HTML, is the standard markup language used to create web pages. It is written in the form of HTML elements consisting of tags enclosed in angle brackets (like <html>).
SQL	Structured Query Language is a special-purpose programming language designed for managing data held in a relational database management system (RDBMS), or for stream processing in a relational data stream management system (RDSMS).
HTTP	The Hypertext Transfer Protocol (HTTP) is an application protocol for distributed, collaborative, hypermedia information systems. HTTP is the foundation of data communication for the World Wide Web.

2.1.4 References:

[1] Core Java Vol. 2 by Cay S. Horstmann

[2] Database management system by Raghu Ramakrishnan and Johannes Gehrke

[3] www.wikipedia.com

[4] www.sun.java.com

[5] www.mysql.com

[6]www.codeacademy.com

[7]www.w3school.com

2.1.5 Intended Audience

Developers: The developers would use this document to implement the functionalities and to ensure traceability of the software.

Testers: The testers would use this document to know the interfaces and to test the software accordingly.

Users: The users would use this document to verify if the requirements specified satisfy their needs.

2.1.6 Overview

The remainder of this document includes three chapters and appendixes. The second one provides a product perspective and its functions .Further; the chapter also mentions the system constraints, general constraints and assumptions about the product.

The third chapter provides the requirements specification in detailed terms and a description of the different system interfaces. Different specification techniques are used in order to specify the requirements more precisely for different audiences.

The fourth chapter deals with the analysis models such as sequence diagrams, data flow diagrams and state-transition diagrams. The Appendixes in the end of the document include the all results of the requirement and a release plan based on them.

2.2 General Description

2.2.1 Product Perspective

This system will consist of the following users: a guest user, a student (registered user and admin).The guest user will be able to view courses and the student i.e. the registered user will be able to browse courses, read content and give tests and view grades. The admin will be able to manage users i.e. add and delete them, add courses, delete courses, view grades.

2.2.2 Product Functions

With the website, the users will be able to login and browse for various courses. they can study for the course and appear for test which is a multiple choice question type and will be a computer evaluated test and the result will be displayed as soon as the user finishes the test.

2.2.3 User Characteristics

Administrators (Teacher): They are the core users and are able to add new users (students) to the system and permit them to access the student level features of the system. they will also be able to add new courses to the website.

Client Users (Students): They login and get access to the website at client level.

2.2.4 General Constraints

- GUI is only in English.
- Login and password is used for the identification of users.
- Only registered students will be authorized to study the content and give tests.

2.2.5 Assumptions and Dependencies

One assumption about the product is that it will always require a working internet connection; in case the connection is not working the website cannot be accessed. Dependency means that one activity is dependent on other activity, the dependencies in our project are, if the user is not registered he cannot login.

2.3 Specific Requirements

2.3.1 External Interface Requirements

2.3.1.1 User Interfaces

A first-time user of the website should see the log-in page when he/she opens the website, If the user has not registered, he/she should be able to do that on the log-in page. Every user should have a profile page where they can edit their e-mail address, phone number and password.

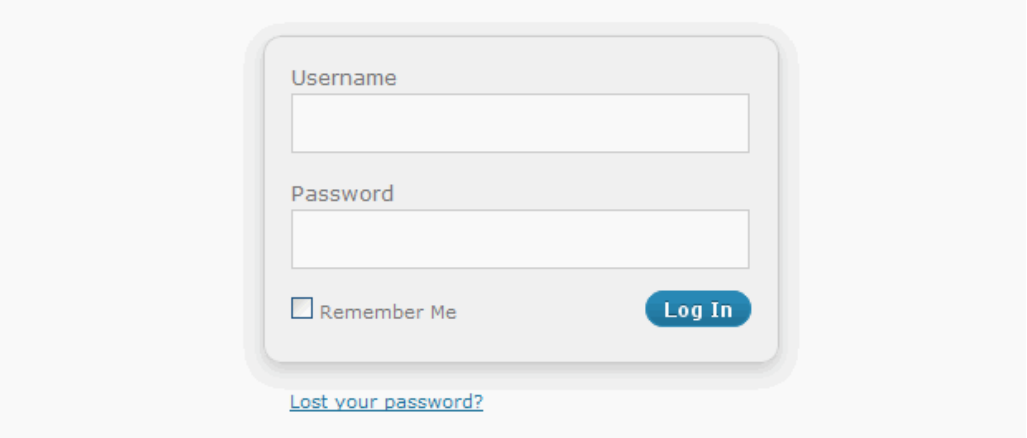

Fig 2.3.1.1 Login Interface

2.3.1.2 Hardware Interfaces

Processor: Pentium-III (or) Higher

Hard Disk: 10 GB

Ram: 512 MB or more

2.3.1.3 Software Interfaces

Operating System : Windows 2000/XP.

User Interface : HTML/CSS.

Client-Side Scripting : JavaScript

Programming Language: Java

Web Technologies: Servlets ,JSP

IDE/Workbench: Netbeans

Database: My SQL

Server: Tomcat 5.5

2.3.1.4 Communications Interfaces

The e-learning website shall use the HTTP protocol for communication over the internet.

2.3.2 Functional Requirements

2.3.2.1 Administrator Module

The functional requirements for administrator module are:

The administrator manages all the users, courses and test given by students. The features that are available to the Administrator are:

1. The administrator has the full fledged rights over the E-Learning.
2. Can manage the users.
3. The administrators can add/delete/update courses available for students.
4. The tests results and questions can also be viewed and updated.

2.3.2.2 Student Module

The functional requirements for student module are:

The candidate will logon to the website and study the various courses. He can also appear for test which is a multiple choice question type. The candidate will get result immediately after the completion of the examination.

The features available to the Students are:

1. Can view the different categories of courses available to study.
2. Can change password.
3. Can give test and view results.
4. Can view and modify its profile.
5. Can view presentations and videos for the subject they choose.

2.3.3 Use Case

Figure-2.3.3.1 Use Case Diagram

2.3.4 Non-Functional Requirements

2.3.4.1 Performance

This software should perform the same way irrespective to its Operating System environments. Time taken for importing files and publishing the multimedia presentation should be minimum.

2.3.4.2 Reliability

It means the extent to which program performs with required precision. The website developed should be extremely reliable and secure so that information about any questions etc. is not leaked before the actual exam is held.

2.3.4.3 Availability

The website will be available 24*7*365 to all users who has a working internet connection.
It will be accessible to all the devices.

2.3.4.4 Security

As all the operations are to be done within a single system security is not an issue for this software.

2.3.4.5 Portability

Portability is one of the key concepts of high-level programming. Portability is the software codebase feature to be able to reuse the existing code instead of creating new code when moving software from an environment to another. The pre-requirement for portability is the generalized abstraction between the application logic and system interfaces. When one is targeting several platforms with the same application, portability is the key issue for development cost reduction.

2.3.4.6 Maintainability

The administrator should maintain correct information of the users and courses provided to them**.**

2.4 Analysis Models

2.4.1 Sequence Diagram

2.4.1.1 Student User

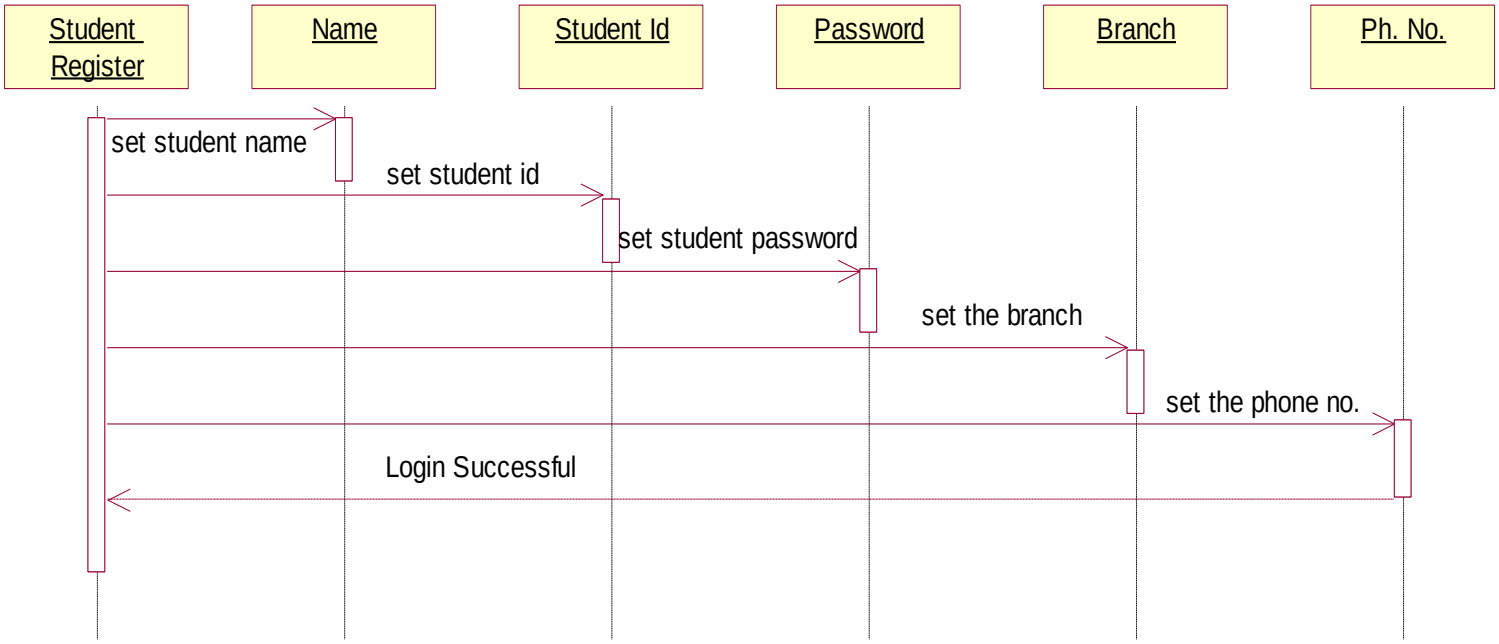

Figure-2.4.1.1 Sequence Diagram of Student

2.4.1.2 Admin User

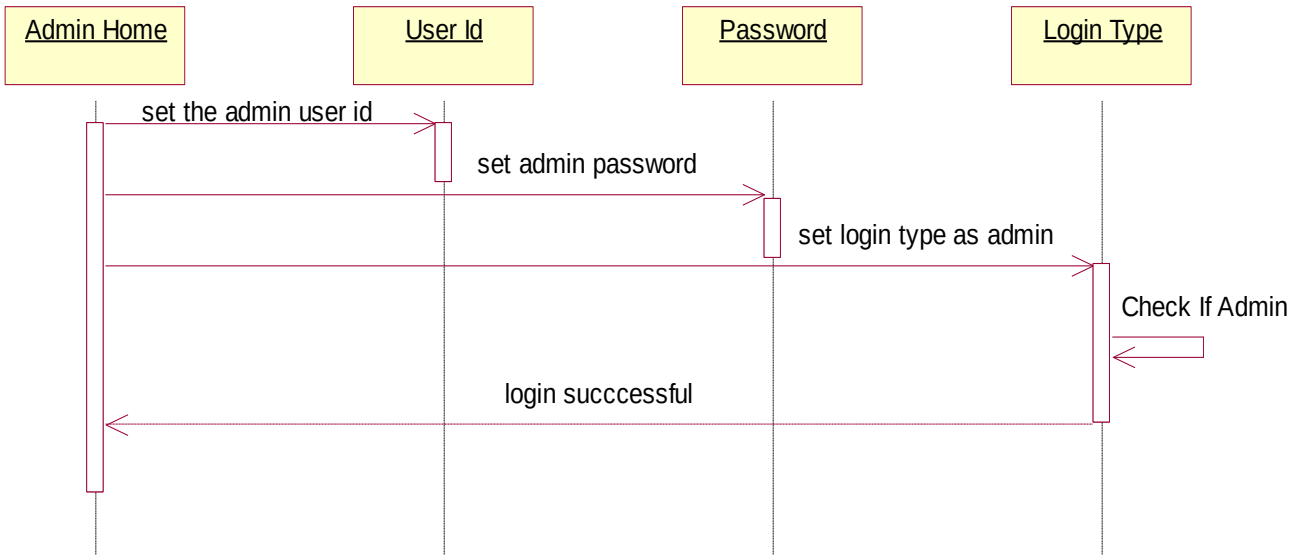

Figure-2.4.1.2 Sequence Diagram Of Admin

2.4.2 Data Flow Diagrams

2.4.2.1 Level 0 Data Flow Diagram (Context)

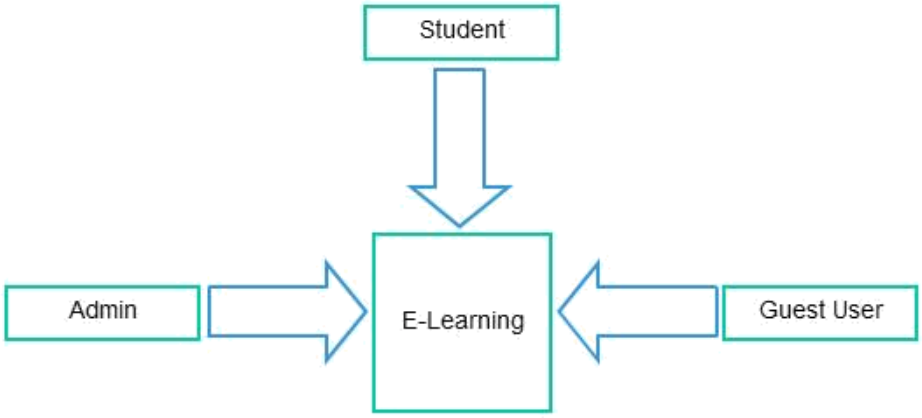

Figure-2.4.2.1 Data Flow Diagram Level 0

2.4.2.2 Level 1 Data Flow Diagram

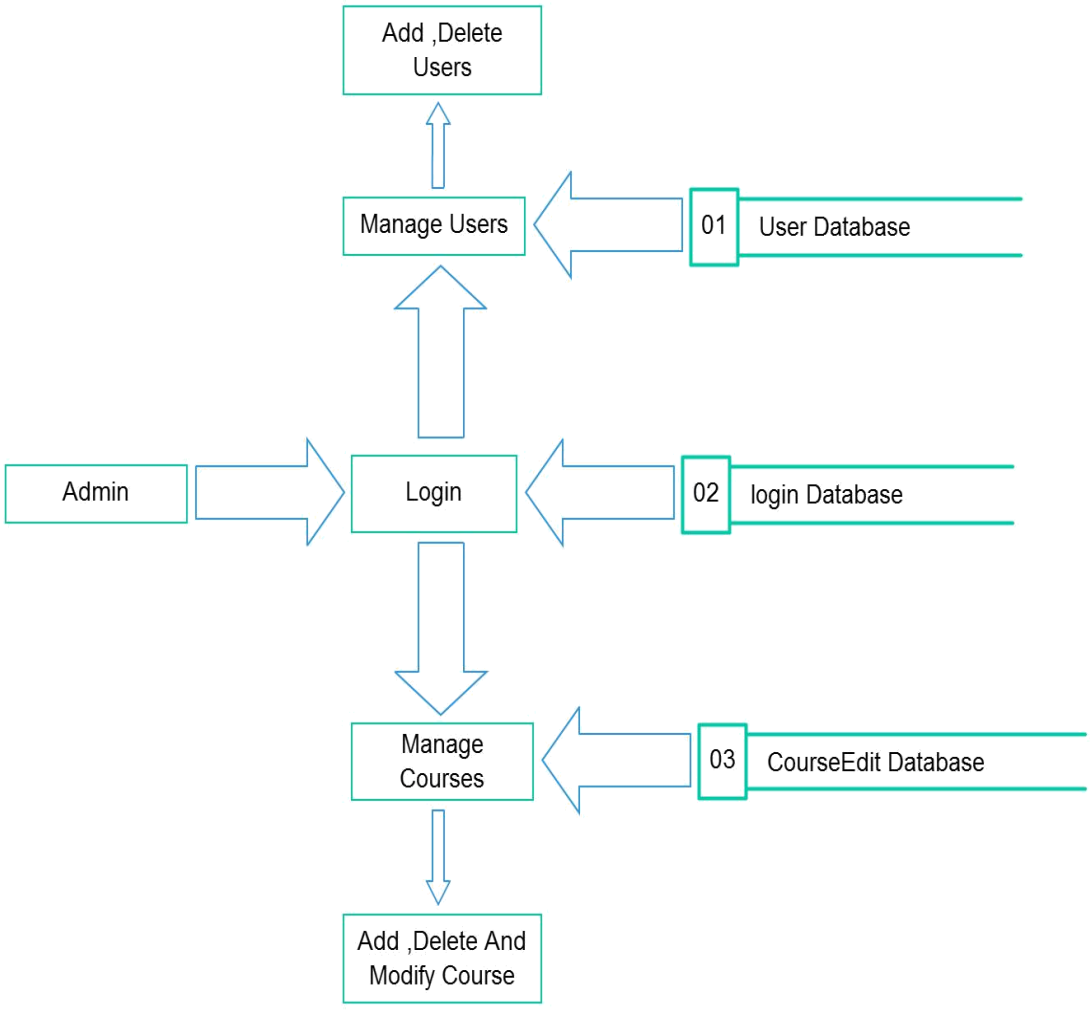

Figure-2.4.2.2 Data Flow Diagram Level 1

2.4.2.3 Level 1 Data Flow Diagram

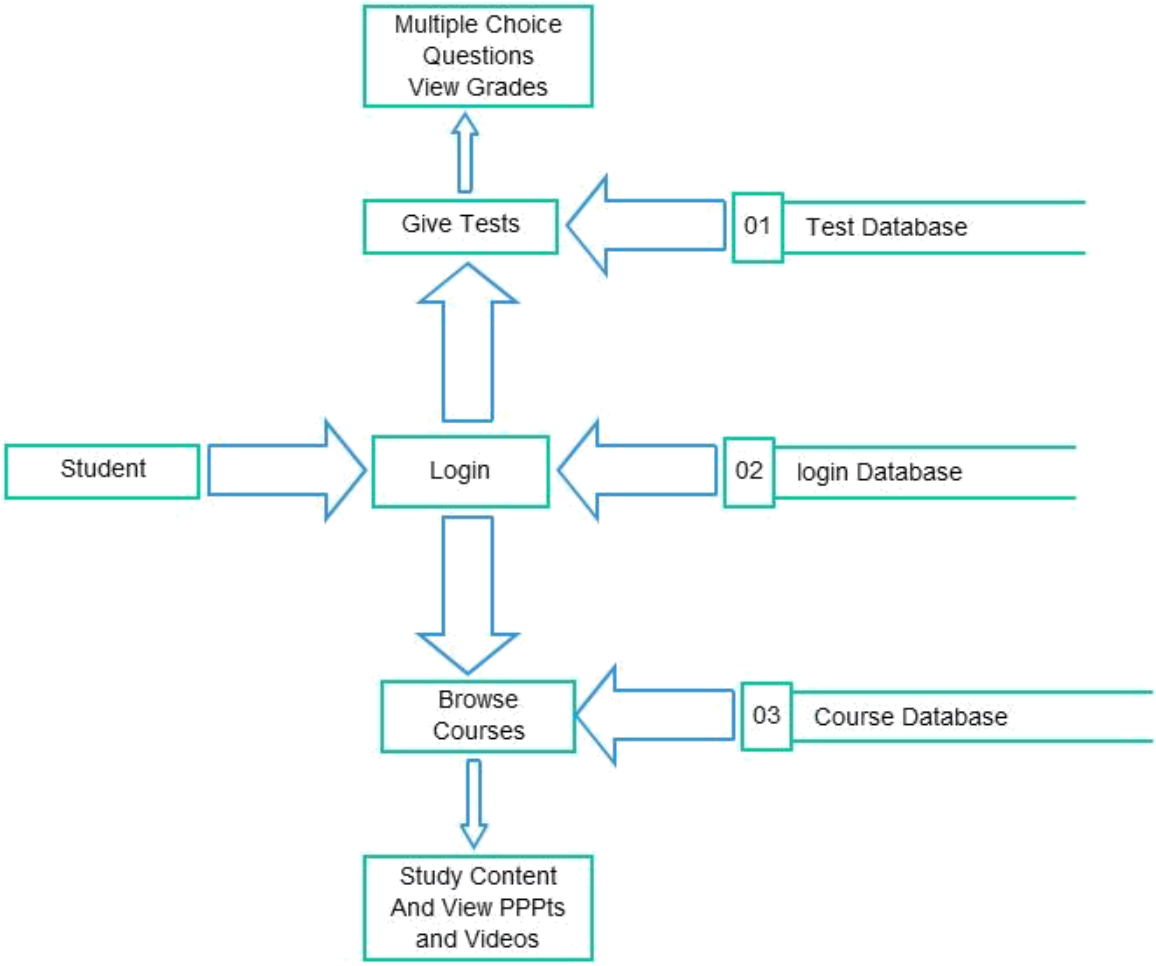

Figure-2.4.2.3 Data Flow Diagram Level 1

2.4.3 Activity Diagram

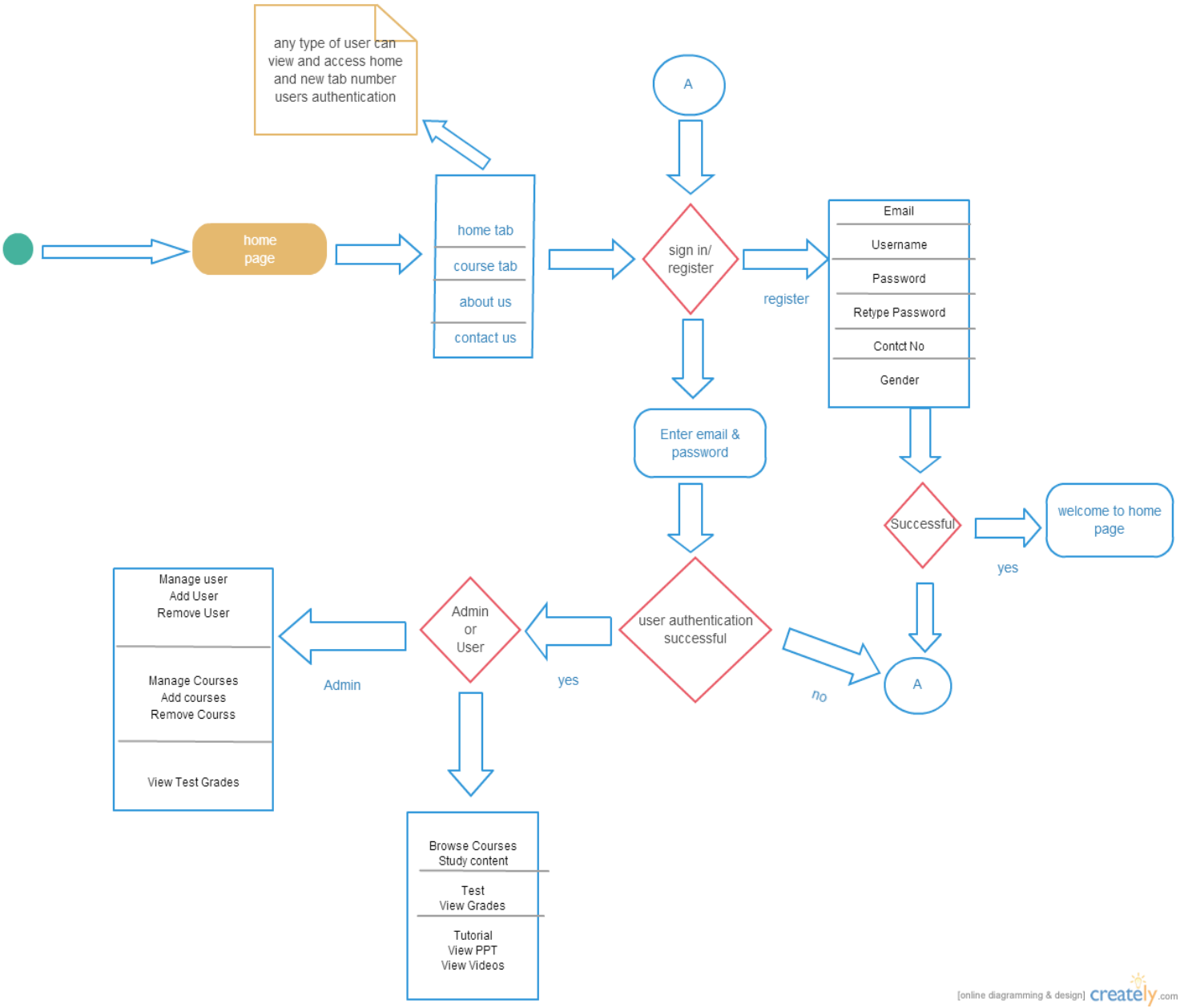

Figure-2.4.3.1 Activity Diagram

A. Appendices

A.1 Appendix 1

JSP	Java Server Pages (**JSP**) is a technology that helps software developers create dynamically generated web pages based on HTML, XML, or other document types. Released in 1999 by Sun Microsystems, **JSP** is similar to PHP, but it uses the Java programming language.
HTML	Hyper Text Markup Language, commonly referred to as HTML, is the standard markup language used to create web pages. It is written in the form of HTML elements consisting of tags enclosed in angle brackets (like <html>).
SQL	Structured Query Language is a special-purpose programming language designed for managing data held in a relational database management system (RDBMS), or for stream processing in a relational data stream management system (RDSMS).
HTTP	The Hypertext Transfer Protocol (HTTP) is an application protocol for distributed, collaborative, hypermedia information systems. HTTP is the foundation of data communication for the World Wide Web.
Server	A server is a running instance of an application (software) capable of accepting requests from the client and giving responses accordingly. Servers can run on any computer including dedicated computers, which individually are also often referred to as "the server".