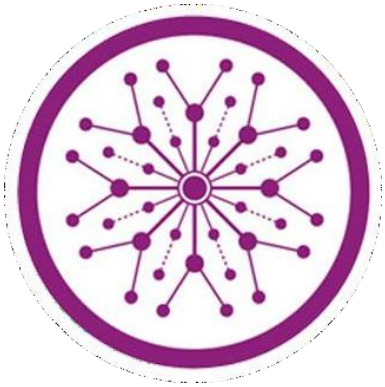
Stoldy

Final Year Project

Session 2018-2022

A project submitted in partial fulfillment of the degree of

BS in Computer Science



Department of Computer Science

Faculty of Computer Science & Information Technology

Superior University, Lahore

Spring 2022

Type (Nature of project)	[✔] **D**evelopment [ ] **R**esearch [ ] **R&D**
Area of specialization	
FYP ID	FYP-BCSM-F21-025

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*The candidates confirm that the work submitted is their own and appropriate credit has beengiven where reference has been made to work of others

Plagiarism Free Certificate

This is to certify that, I Azwar Mehmood S/D of Muhammad Aslam, group leader of FYP under registration no FYP-BCSM-F21-025 at Computer Science Department, The Superior University, Lahore. I declare that my FYP report is checked by my supervisor.

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Designation: Associate Professor

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Signature: _____

Project Report

Stoldy

Change Record

Author(s)	Version	Date	Notes	Supervisor's Signature
	1.0		<Original Draft>	
			<Changes Based on Feedback from Supervisor>	
			<Changes Based on Feedback From Faculty>	
			<Added Project Plan>	
			<Changes Based on Feedback from Supervisor>	

APPROVAL

PROJECT SUPERVISOR

Comments: _____

_____

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Name: _____

Date: _____ Signature: _____

PROJECT MANAGER

Comments: _____

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Date: _____ Signature: _____

HEAD OF THE DEPARTMENT

Comments: _____

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Date: _____ Signature: _____

Dedication

This work is dedicated to my Friends and Teachers . . . . . .

Acknowledgements

We are really thankful to our supervisor Sir Jawad Butt for their valuable guidance, constructive criticism and encouragement through the project.

Thanks to my team members who have made valuable comment suggestions on this report which inspired us to improve our assignment.

Executive Summary

Stoldy is an online teaching and learning platform for students and tutors. The purpose of Stoldy is to automate the existing manual system by the help of computerized equipment's and full-fledged computer software, fulfilling their requirements.

The main objective for developing this Stoldy App is provide a user-friendly environment to provide knowledge and give everyone a chance to learn. Stoldy provides innovative courses directly to you. Take any class, any time you want, anywhere you want, with no additional software to download all you need is an internet connection. Study at your own pace and access your course when it is convenient for you. Stoldy can be helpful to all students to improve their knowledge. In Stoldy you will able to add student in a class, upload file, add Course, Department, Subject. It has also a form validator and a Responsive Design compatible in your Mobile Phone and Tablet. This project provides a lot of features to manage in very well manner. We also provide e-learning project report in php. This project contains a lot of advance modules which makes the back-end system very powerful. We have developed many modules in this App. Student can either use Mobile app or Stoldy website for learning online.

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Chapter 1

Introduction

Chapter 1: Introduction

Online learning is education that takes place over the Internet. It is often referred to as “eLearning” among other terms. However, online learning is just one type of “distance learning” - the umbrella term for any learning that takes place across distance and not in a traditional classroom. Distance learning has a long history and there are several types availabletoday, including:

• Correspondence Courses: conducted through regular mail with little interaction.

• Telecourses: where content is delivered via radio or television broadcast.

• CD-ROM Courses: where the student interacts with static computer content.

• Online Learning: Internet-based courses offered synchronously and/or asynchronously.

• Mobile Learning: by means of devices such as cellular phones, PDAs

Online education is a flexible instructional delivery system that encompasses any kind of learning that takes place via the Internet. Online learning gives educators an opportunity to reach students who may not be able to enroll in a traditional classroom course and supports students who need to work on their own schedule and at their own pace. The quantity of distance learning and online degrees in most disciplines is large and increasing rapidly. Schools and institutions that offer online learning are also increasing in number. Students pursuing degrees via the online approach must be selective to ensure that their coursework is done through a respected and credentialed institution.

The planning and design of an online course should be different than the planning and design of the same course taught in the traditional classroom. This fact is often not understood and online courses are taught in the same way as traditional courses without finding more suitable designs to deliver courses in an online environment. The main issue teaching in online and offline environments is not teaching students face-to-face or not. It is rather, how to effectively use technology in online courses to design the course and deliver it to ensure student learning and accomplishing objectives of the course.

1.1. Background

The conventional education system is insufficient for the growing population, and therefore students are switching to online higher education courses. Gamification is one of the most prevalent trends among online education providers to encourage learning through immersive experiences. Simulation of concepts, level advancement badges and incentive-based learning are driving user engagement on online education platforms. Online learning players, nowadays, are continuously competing to offer differentiated products to the target audience, mostly by offering value-added services with regular courses. Value-added services like internships, live projects, group discussions, and career counselling sessions, offered along with regular courses enhance users' experiences. The online education segment is set to become a multi-billion-dollar opportunity in the World. There are many factors driving this growth including the perceived convenience, increased reach and personalization offered by online channels.

1.2. Motivations and Challenges

Online education is an electronically supported learning and tutor hiring system, which relies on the Internet for interaction and distribution of course material between students and teachers. Growing demand to reduce the cost of education, increasing government initiatives supporting online education, and increasing penetration of smartphones and the Internet are the factors contributing to the growth of the global online education market.

As the market is wide open, we should focus on the right age group and category of the students and create the strategy for the particular segment. It’s not possible to create a general marketing strategy to all those potential markets. Main advertisements can be run through the formal groups and other social media platform. Online education goes beyond the realms of secondary, post-secondary and tertiary education. It also includes courses and modules for competitive exam preparation, professional skill enhancement, and other non-academic subjects.

1.3. Goals and Objectives

The main objective of the project on e-learning management system is to manage the details of assignment, student, teacher, quiz, question. It manages all the information about assignment, class, question, assignment. The project is totally built at administrative end and thus only the administrator is guaranteed the access. The purpose of the project is to build an application program to reduce the manual work for managing the assignment, student, class, teacher. It tracks all the details about the teacher, quiz, question.

1.4. Literature Review/Existing Solutions

The literature on online education has mainly focused on the effectiveness of online courses in terms of student learning. The consensus seems to be “no significant difference”. The finding of no significant difference in student learning in online and offline courses is not an indication that learning outcomes are the same in online and offline courses. Recently, attention is given to perceptions of online education in the job market by the recruiters and employers. Although, it seems mode of education is not a major factor in evaluating the candidates, but many still prefer candidates with traditional face-to-face education. More successful online courses appear to be content and material oriented rather than skill and practice oriented.

The Existing solutions are available like preply, edx etc. but the security of the examination system is very weak. So, we are giving a higher security efficiency system for our examination and quizzes system.

1.5. Gap Analysis

The problem is not with online courses per system, it’s with the design of most online programs. Just as many large, in-class lectures don't support the needs of less proficient students, most of today’s online programs are built as extensions of their on-campus classes and, therefore, achieve the same results.

Most schools anchor their thinking about online learning to their existing on-campus courses. This approach is limiting at best, and a recipe for mediocrity in many cases.
Instead of thinking about a new online initiative whether it's a single course or an entire degree program as a generic rework of an on-campus course, we must approach it as an entirely new educational experience. One that embraces adaptive learning techniques and demands that we evaluate all the requirements and ensure the program is designed with specific learners in mind.

Online learning experiences that embrace learner variability can be designed to be engaging, differentiating and produce great student experiences and outcomes for those with strong academic skills as well as less proficient students.

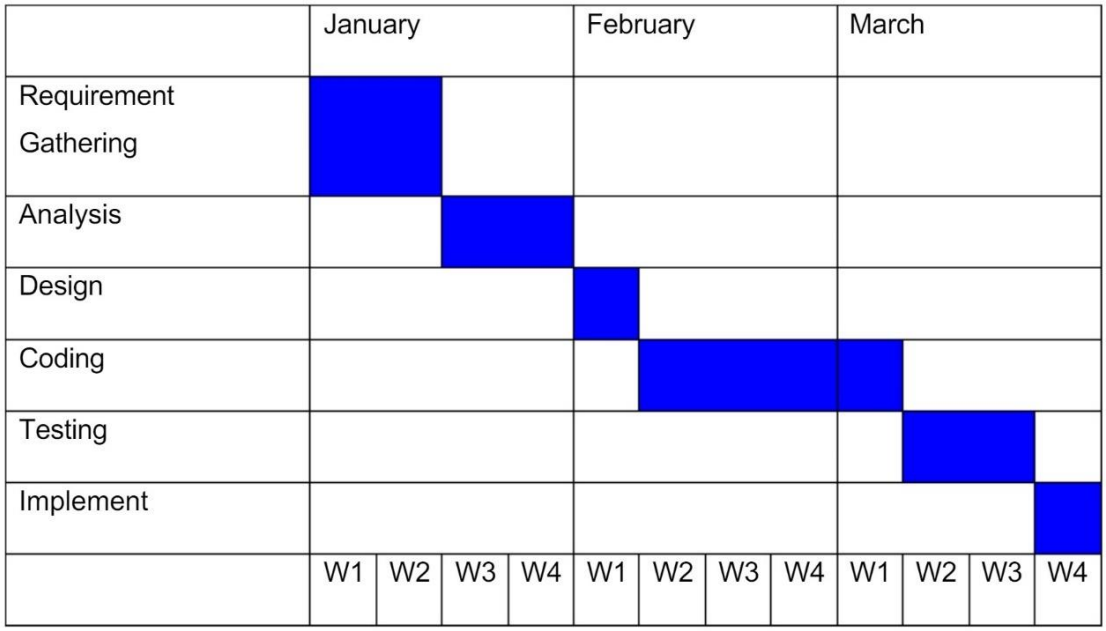
1.6. Proposed Solution

Stoldy will be an online platform that connects students with independent tutors via video chat. Stoldy is based on one-to-one human tutoring. It uses a machine learning algorithm to increase matching efficiency between learners and tutors on a variety of parameters such as price, availability, country of birth, other languages spoken, learning objectives and more.

Stoldy is a platform for tutors to help students with SAT prep. It will has a job's page where you could find many open requests for credible teachers, who teach in various languages and subjects.

1.7. Project Plan

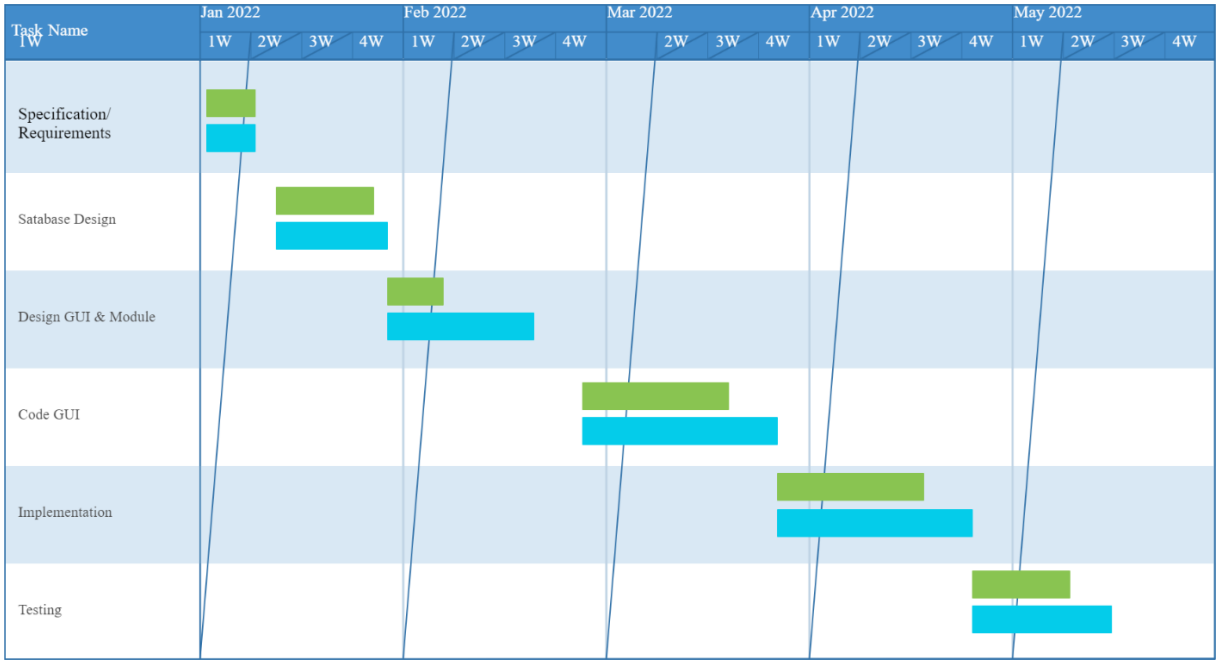
1.7.1. Work Breakdown Structure



1.7.2. Roles & Responsibility Matrix

WBS Sr#	WBS Deliverable	Activity #	Activity #	Duration Of days	Responsible Team Member(s)
1	Project Idea	1.0	1.0	1	Group
2	Requirements gathering	1.1	1.1	1	Shahnam
3	Documentation	1.2	1.2	5	Azwar
4	Software Selection	1.3	1.3	1	Jahanzeb
5	F & NF Requirements	1.4	1.4	1	Jahanzeb
6	User Interface Development	1.5	1.5	6	Azwar
7	Backend Coding	1.6	1.7	25	Jahanzeb
9	Prototype Testing	1.8	1.8	5	Shahnam
10	Deployment	1.9	1.9	2 hours	All Members

1.7.3. Gantt Chart



Chapter 2

Software Requirement Specifications

Chapter 2: Software Requirement Specifications

1.1. Introduction

1.1.1. Purpose

The main purpose of this project is to provide an online platform to teachers and students where they can find each other and can get services. This project will provide easiness to teachers and students both in a way that students can learn from teachers present anywhere in the world, and teachers can have an increase audience to deliver their services. Teachers can earn more and students can learn from international teachers according to international standards. This project can also address the timing issues in a way that the users will be able to make their own schedule.

1.1.2. Document Conventions

This **SRS** is written in Calibri font, for headings font-size 14 is used and for paragraphs font-size 12 is used. For sub-headings same font is used in font-size 12 keeping it bold.

1.1.3. Intended Audience and Reading Suggestions

The intended audience for this **SRS** is mainly project supervisor, developers and testers. This **SRS** contains all the project description, features, and working flow (in theoretical and diagrammatical form). In first chapter the main focus is on the introduction and background of this project, the second chapter is focused on the features of the projects, after second chapter the working flow of the project in diagrammatical form starts and last chapters are related to the testing of project. The first two chapters are for non-technical persons whereas, the other chapters are understandable to technical persons i.e. developers, testers, project supervisor etc.

1.1.4. Product Scope

This project will serve as a bridge between students and teachers available all over the world providing them a facility to learn and teach from anywhere at any time. The main benefit of this project will be the easiness which will be provided to its users who want to learn new things.

1.1.5. References

This main reference for this project is **PREPLY**. Preply is also an online platform through which students and teachers are getting services but it has some limitations which will be overcome in this platform.

1.2. Overall Description

1.2.1. Product Perspective

This project will be a new project associated with its own name. Some pre products are available in the market providing somehow same functionalities but this product will be a scale up for them all. The products which are operating currently in the market will be competitors for our product.

1.2.2. Product Functions

A number of functions will be provided by this product to its user, some of the main functions are listed below

- Students can find teachers from anywhere in the world (available on this platform)
- Teachers can provide online services
- Student assessment will be tracked
- A convenient way to learn things
- No prior certification needed

1.2.3. User Classes and Characteristics

On this platform there will be different classes of users i.e. first timers, frequent users, regular users and etc. Different classes of users will have different type of features and discounts.

1.2.4. Operating Environment

This platform will be available on mobile and web both in a form of application. The database which will be used for both will be the same. The mobile application will be available for Android and IOS both.

1.2.5. Design and Implementation Constraints

Monitoring the students during assessment is one of the biggest implementation constraint, the other major issue is the language barrier among different countries.

1.2.6. Assumptions and Dependencies

This product is going to use a number of third party libraries to provide functionalities. Some of the major libraries going to be used are following

- Agora (for video calling)
- SHA 512 (for online payments)
- Log history (for monitoring students)

1.3. External Interface Requirements

1.3.1. User Interfaces

Mobile User Interface will be developed graphical and touch-sensitive display are available worldwide on any modern mobile device. The UI will allow the user to interact with the application's features, content and functionalities. At the first screen after logging in the users will be able to see the dashboard and they will be guided with the current information of application. Users can also navigate through various pages using bottom navigation view or menu bar on the left side. All the User Interface is design to ensure usability, readability and consistency for every type of user.

1.3.2. Hardware Interfaces

The supported devices for our application will be as following:

Android Operating System must be higher than Android 6.0

Smart Phone should have a minimum space of about 500 MB free in order to install this application.

Smart Phone should have a minimum RAM of about 4 GB to ensure a smooth and proper working.

Smart Phone should must have a higher Adreno level then 450.

Camera should be in working condition.

Laptop should support chrome for Web application

1.3.3. Software Interfaces

Name of component	**Specification**
Opeíating System	Windows 11, Windows 10, Windows7, Linux
Language	Kotlin, Python, django
Database	Fiíebase, sql lite
Bíowseí	Any of Mozilla, Opeía, Chíome etc

1.4 Functional Requirements

- Student Registration: Any Student can register on website using the registration module.
- Student Login: This is the login form, from where Student can login into the system Student View
- Announcement Screen: This is Student View Announcement Screen.
- Student Assignments Report: This is the Student Assignments Report form of the project.
- Student Compose Message Screen: This is the Student Compose Message Screen in this project. Student Event Screen: This is the Student Event where Student will be able to see event report. Student Inbox Screen: This is the Student Inbox Screen form where Student will be able to see message.
- Student Quiz Screen: This is Student Quiz Screen form where Student see quiz report.
- Change Password: This is the change password module from where can Student change his account password.

- Teacher Registration: Any Teacher can register on website using the registration module.
- Teacher Login: This is the login form, from where Teacher can login into the system
- Teacher Add Class: This is Teacher Add Class form.
- Teacher Assignments Add: This is the Teacher Assignments Add form of the project.
- Teacher Class: This is the Teacher Class in this project.
- Teacher Event: This is the Teacher Event where Teacher will be able to add event and see event report.
- Teacher Send Message: This is the Teacher Send Message form where Teacher will be able to send message.
- Teacher Quiz Screen: This is Teacher Quiz Screen form where teacher add quiz and see quiz report. Change Password: This is the change password module from where Teacher can change his account password.

1.5. Other Nonfunctional Requirements

1.5.1. Performance Requirements

The application should save the instance of the logged in stakeholder; they don't need to login again once they have done it already. The application should not allow to move back on login UI without login out from the application. The application should have better response time on slow internet. The application should save the state if the application in on pause. The application should have better response time on slow internet. The application should save the state if the application in on pause. The chat box should be able to do automatic refresh to get new messages.

1.5.2. Safety Requirements

The application should be able to recover account if any user lost or forget its password.
All user data will be saved in real time database, if somehow the application crashes the application should be able to get the data from database when it's working.

1.5.3. Security Requirements

The application will provide the maximum level of security to its users, for which the mechanism of encryption and decryption will be used as this application will require some sensitive data from the users while creating the account. As the data has to be shared over Internet so raw data will be encrypted so the chances of its misuse can be minimized.

1.5.4. Software Quality Attributes

Following are the major quality attributes for this project
Availability: The application should be available 24/7 so that there should not be any delay in the lectures.
Security: The application should be secure as it will have some confidential data of users i.e. NIC, Account details, address etc.
Flexibility: The application should be flexible so it can be used by users on every platform without inconvenience.

1.5.5. Business Rules

Mainly there are two different categories of users i.e. teachers and students. Students will be able to select teacher according to their requirements. On the other hand teachers will be able to accept or reject students offer. In case of acceptance teachers will teach the accepted candidate online which will be monitored by the application according to which fee will be generated and the one getting services will pay it online.

1.6. Other Requirements

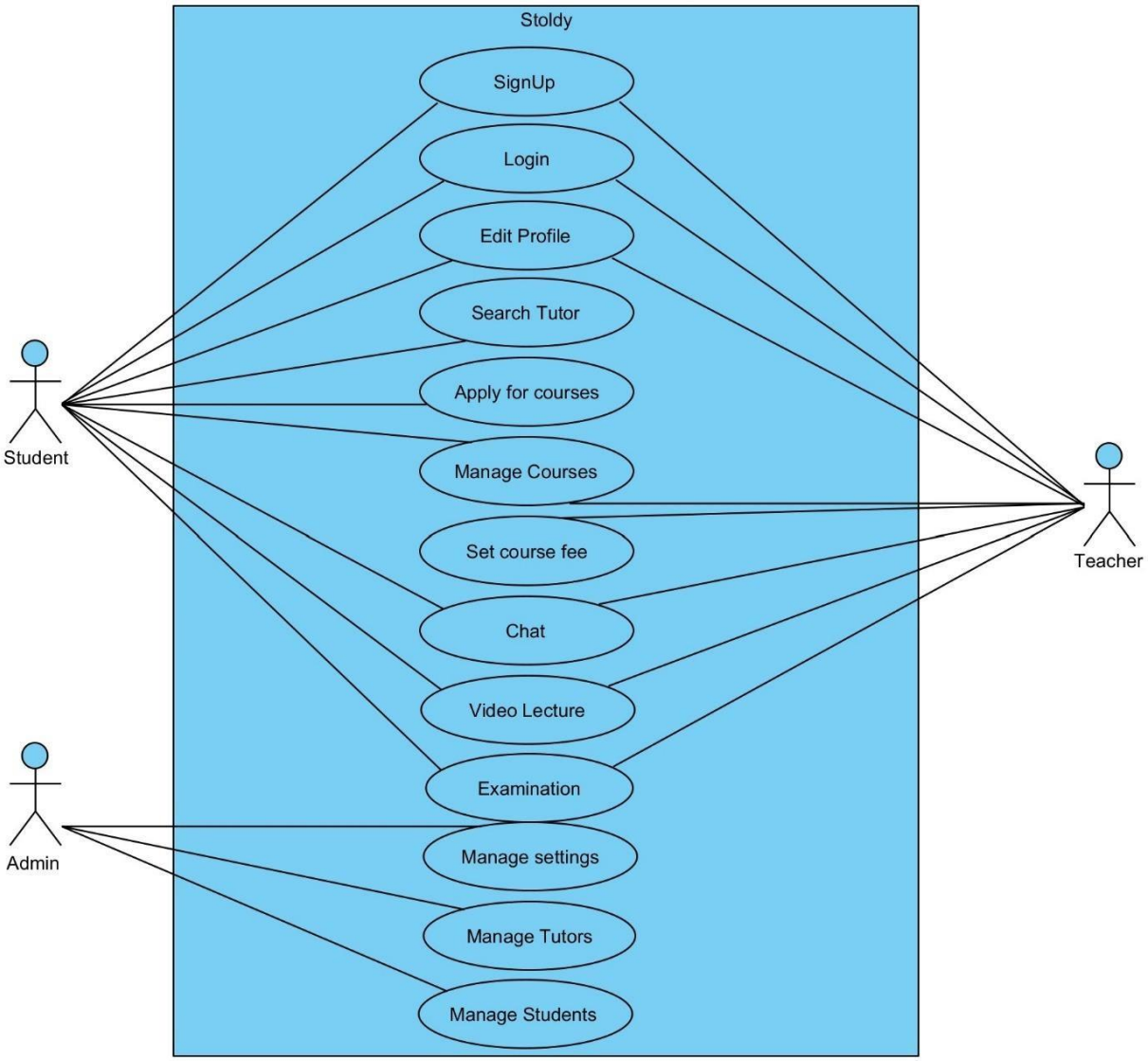
<Define any other requirements not covered elsewhere in the SRS. This might include database requirements, internationalization requirements, legal requirements, reuse objectives for the project, and so on. Add any new sections that are pertinent to the project.>

Chapter 3

Use Case Analysis

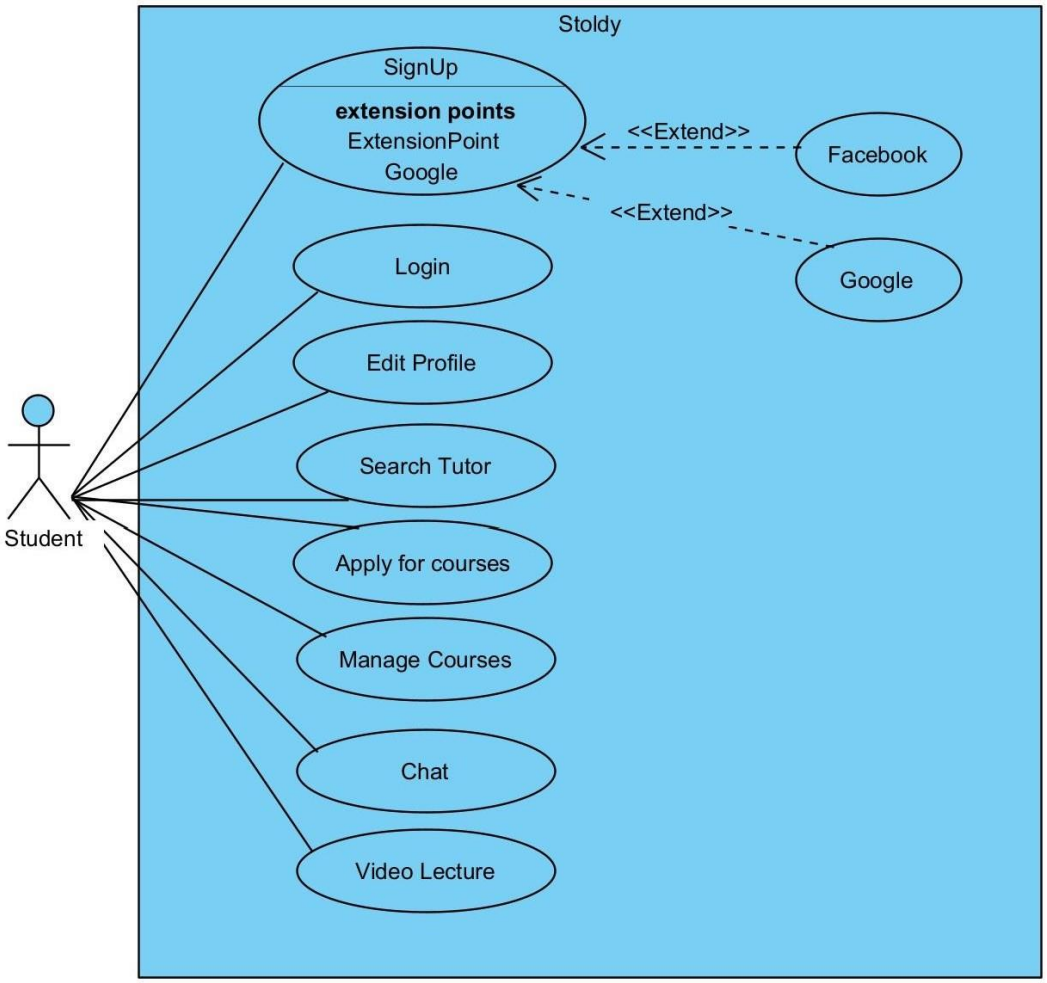
Chapter 3: System Analysis

3.1. Use Case Model

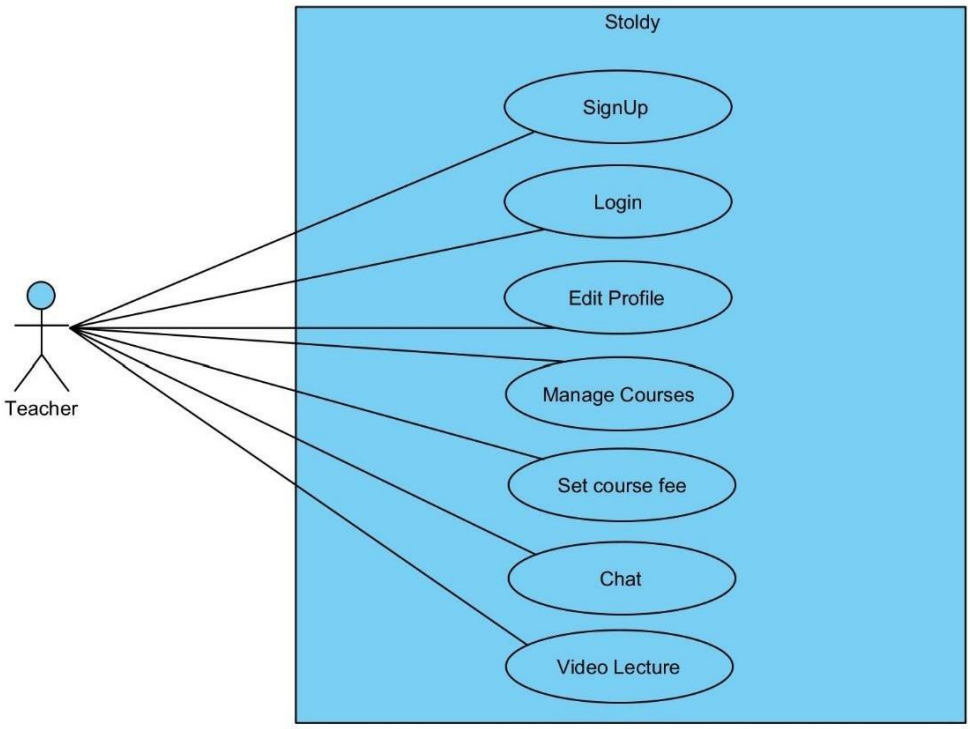


3.2. Use Case Descriptions

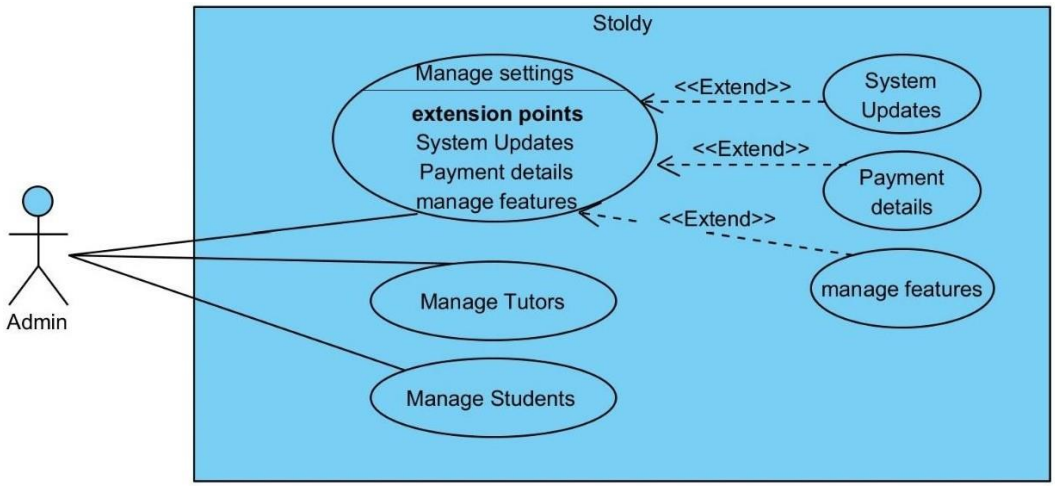
Student Use Case:



Teacher Use Case:



Admin Use Case:



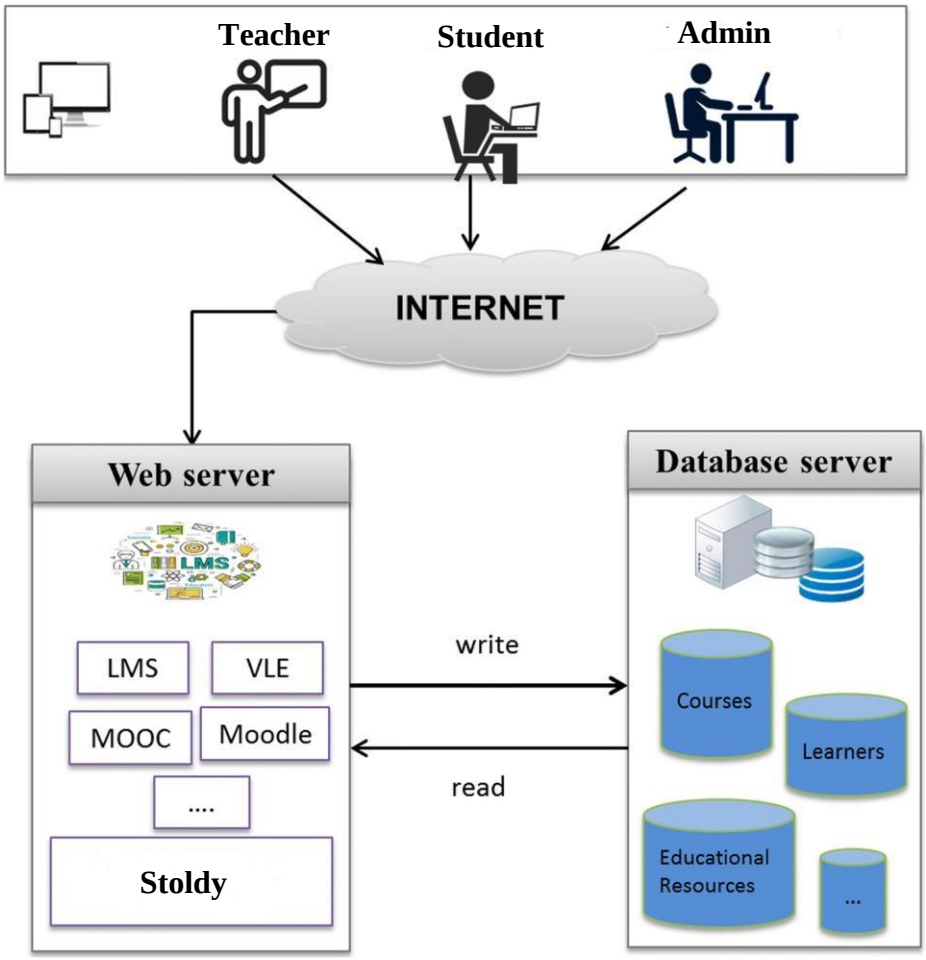
Chapter 4

System Design

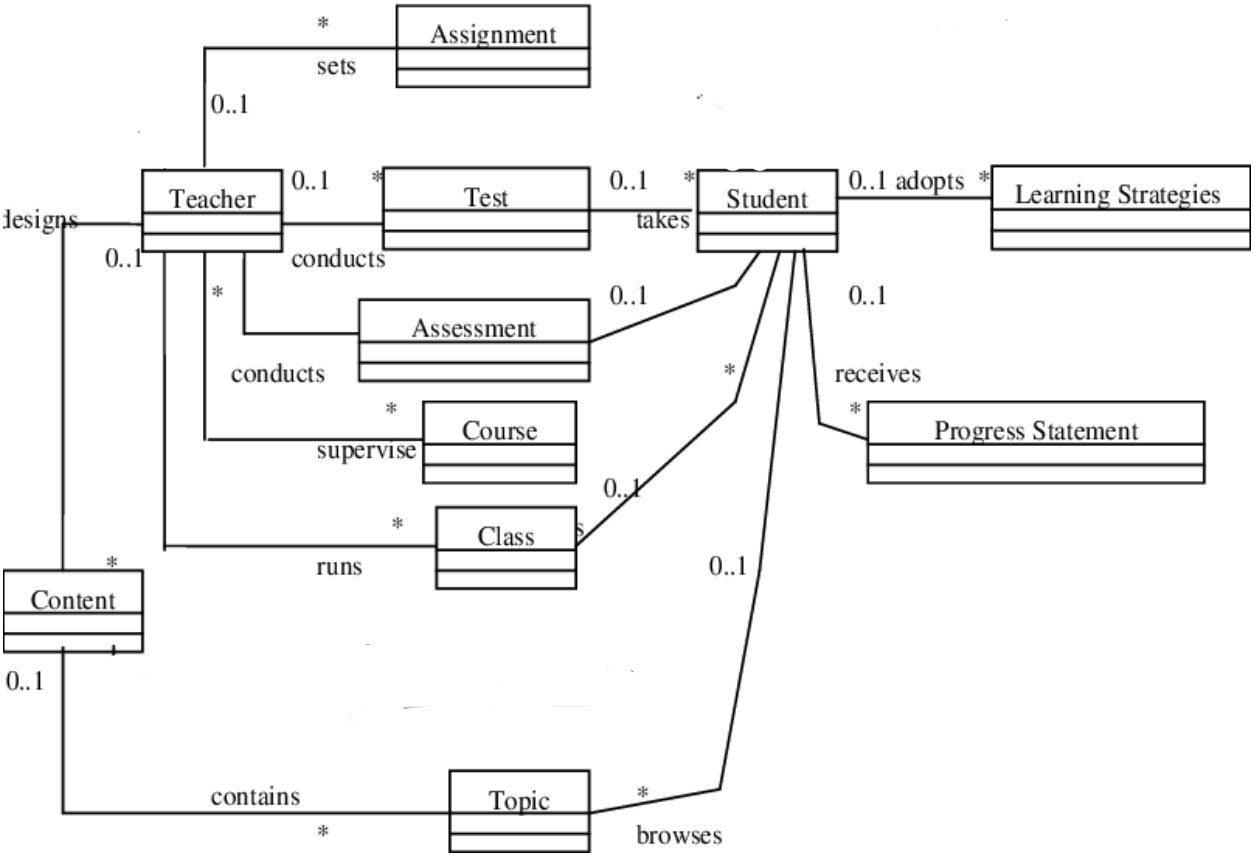
Chapter 4: System Design

System design is the process of designing the elements of a system such as the architecture, modules and components, the different interfaces of those components and the data that goes through that system.

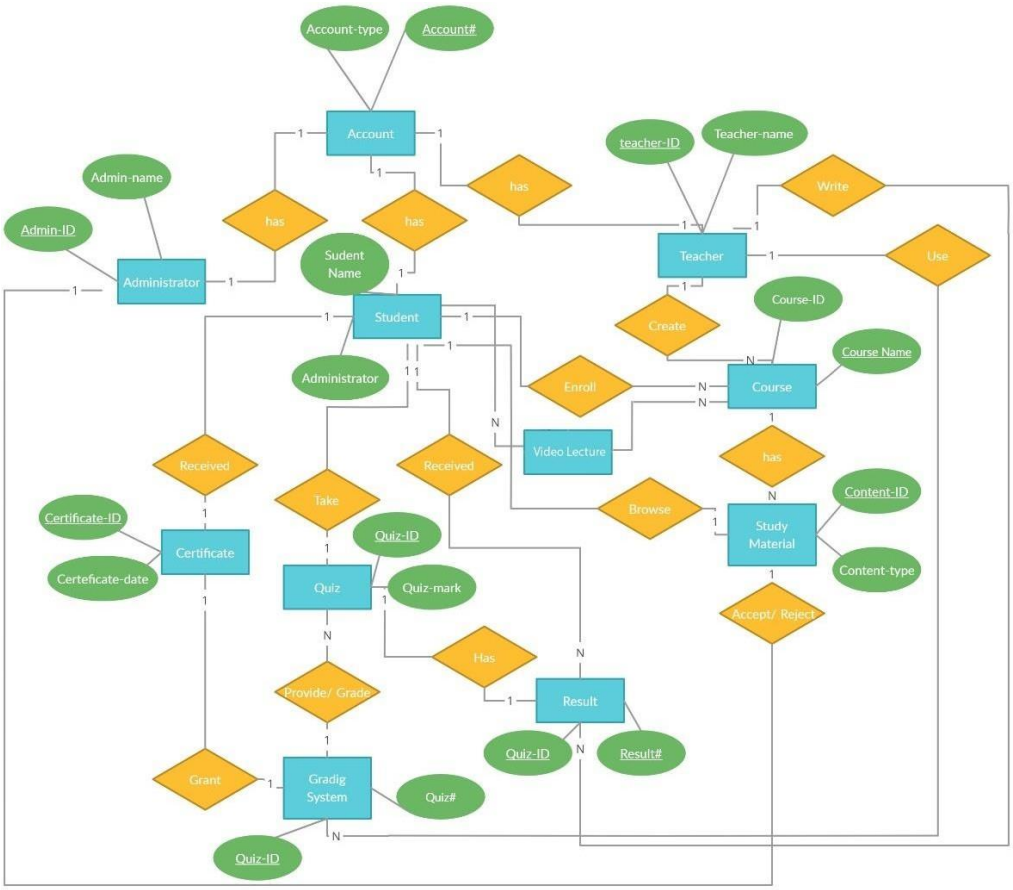
4.1. Architecture Diagram



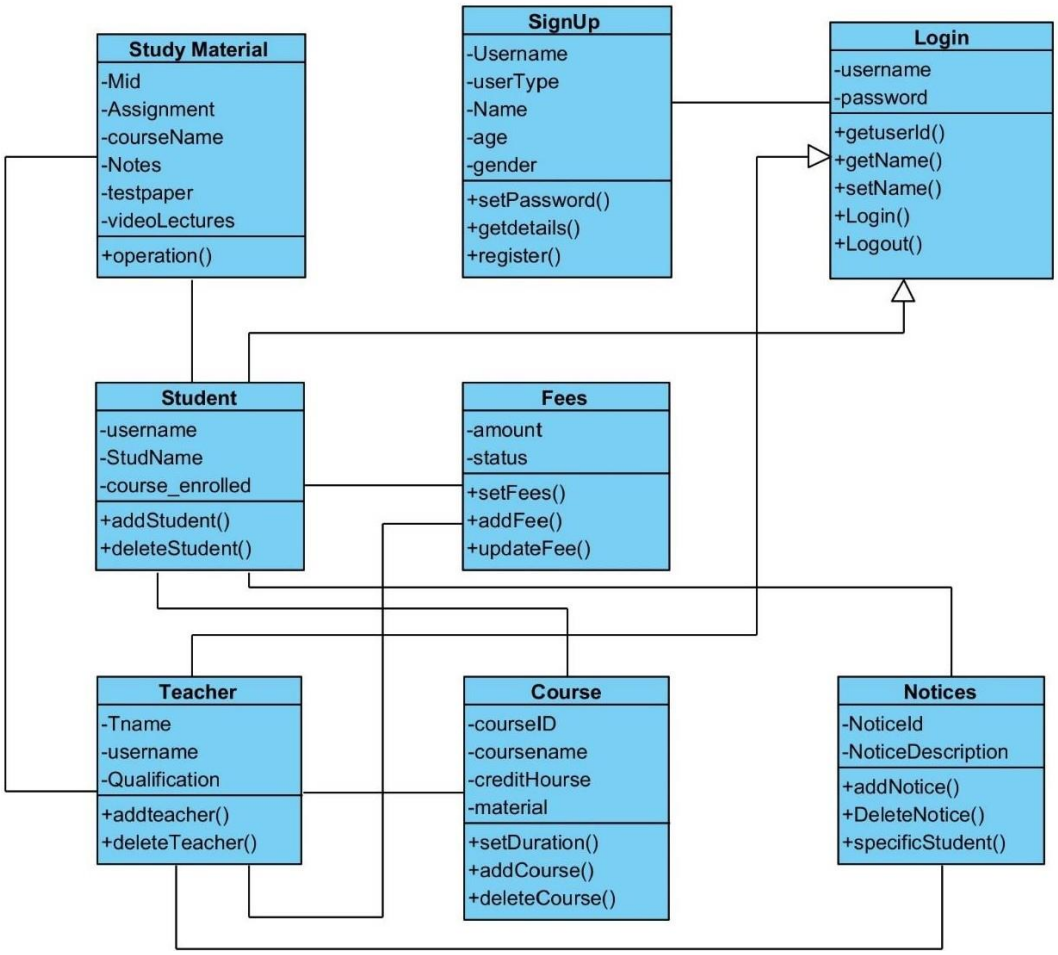
4.2. Domain Model



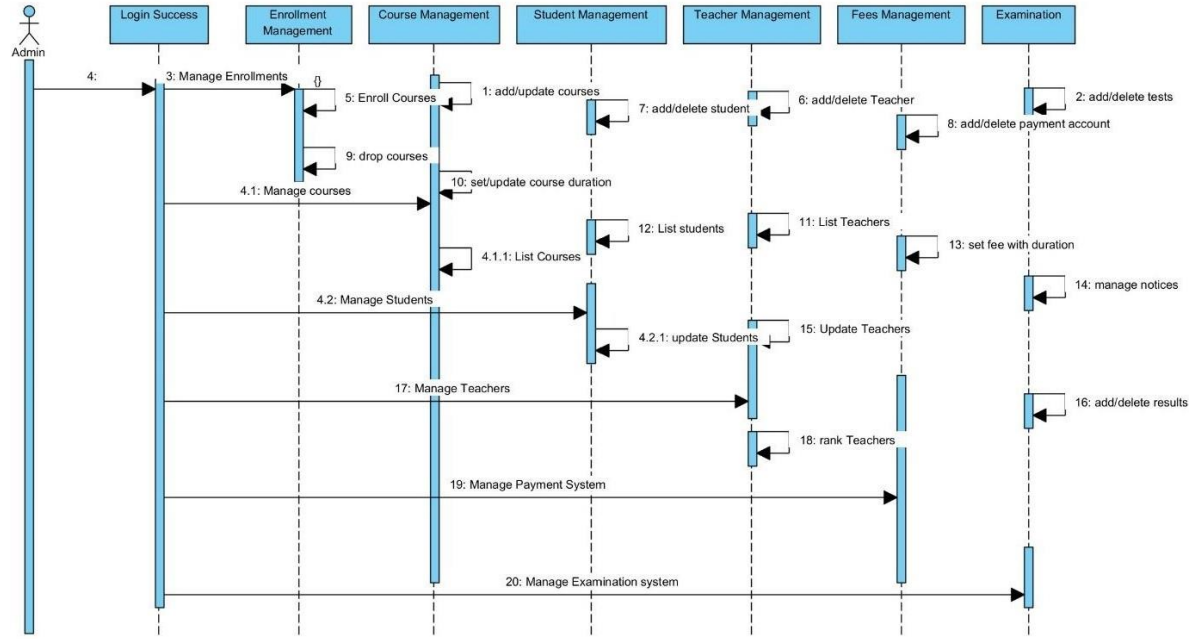
4.3. Entity Relationship Diagram with data dictionary



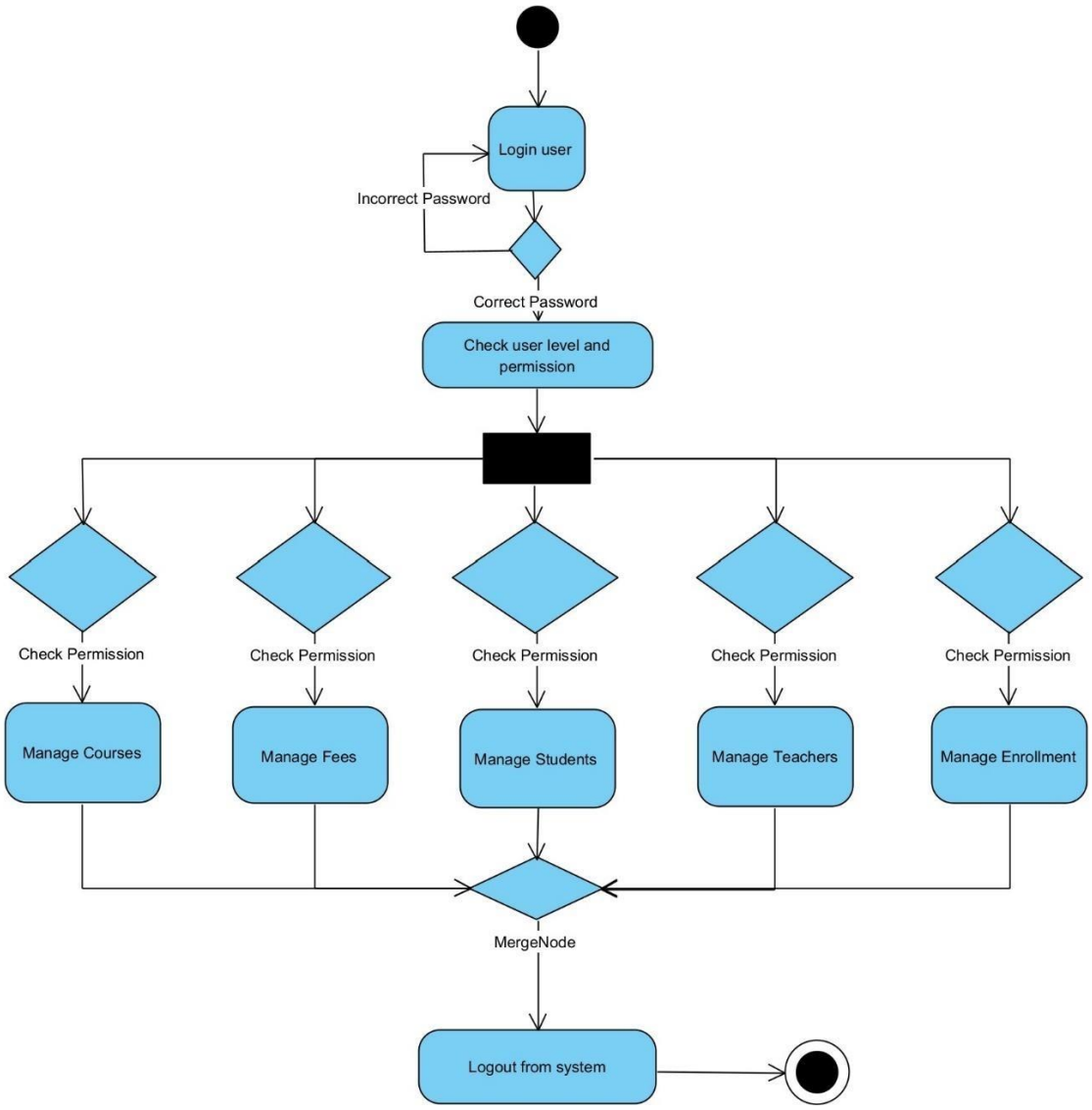
4.4. Class Diagram



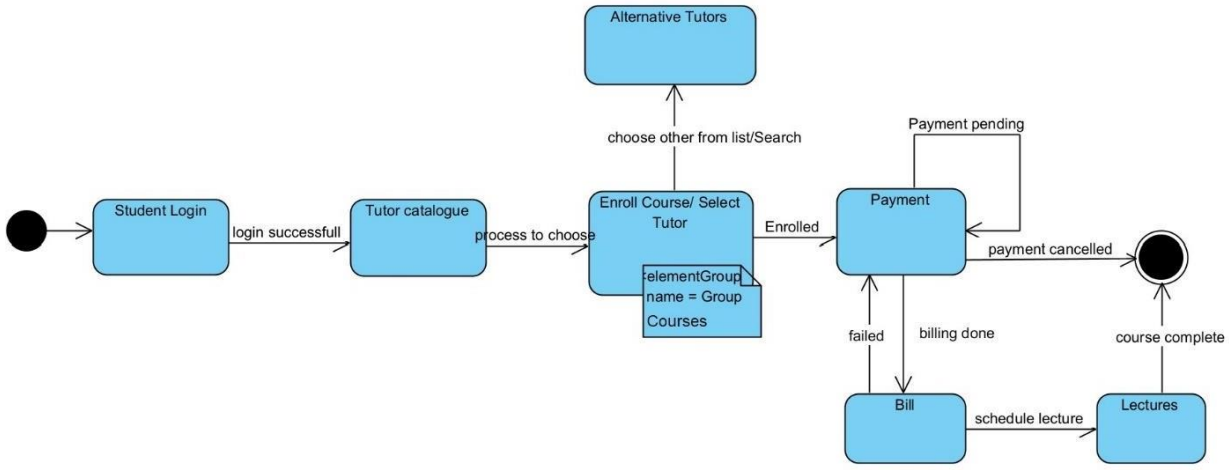
4.5. Sequence / Collaboration Diagram



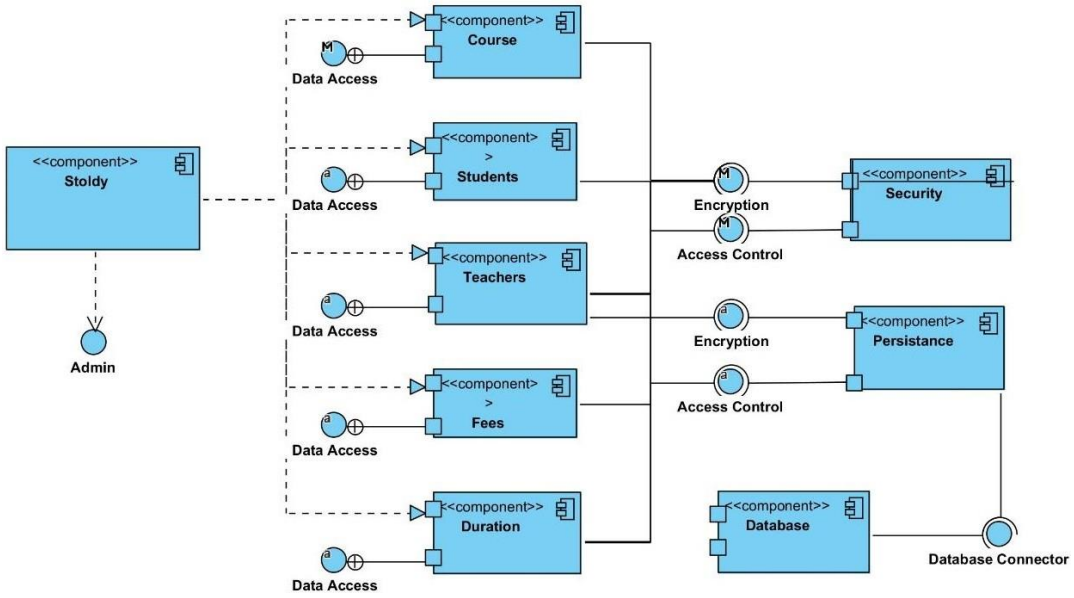
4.6. Activity Diagram



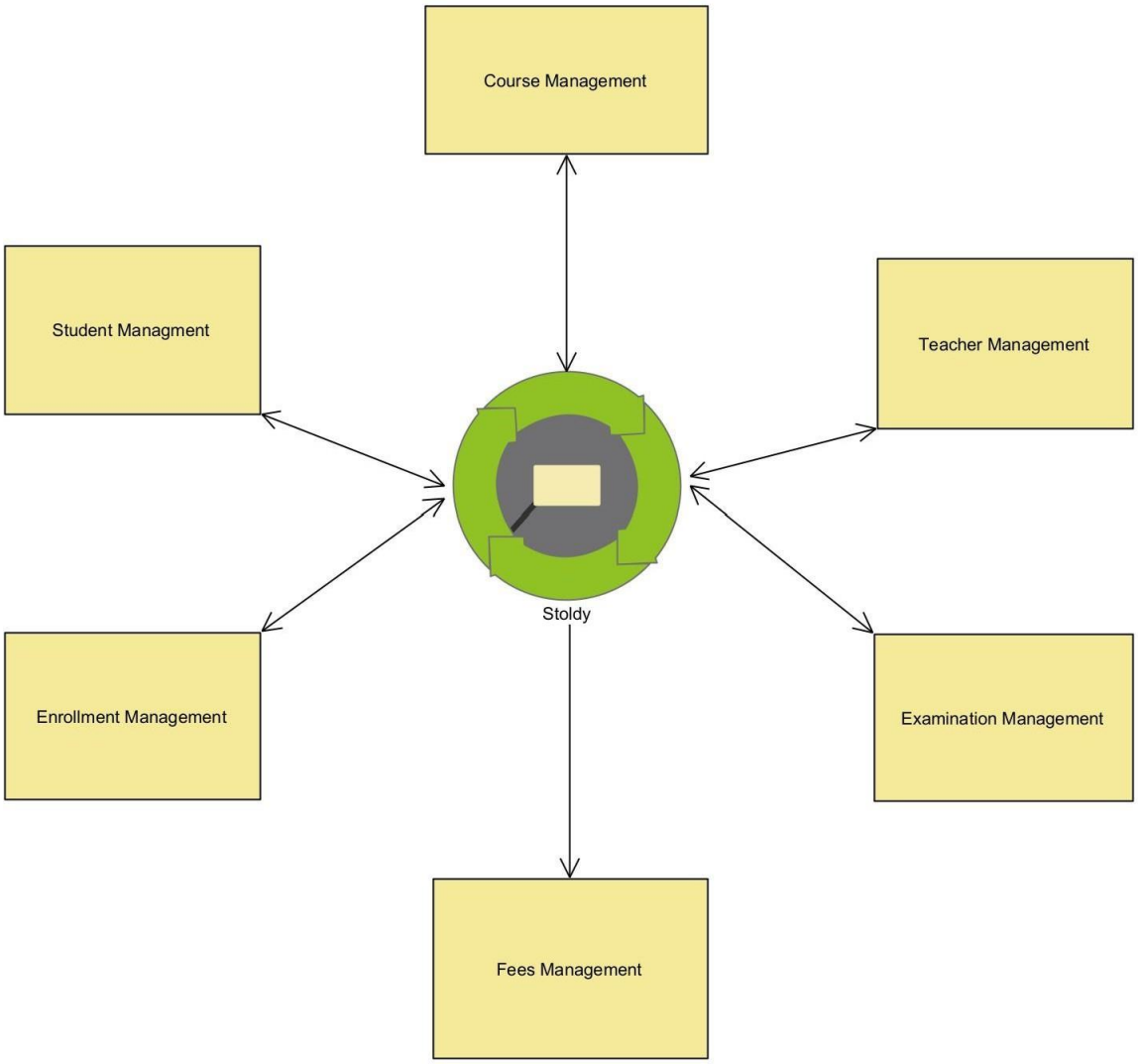
4.7. State Transition Diagram



4.8. Component Diagram



4.9. Data Flow diagram



Chapter 5
Implementation

Chapter 5: Implementation

5.1. Important Flow Control/Pseudo codes

There are three types of flow of control

- Sequential flow
- Selection or Conditional flow
- Iterative flow

Sequential Flow

Selection or Conditional Flow

Selection flow are of three types

- Single Alternative
- Double Alternative
- Multiple Alternative

Iterative Flow

Iterative flow is of three types

- for loop
- while loop
- do-while loop

Admin Flow Control for Stoldy:

- Admin logins to the system and manage all the functionalities of Course Registration System Admin can add, edit, delete and view the records of course, Syllabus, Trainers, Login
- Admin can manage all the details of Fees, Students, Registration
- Admin can also generate reports of Course, Fees, Syllabus, Students, Trainers, Registration
- Admin can search the details of Fees, Trainers, Registration
- Admin can apply different level of filters on report of Course, Students, Trainers
- Admin can tracks the detailed information of Fees, Syllabus, Students, , Trainers

5.2. Components, Libraries, Web Services and stubs

Django is a high-level Python web framework that encourages rapid development and clean, pragmatic design. Built by experienced developers, it takes care of much of the hassle of web development, so you can focus on writing your app without needing to reinvent the wheel. It's free and open source.

Ridiculously fast.

Reassuringly secure.

Exceedingly scalable.

Web Services:

- Django
- SHA 512

5.3. Deployment Environment

The development environment of Stoldy is a mobile application and a Website which is deployed at a local server, web server and Google play store. The backend system is deployed on domain godady.com and application is on play store. This System being web-based and an undertaking of Cyber Security Division, needs to be thoroughly tested to find out any security gaps.

5.4. Tools and Techniques

Python

Django

UIs

Android Studio

SDKs

Firebase

Secure Encryption

5.5. Best Practices / Coding Standards

Every organization has a custom coding standard for each type of software project. It is therefore imperative that the programmer chooses or makes up a particular set of coding guidelines before the software project commences. Some coding conventions are generic which may not apply for every software project written with a particular programming language.

The use of coding conventions is particularly important when a project involves more than one programmer (there have been projects with thousands of programmers). It is much easier for a programmer to read code written by someone else if all code follows the sameconventions.

5.6. Version Control

Our App and website versions will be handled and controlled with time by time for some bug fixes and new features.

The initial version will be Stoldy 1.0.

Chapter 6

Testing and Evaluation

Chapter 6: Testing and Evaluation

Designing interactive systems with graphic user interfaces is an important step in the development of mobile applications. It is important to understand customers' needs and preferences and to take them into account. In this regard, several online shopping and uber &cream systems rely on customer preference elicitation while others suggest products based on other customers recommendations. An evaluation and testing method is utilized to obtain user feedback on how effective the system is and how easy it is to use, compared to other systems.

6.1. Use Case Testing

Use Case Testing is defined as a software testing technique that helps identify test cases that cover the entire system, on a transaction by transaction basis from start to the finishing point. Use case Testing is type of black box testing where we check weather our app is working in predefined manner or not and performing intended functionalities and that helps testers to identify test scenarios that exercise the whole system on each transaction basis from start to finish. Use Cases capture the interactions between 'actors' and the 'system'. 'Actors' represents user and their interactions that each user takes part into. Test cases based on use cases and are referred as scenarios.

Test case no	Test case name	purpose	Pre-condition	Test steps	Expected result
01	Registration	To verify registration function	none	Enter user name password	Admin /user registration
02	Log in	To verify authorized admin/user	registration	Enter user name password	Admin/user logged in to the system
03	Add item	To verify add item	login	Item name, item prize	Add successfully
04	Updated item	To verify updated item	Add item	Select item click on update button Popped up dialogue box Want to updated data press yes	Updated successfully
05	Log out	To logout	Login	Can log out to the system and perform action	logout

6.2. Equivalence partitioning

There are an infinite number of models that can be derived from a Meta model, whereas the models with different values of attributes are considered as distinct models. For example, a Name attribute that is of type string may have infinite values and assigning each value for that name creates a different model. One of the problems in transformation testing is the difficulty of selecting a finite set of these models. We use equivalence partitioning for resolving this problem. Equivalence partitioning is a software technique that partitions the input space such that test cases can be derived from these partitions. The key idea of using this concept is that the elements that belongs to one partition are equivalent Class Partitioning is a black box technique (code is not visible to tester) which can be applied to all levels of testing like unit, integration, system, etc. In this technique, you divide the set of test condition into a partition that can be considered the same.

- It divides the input data of software into different equivalence data classes
- You can apply this technique, where there is a range in the input field

6.3. Data flow testing

Data flow testing is a family of test strategies based on selecting paths through the program's control flow in order to explore sequences of events related to the status of variables or data objects. Dataflow Testing focuses on the points at which variables receive values and the points at which these values are used.

- Data variables are defined, created and initialized, along with the allocation of the memory to that particular data object.

Declared data variables may be used in the programming code, in two forms

- As the part of the predicate(P), such as "If (A>B)"
- In the computational form(C), when the data items are involved in the calculations to Give some output.

Memory allocated to the variables, gets freed and is put into for some other use

6.4. Unit testing

Using Unit testing frameworks we write unit tests quickly and easily. Most of the programming languages do not support unit testing with the inbuilt compiler. Third party open source and commercial tools can be used to make unit testing even more fun.

List of famous unit testing tools are

C++ frame work, unit test++, google c++NET framework

	atomic	Uniquely identify	Complete	consistent	traceable	Prioritize	testable
Req 1	Yes	yes	Yes	yes	Yes	yes	Yes
Req 2	Yes	Yes	Yes	Yes	Yes	Yes	No
Req 3	Yes	Yes	Yes	Yes	No	Yes	Yes
Req 4	Yes	No	No	No	Yes	Yes	Yes
Req 5	Yes	Yes	No	Yes	Yes	Yes	Yes
Req 6	Yes	Yes	Yes	Yes	Yes	Yes	yes
Req 7	yes	No	yes	Yes	yes	Yes	yes

```
class EmailValidatorTest {
  @Test fun emailValidator_CorrectEmailSimple_ReturnsTrue() {
    assertTrue(EmailValidator.isValidEmail("name@email.com"))
  }

}
```

6.5. Integration testing

We feel that Integration testing is complex and requires some development and logical skill 6.6. That's true! Then what is the purpose of integrating this testing into our mobile App testing strategy?

- In the real world, when online mobile application is developed, it is broken down into smaller modules and individual developers are assigned 1 module. The logic implemented by one developer is quite different than another developer, so it becomes important to check whether the logic implemented by a developer is as per the expectations and depiction the correct value in accordance with the set standards.
- Travels from one Many a time the face or the structure of data changes when module to another. Some values are appended or removed, which causes issues in the later modules.
- A very common problem in testing frequent requirement change. Many a time developer deploys the changes without unit testing it. Integration testing becomes important at that time

Here we should understand that Integration testing does not happen at the end of the cycle, rather it is conducted simultaneously with the development. So in most of the times, all the modules are not actually available to test and here is what the challenge comes to test something which does not exist! The main function or goal of this testing is to test the interfaces between the units/modules.

6.6. Performance testing

Stores	Performance evaluation
Android 7	Absolutely great performance with no error and no crashing used at least 20 mins
Android 8	Absolutely great performance with no error and no crashing used at least 20 mins
Android 10	Good performance with some small bugs error and crashes few time.
Android 11	Most of the NFC Sensors does't work

6.7. Stress Testing

Stress testing is used to test the stability & reliability of the system. This test mainly determines the system on its robustness and error handling under extremely heavy load conditions. Most Prominent use of stress testing is to determine the limit, at which the system or software or hardware breaks. Stress testing executes a system in a manner that demands resources in abnormal quantity, frequency, or volume. Special tests may be designed that generate ten interrupts per second, when one or two is the average rate input data rates may be increased by an order of magnitude to determine how input functions will respond, Test cases that require maximum memory or other resources are executed, Test cases that may cause thrashing in a virtual operating system are designed, Test cases that may cause excessive hunting for disk resident data are created. Essentially, the tester attempts to break the program. Variation of stress testing is a technique called sensitivity testing

Chapter 7

Summary, Conclusion and Future Enhancements

Chapter 7: Summary, Conclusion & Future Enhancements

7.1. Project Summary

Stoldy is an online teaching and learning platform for students and tutors. The purpose of Stoldy is to automate the existing manual system by the help of computerized equipment's and full-fledged computer software, fulfilling their requirements.

The main objective for developing this Stoldy App is provide a user-friendly environment to provide knowledge and give everyone a chance to learn. Stoldy provides innovative courses directly to you. Take any class, any time you want, anywhere you want, with no additional software to download all you need is an internet connection. Study at your own pace and access your course when it is convenient for you. Stoldy can be helpful to all students to improve their knowledge. In Stoldy you will able to add student in a class, upload file, add Course, Department, Subject.

7.2. Achievements and Improvements

While doing this project we are successfully able to implement different type of functionalities of mobile-app programming and we are able to learn about the different terms in mobile programming so, we can be able to get job in our respective field. As well as during the development of this project we achieve skill to develop the mobile applications and improve the skills. We improve the development skill, Project management skill, documentation skills and programming skills also we are able to work in the team.

7.3. Critical Review

In the history of mobile application, This technology has provided a new interface linking businesses as well as individuals, and spanning many fields, from information systems to marketing, worldwide. The mobile application provide the easy way to perform different actions. It will make our life easier and make it profitable.

7.4. Lessons Learnt

While completing this project we have a lot of things. Let we divide these things into major activities.

- Programing: we have a lot of new techniques in we programming so, we can implement them easily which can help us to get some attractive jobs.
- Project management: We have learned how to manage a project and how to lead a project and complete the project successfully.
- Socially: We have learned how to deal people socially. So, we can sum-up there problems and give some ideas about that so, these people can survive in this society and can contribute in the development of great society

7.5. Future Enhancements/Recommendations

In future we are going to expand this application and bring new features in it and louche its version 2.0.