

# Project Proposal

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## 1. Introduction

### 1.1 Purpose of Document

This is a Requirements Specification document for a new web-based system for learning. The new system will enhance the quality of learning in discussion groups and assessment. This document describes the scope, objectives and goal of the system. In addition to describing non-functional requirements, this document models the functional requirements with use cases, interaction diagrams, and class models. This document is intended to direct the design and implementation of the target system.

### 1.2 Project Summary

- Project Name: Learnen
- Developers: Venkata Chiranjeevi Tarun Patibandla, Chandra Sai Teja Adhikarla, Bhanu Prakash Bhaskarla, Teja Sanjeev Chappati, Hariprasad Anuganti.
- Responsible Users: Students and Mentors.

### 1.3 Background

Online learning platforms have become increasingly important in recent years. These platforms offer a wide range of educational resources and services that allow individuals to learn at their own pace, from anywhere in the world.

The role of online learning platforms can be broken down into several key areas:

1. Education
2. Skill Development

3. Career Advancement
4. Accessibility
5. Flexibility

In conclusion, online learning platforms are playing a critical role in providing education and skill development opportunities to people globally and are helping to bridge the gap in access to education.

## **1.4 Project Scope**

The scope of this project is a web-based system that supports the discussion groups which is vast and can cover a variety of topics related to education and learning. These groups serve as virtual communities where students and mentors can come together to exchange ideas, collaborate on work, and provide support to one another.

Some common discussion topics in these groups may include course content, assignment feedback, study strategies, and industry trends. These groups can also be used to facilitate group work, peer-to-peer mentoring. Additionally, discussion groups can provide a space for students to ask questions, provide feedback to their teachers, and offer suggestions for improving the online learning experience.

## **1.5 System Purpose**

### **1.5.1 Users**

Those who will primarily benefit from the system and those who will be affected by the system include

1. Students: This platform offers flexible, convenient, and personalized learning groups. By taking advantage of these benefits, students can enhance their learning experience, achieve educational goals, and gain valuable skills and knowledge that can be applied to their personal and professional lives.
2. Mentor: Serving as facilitators, mentors and leaders in the virtual classroom. Mentor is responsible for designing and administering assessments that accurately measure student learning and progress.
3. Admin: To manage and oversee the technical, operational and administrative aspects of the platform. Responsible for managing and maintaining the platform, ensuring that it is accessible, secure and reliable.

### **1.5.2 Location**

The system will be available to any potential customer using the Internet. Students and Mentors may also use the system from any location and will be able to access restricted areas of the site through a password protection scheme.

### **1.5.3 Responsibilities**

The primary responsibilities of the system:

- Responsible for hosting and managing the discussion groups, assessments, and other resources. This includes ensuring that the content is up-to-date, accessible, and secure.
- Maintaining and updating the technology used to deliver the experience, including learning management systems, and other software systems.
- Providing support to students, mentors including answering questions, resolving technical issues, and providing resources to help users make the most of the platform.
- Responsible for ensuring that they comply with all applicable laws and regulations, including data privacy and security laws, accessibility requirements, and intellectual property laws.

### **1.5.4 Need**

With growing demand for education and the increasing need for flexible, accessible, and cost-effective educational options, online learning platforms are becoming an increasingly important tool for delivering quality education and supporting student success.

## **1.6 Overview of Document**

The rest of this document gives the detailed specifications for the website.

- Section 2: *Functional Objectives*

Each objective gives a desired behavior for the system, a business justification, and a measure to determine if the final system has successfully met the objective. These objectives are organized by priority. In order for the new system to be considered successful, all high priority objectives must be met.

- Section 3: *Non-Functional Objectives*

This section is organized by category. Each objective specifies a technical requirement or constraint on the overall characteristics of the system. Each objective is measurable.

- Section 4: *Context Model*

This section gives a text description of the goal of the system, and a pictorial description of the scope of the system in a context diagram.

- Section 5: *Use Case Model*

The specific behavioral requirements of the system are detailed in a series of use cases. Each use case accomplishes a task and shows the interaction between the system and some user. Each use case is described with both text and an interaction diagram. An interface prototype is also shown. The system use case diagram depicts the interactions between all use cases and system users.

- Section 6: An *appendix* containing a glossary that defines terms specific to this project.

## 2. Functional Objectives

### 2.1 High Priority:

- Study Rooms : Study rooms are collaborative spaces for productive study. These online study rooms are available to help with your motivation and make progress with your study. These study rooms can be accessed from anywhere with an internet connection and allow students to share information, work on projects, and communicate in real-time.
- Mentor for a Study Room: Each and every Study Room has an Mentor who is responsible for monitoring the current progress of their students. Mentors can conduct assessments and provide directions regarding course materials and outcomes.
- Mentor Verification : Mentors need to submit certificates to get permissions : After assessing a candidate's qualifications such as their experience of managing groups or their expertise in the subject matter, we choose individuals who have the skills, experience, and credibility to effectively manage and support the group.
- Syllabus Tracker : The ability to track and visualize progress of the syllabus over time, including grades, test scores, and other relevant metrics.
- Task Management: The ability to create and manage tasks, assign due dates, and track progress towards completion.
- View Profiles : Having the ability to view profiles in an online study room can help students get to know each other, build relationships, and foster a sense of community within the group

### 2.2 Medium Priority:

- Resource Sharing: The ability to store and share study materials, such as notes, presentations, and articles, with the group.
- Data Analytics: The ability to track and analyze study habits, such as time spent on specific subjects, and make data-driven decisions to improve study efficiency.
- Focus Mode: Chat will be disabled and timer will start to keep track of how long a student can focus while studying.
- Study Planner: The ability to schedule and plan study sessions, set reminders, and track time spent on different subjects.

## 2.3 Low Priority:

- Personalization: The ability for each member to personalize their individual study area within the group, such as customizing their dashboard or changing their profile picture
- Advanced Analytics: The ability to track and analyze advanced metrics, such as individual and group productivity and engagement levels, to identify areas for improvement.

# 3. Non-Functional Objectives

## 3.1 Reliability

- Data Accuracy: This website records and stores the data of the user accurately
- Consistent Performance: The application works consistently, without unexpected errors or crashes.
- User-friendly interface: This application has a user-friendly interface that is easy to use and navigate.

## 3.2 Usability

- A student should be able to use the system to join room and participate as per the ongoing directions and assessments.
- A mentor should be able to create a room and communicate with the students in the same to provide necessary directions and conduct assessments.

## 3.3 Performance

- This application loads quickly, even when many users are accessing it at the same time
- This application processes data efficiently, so that users can access their information quickly and easily
- This application is scalable, it can handle a large number of users and tasks without slowing down or crashing.

- This application is written in optimized code to minimize the resources it uses and improve its performance.

### **3.4 Security**

- The system provides password-protected access to web pages that are to be viewed only by employees.
- Transaction data is transmitted in encrypted form.
- user data is encrypted, both in transit and at rest, to protect it from unauthorized access and hacking.

### **3.5 Supportability**

- The system is able to accommodate new products and product lines without major reengineering.
- The system website is viewable from Internet Explorer 4.0 or later, Netscape Navigator/Communicator 3.0 or later, and the America Online web browser version 3.0 or later.

### **3.6 Online user Documentation and Help**

- This web application provides a web page that explains how to navigate the site. This page should be customized based on what pages the user is allowed to access.
- This help page should be accessible from all other pages.

### **3.7 Interfaces**

- The acquired website search engine.
- The current database systems for storing the users information and data.

## **4. The Context Model**

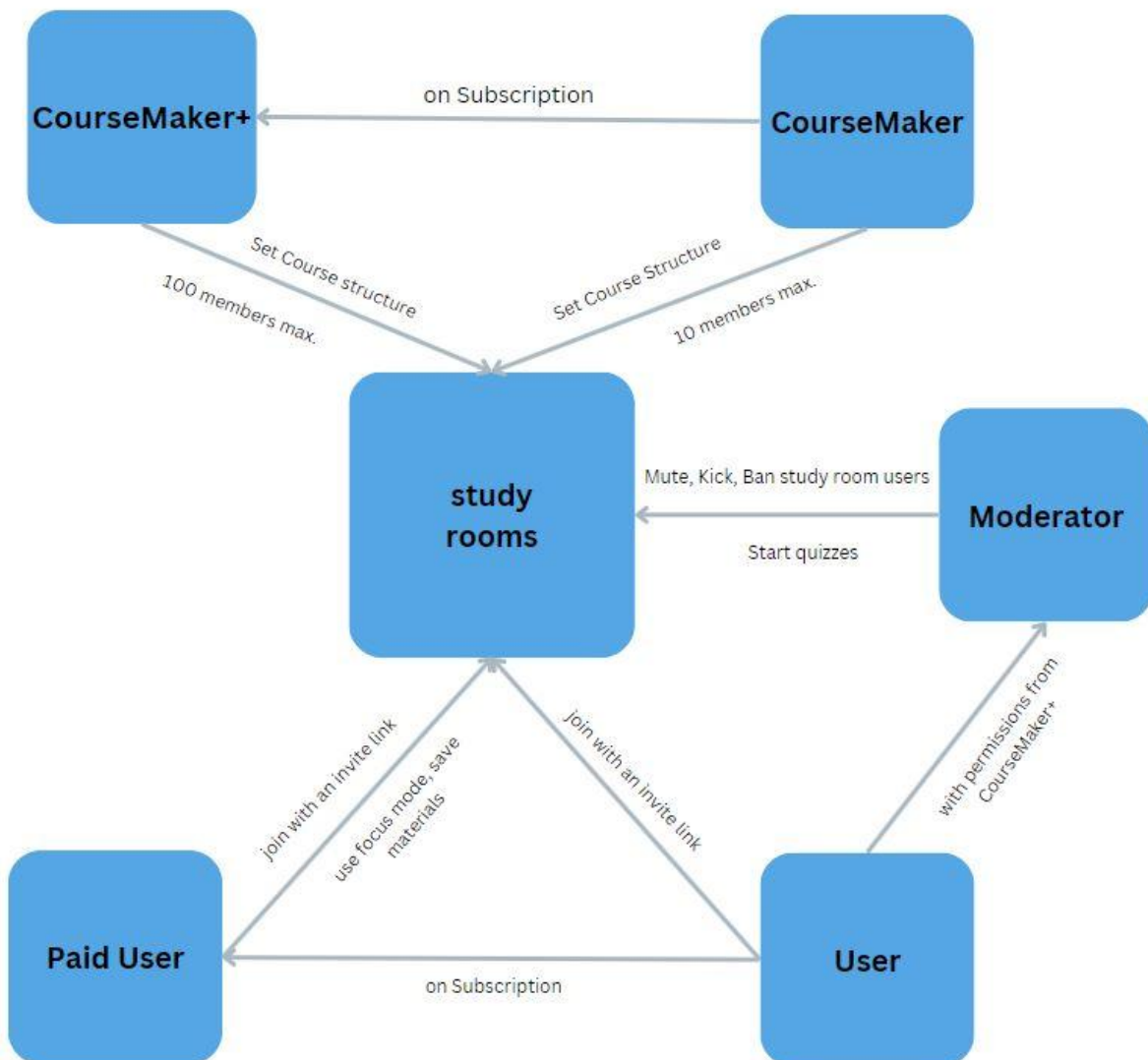
### **4.1 Goal Statement**

The main goals of the website are :

- Help teachers make their own courses / plans with ease.
- Especially help smaller scale teachers (tuition teachers or skilled people trying to reach out) start study rooms to track student progress
- Let students track their learning visually to bring a stronger feeling of progress.

- Help students talk to other like-minded students with similar goals for help in academics
- Make online classes easier to manage for the teachers.

## 4.2 Context Diagram



## 4.3 System Externals

- Default User / Customer :
  - Is able to join up to 10 study rooms, be able to chat in them, and track progress.
- Paid Default User :
  - Is able to use the focus mode feature

- join up to 20 study rooms at once
- Course Maker:
  - Is able to make 1 study room per application with 10 members
  - Is able to set the study material, progress milestones, etc. for each study room
  - Can set assignments, quizzes for those in his/her study room
- Paid course maker:
  - In addition to the course-maker permissions, a paid course maker:
  - Is able to make 1 study room per application with 100 members
  - Is able to give moderator permissions to members
- Moderator:
  - Is able to mute, ban members of the study group
  - Is able to set and start quizzes.

## 5. The Use Case Model

### 5.1 Use Case Descriptions (for selected cases)

Notes :

- For all use cases, the user can cancel the use case at any step that requires user input. This action ends the use case. Any data collected during that use case is lost.
- For all use cases that require a logged in user, the current login session is updated during the use case to reflect the navigation paths through the use case

#### Login User

Use Case Name :	Login User
Summary :	This use case outlines the steps required for a user to log into the application , providing access to their account and its associated features.
Basic Flow :	<ol style="list-style-type: none"> <li>1. The use case starts when a user indicates that he wants to login.</li> <li>2. The user is prompted to enter their email address and password.</li> <li>3. The user enters their email address and password and clicks on the "Login" button.</li> <li>4. The system verifies the user's credentials.</li> </ol>



	5. If the user's credentials are correct, the system grants access to the user's account and displays the main menu.
Alternative Flows :	Step 4 : If a user enters incorrect login information , an error message will be displayed and the user will be prompted to try again. Step 4 : In case if the user has forgotten their password , a “Forgot Password” link is available to initiate the password reset process .
Extension Points :	1. An extension point that allows the user to log in using their social media account like google .
Preconditions :	1. The user must have a pre-existing account on the Web Application. 2. The user must have an active internet connection.
Postconditions :	1. The user is logged into their account. 2. The user has full access to the features and functionality associated with their account.
Business Rules :	1. The user’s login session will time out after a period of inactivity for security purposes . 2. The user can log out of their account at any time . 3. The user’s login information will not be shared or sold to third parties . 4. Some data and functions are restricted to certain types of users or users with a particular access level .

## Register User

Use Case Name :	Register User
Summary :	This use case outlines the steps required for a new user to create an account on the Web Application.

Basic Flow :	<ol style="list-style-type: none"> <li>1. The use case starts when a user indicates that he wants to register.</li> <li>2. The system requests an email address and password .</li> <li>3. The user enters their email address , password .</li> <li>4. The user reviews the information they have entered and confirms it is correct .</li> <li>5. The user clicks the “Submit” button to send their registration information to the system.</li> <li>6. The system validates the information provided by the user , checking for missing fields , invalid email addresses and any other issues .</li> <li>7. If the information is valid , the system creates a new user account and sends a registration successful email to the user’s email address .</li> <li>8. The system starts the login session .</li> </ol>
Alternative Flows :	<ol style="list-style-type: none"> <li>1. If the user fails to enter all the required information into the registration form , the system will prompt them to complete the missing fields before proceeding .</li> <li>2. If the user enters an invalid email address , the system will notify them and ask them to enter a valid email address .</li> <li>3. If the user’s password does not meet the specified requirements , the system will prompt them to enter a password that meets the requirements .</li> <li>4. If a user enters an email address that is already registered , the system will notify them to login or use a different email address .</li> </ol>
Extension Points :	<i>Manage User Profile</i>
Preconditions :	<ol style="list-style-type: none"> <li>1. The user must have a valid email address to create an account .</li> </ol>
Postcondition :	A new user account has been created in the system , linked to the user’s email address
Business Rules :	<ol style="list-style-type: none"> <li>1. The system must store user information securely and protect it from unauthorized access.</li> <li>2. The system must have a clear privacy policy outlining how user information will be used and protected.</li> </ol>

## Manage User Profile

Use Case Name :	Manage User Profile
Summary :	The user can create and manage their profile in the web application , including updating their profile picture , name and other details . The user's progress in the study rooms and the skills obtained will also be automatically tracked and updated in their profile .
Basic Flow :	<ol style="list-style-type: none"><li>1. The user accesses the profile management page from the main dashboard.</li><li>2. The system displays the user's current profile information , including their name , profile picture and the concepts they have learned , if given earlier.</li><li>3. The user can update their profile picture , name and other details.</li><li>4. The user submits their updates .</li><li>5. The system saves the updated information to the user's profile .</li><li>6. The user completes a study room session and the skills that the user earned are automatically updated in their profile .</li><li>7. The user can view their basic profile information , including the skills they earned and progress in the study rooms .</li></ol>
Alternative Flows :	<ol style="list-style-type: none"><li>1. If the user enters invalid information while updating their profile , the system will display an error message and prompt the user to correct the information .</li><li>2. If the system encounters an error while saving the user's updates , the system will display an error message and prompt the user to try again later .</li></ol>
Extension Points :	<i>None</i>
Preconditions :	<ol style="list-style-type: none"><li>1. The user has created an account in the web application .</li><li>2. The user is logged into their account .</li></ol>
Postcondition :	<ol style="list-style-type: none"><li>1. The user's profile information is updated and accurate</li><li>2. The user can access their profile information at any time and update it as needed .</li></ol>

Business Rules :	<ol style="list-style-type: none"> <li>1. The user's profile picture must be in a supported format .</li> <li>2. The user must provide accurate and up-to-date information in their profile .</li> <li>3. The user must be logged into their account to access and update their profile information.</li> <li>4. The user must be able to view and update all information in their profile , except for their email address , which can only be updated by the system administrator .</li> <li>5. The user's profile information will be protected and kept confidential , according to the web app's privacy policy.</li> </ol>
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## Join Room

Use Case Name :	Join Room
Summary :	The user selects a room to join and is able to participate in the study session with their mentor and other students .
Basic Flow :	<ol style="list-style-type: none"> <li>1. The user selects a room to join from the list of available rooms .</li> <li>2. The system checks if the room is available and open for joining .</li> <li>3. If the room is available , the user is able to join the room and participate in the study session .</li> </ol>
Alternative Flows :	<ol style="list-style-type: none"> <li>1. If the room is full or closed , the user is unable to join the room and is notified with an error message .</li> <li>2. If the user has reached their maximum number of room join limit, they are unable to join another room and are notified with an error message .</li> <li>3. If the user is not logged in , they are unable to join a room and are prompted to log in.</li> </ol>
Extension Points :	<i>None</i>
Preconditions :	<ol style="list-style-type: none"> <li>1. The user is logged in to the web application .</li> <li>2. The room the user is attempting to join is open and available for joining .</li> <li>3. The user's room join limit shouldn't reach its maximum .</li> </ol>

Postcondition :	<ol style="list-style-type: none"> <li>1. The user is successfully joined to the room and is able to participate in the study session .</li> <li>2. The users progress in the room and the skills they have acquired are tracked and updated in their profile .</li> </ol>
Business Rules :	<ol style="list-style-type: none"> <li>1. The user must be logged in to join or view the room joined .</li> <li>2. The user must follow the code of conduct established for the virtual study rooms .</li> </ol>

## Leave Room

Use Case Name :	Leave Room
Summary :	The use case allows a user to exit from a room in the web application .
Basic Flow :	<ol style="list-style-type: none"> <li>1. The user selects the option to leave the current room .</li> <li>2. The system confirms the user's request to leave the room .</li> <li>3. The system removes the user from the room .</li> </ol>
Alternative Flows :	None
Extension Points :	<i>Provide Feedback</i>
Preconditions :	<ol style="list-style-type: none"> <li>1. The user is logged in to the web application .</li> <li>2. The user must be a member of the room they want to leave .</li> </ol>
Postcondition :	<ol style="list-style-type: none"> <li>1. The user is no longer a member of the room .</li> <li>2. The user's room history is updated to reflect their departure from the room .</li> </ol>
Business Rules :	<ol style="list-style-type: none"> <li>1. The user is only allowed to leave a room they are currently a member of .</li> <li>2. The user is responsible for saving any important information or notes before leaving a room .</li> </ol>

	3. The user must follow the web application's terms of service when leaving a room , such as not being disruptive .
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## Provide Feedback

Use Case Name :	Provide Feedback
Summary :	The use case describes the process of a user providing feedback for the mentor of the room or course in this web application .
Basic Flow :	<ol style="list-style-type: none"> <li>1. User logs into the web application .</li> <li>2. User selects the room they want to provide feedback for .</li> <li>3. The user accesses the feedback form within the room .</li> <li>4. User fills out the feedback form , including ratings , comments and suggestions and additional queries .</li> <li>5. User submits the feedback form.</li> </ol>
Alternative Flows :	<ol style="list-style-type: none"> <li>1. If the user does not fill out all the required fields in the feedback form , they are notified and asked to complete the form before submitting .</li> <li>2. If there are errors in the form submission , the user is notified and asked to correct the errors before submitting .</li> </ol>
Extension Points :	<ol style="list-style-type: none"> <li>1. The user has the option to provide feedback anonymously .</li> </ol>
Preconditions :	<ol style="list-style-type: none"> <li>1. The user must have an account and be logged into the app .</li> <li>2. The user must have participated in the room for which they are providing feedback .</li> </ol>
Postcondition :	<ol style="list-style-type: none"> <li>1. Feedback is used for self improvement of mentors and courses .</li> </ol>
Business Rules :	<ol style="list-style-type: none"> <li>1. Feedback must be respectful and appropriate .</li> <li>2. Feedback should not contain confidential or sensitive information .</li> <li>3. Feedback should not violate the app's terms of service .</li> </ol>

## Chat Communication

Use Case Name :	Chat Communication
Summary :	This use case describes the functionality for the users of a room in the application to participate in group chats with mentors and fellow students.
Basic Flow :	<ol style="list-style-type: none"><li>1. User logs into the virtual study room web app.</li><li>2. User navigates to the chat room for a specific study session.</li><li>3. User types a message and clicks the send button.</li><li>4. The message is displayed in the chat room for all users to see.</li><li>5. Repeat steps 3 and 4 for continued chatting.</li></ol>
Alternative Flows :	<ol style="list-style-type: none"><li>1. If the user is not logged in, they are prompted to log in before accessing the chat room.</li><li>2. If the user is in a different room, they must navigate to the correct room before participating in the chat.</li></ol>
Extension Points :	<ol style="list-style-type: none"><li>1. The ability for users to send private messages to other users in the chat room.</li></ol>
Preconditions :	<ol style="list-style-type: none"><li>1. The user must have a registered account on the virtual study room web app.</li><li>2. The user must have access to the internet.</li></ol>
Postcondition :	<ol style="list-style-type: none"><li>1. The user has successfully participated in the group chat with other users in the room.</li><li>2. The user has the ability to review previous messages in the chat room.</li></ol>
Business Rules :	<ol style="list-style-type: none"><li>1. The user must follow the community guidelines while participating in the chat.</li><li>2. Messages containing inappropriate or offensive content will be removed by the moderators.</li></ol>

## Seek Help from Administrator

Use Case Name :	Seek Help from the Administrator .
Summary :	This use case enables the users to request assistance from an administrator when they face any technical issues or have questions regarding the usage of the web application .
Basic Flow :	<ol style="list-style-type: none"><li>1. The user selects the "Request Assistance" option from the menu or dashboard</li><li>2. The user inputs a brief description of their issue or question</li><li>3. The request is submitted to the administrator</li><li>4. The administrator receives the request and provides an appropriate solution to the user's issue or answer to their question.</li><li>5. The user is notified of the solution/answer provided by the administrator.</li></ol>
Alternative Flows :	<ol style="list-style-type: none"><li>1. In case the administrator is not available, the request is queued for later attention.</li><li>2. The user can choose to cancel the request before it is submitted to the administrator.</li></ol>
Extension Points :	<ol style="list-style-type: none"><li>1. The user can provide additional information or attachments to support their request.</li></ol>
Preconditions :	<ol style="list-style-type: none"><li>1. The user must have an active account and be logged into the study room chat web app.</li></ol>
Postcondition :	<ol style="list-style-type: none"><li>1. The user's issue is resolved or their question is answered.</li><li>2. The administrator receives the request for assistance and provides an appropriate solution/answer.</li></ol>
Business Rules :	<ol style="list-style-type: none"><li>1. The user can only request assistance once every 24 hours.</li><li>2. The user must provide a clear and concise description of their issue or question.</li></ol>



	3. The administrator must respond to the request within a reasonable time frame.
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### Hosting a quiz by Mentor

Use Case Name :	Hosting a quiz by Mentor.
Summary :	A mentor in the study room initiates a quiz to access the knowledge of students .
Basic Flow :	<ol style="list-style-type: none"> <li>1. Mentor selects the option to host a quiz in the current room .</li> <li>2. Mentor selects the questions and answers to the quiz .</li> <li>3. Mentor starts the quiz .</li> <li>4. Students respond to the quiz questions .</li> <li>5. Mentor stops the quiz and reviews the answers from the students .</li> </ol>
Alternative Flows :	<ol style="list-style-type: none"> <li>1. Mentor cancels the quiz before it starts .</li> <li>2. Mentor closes the quiz before all students have responded .</li> <li>3. Mentor is unable to start the quiz due to technical issues .</li> </ol>
Extension Points :	<ol style="list-style-type: none"> <li>1. Option to randomize the order of questions .</li> <li>2. Option to set a time limit for the quiz.</li> <li>3. Option to add images to the quiz questions .</li> </ol>
Preconditions :	<ol style="list-style-type: none"> <li>1. Mentor must be in the study room with at least one student .</li> </ol>
Postcondition :	<ol style="list-style-type: none"> <li>1. Quiz results are recorded and available for the review by the mentor and students .</li> <li>2. Students have received feedback on their performance in the quiz .</li> </ol>
Business Rules :	<ol style="list-style-type: none"> <li>1. Mentors must abide by the terms and conditions of the web application regarding the conduct of quizzes .</li> <li>2. The mentor must have a minimum of one question in the quiz.</li> <li>3. The quiz must have a unique name .</li> </ol>

	4. The quiz results cannot be altered after the quiz has ended .
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## 6. Appendix

### **Glossary**

#### **Lernen**

Lernen in German means “Learning”.