Master Team Project WiSe 2021

Fuldemy – Your learning help

Team 02

Dated: 23/11/2021

Team:

1. Kritika Murugan – Team Lead, GitHub Master

2. Debarati Ray – Backend Dev

3. Dipesh Chaudhary – Frontend Lead

4. Abu Sadat Md. Soyam – QA Lead

5. Syed Naqi Raza Bukhari - Backend Lead

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Task	Task/Feedback	Date Submitted	Date Revised

Executive Summary

Pupils often require help and guidance, in addition to lectures and tutorials in the University, from mentors who are experienced and knowledgeable. A new tutorial platform for Hochschule Fulda can help students attain a mutually beneficial relationship. Those students who require help can use the platform to learn and further their knowledge and skills. Skilful students in a specific field can share their expertise with students who are eager to learn and engage in thought experiments to widen their understanding and knowledge. This symbiotic relationship can build a stronger academic community in HS Fulda. Moreover, students often lack financial stability. This provides another opportunity for proficient students to earn money while still contributing to academia.

Our goal is to create a tutorial website accessed by students, faculty, administration, and alumni of HS Fulda. Students would have the option to tutor or receive tutorials, face-to-face or online. This flexibility is especially important given the last two years of the pandemic-affected world. However, the pricing of these facilities should be competitive, fair, and accessible for students who are often on tight budgets. Free demo sessions can be provided for trial, and discounted subscriptions can be introduced. Would-be teachers can also have a practice session with long-term students and can be judged by the students. Based on the reviews, the teacher can be hired. To maintain quality, students can rate teachers and the highest-rated teachers can be given a bonus. A review system can be built, to guide the website developers and tutors on what works well, and what needs to be fixed. It would provide students with a platform to post requirements of tutors for a specific skill set, thereby providing an overview of demand. A Tutorial Support System will be active for both students and tutors in need of help. This can support students who might require tutoring urgently, to meet deadlines or to prepare for examinations. It will also provide 12/5 support to learners who might need immediate assistance from tutors as a Flexi-tutoring plan.

Fuldemy team is our brand-new team of technical experts who have wide experience in building websites across multiple domains. We have done thorough market research for our proposed plan, and we believe this project would bring an immense influx of students to our website due to high market demand. Our learning platform will cater immense support to the students and this model can be extrapolated and implemented for other Universities as well. We estimate that funding this project would bring a high return on investments and add value to the academic community.

Personae and main Use Cases

The following summarizes the two main types of personae and describes the main use cases of Fuldemy application

- **<u>Student (Learner)</u>**
  Header
  > Name: Peter John
  > Summary quote: "Wanted to take tuition in those subjects in which he
  > feels that he is not able to catch up"

  General Characteristics

Personal Background

- Age: 25
- Gender: Male
- Marital Status: Married
- University: Hochschule Fulda
- Course: GDSD
- Education: Master

User Environment

- **Most of the time:** Busy with job and family
- **Devices:** Laptop

Psychographics

- Peter wanted to invest less time in revising concepts related to one course
- He wanted to get an expert opinion on perplexing topics in a course
- He wanted to get hands-on experience along with learning the concepts

Pain Points

- It is difficult to grasp the concepts taught in class and cover it all by himself after school hours
- It is cumbersome to find the right resources for a stubborn topic on the internet when preparing for exams
- A lack of guidance throughout the course is like finding his path through darkness

End Goal(s)

Goals	Motivators
To clear the concepts	To learn from an expert which solves queries regarding a particular topic in a course
To invest the least time on learning a new concept	To spend the least time possible in learning a new concept
To solve practice questions	To solve exercises in preparation for exams and discuss the solutions with an expert

Scenario

I am married and am parallelly working and studying. At times, it is difficult to make time for studies let alone search for the appropriate resources over the internet for perplexing topics. Even if I do find them, I still have never-ending queries in my mind. Hence, an affordably one-to-one tutoring service that would save me time would be indispensable. Having an expert opinion on certain ambiguous topics would be paramount in my learning.

- **Tutor (Expert in a specific field)**

Header

Name: Alexander Mark

Summary quote: "I would love to offer private tutoring sessions to struggling students while earning some bucks"

Demographic Information

Personal Background

- Age: 27
- Gender: Male
- Marital Status: Single
- University: Hochschule Fulda
- Education: Master's in computer science

Professional Background

Job: Full-time job as a Machine Learning researcher in Hochschule Fulda

User Environment

- **Most of the time:** At work
- **Devices:** Laptops

Psychographics

- Alexander wanted to earn some extra money while providing online tutoring
- He has extra time in the office in which he wanted to do something productive

Pain Point

- Alexander is unable to find a suitable website which provides tutoring services on school or regional level
- In in available tutoring services, the competition is very high, and it is fruitless to attract students or customers
- Alexander needs a platform at the university level

End Goal(s)

Goals	Motivators
To earn extra money	To give lectures to students in his free time during the office, and to earn extra money

Scenario

Alexander is an expert in Machine Learning, and he knows exactly how a beginner struggles in this subject. Since he knows the basics very well and he has enough time in his office hours, he wants to extend his love of teaching and earn some extra money as a bonus. He is interested in giving personal sessions to students of Hochschule Fulda who are struggling in this course.

Use Cases
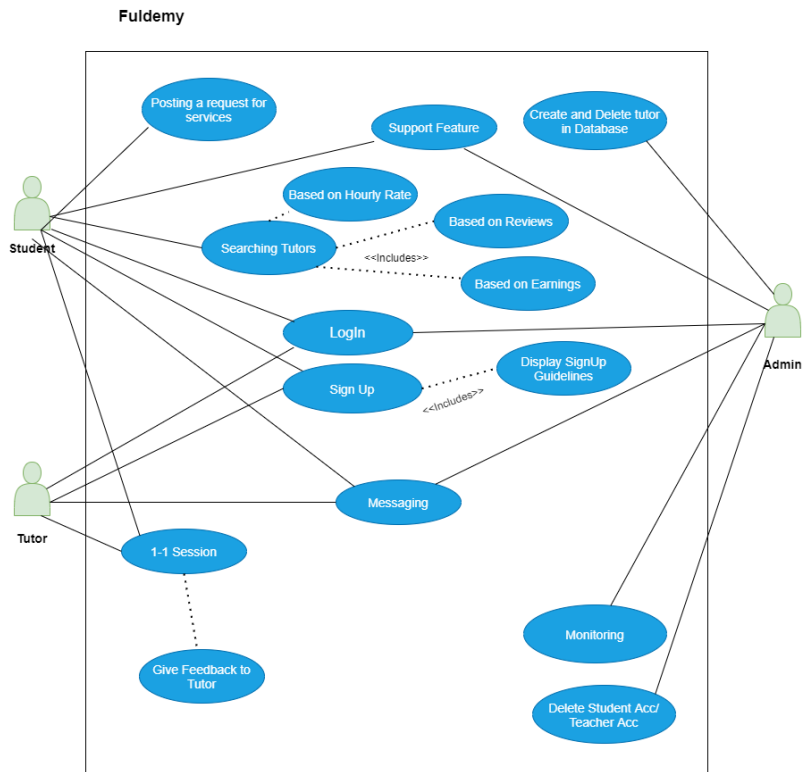
Use Case Diagram

List of use cases

- Login
- Sign Up
- Searching Tutors
- Search based on Views
- Search based on Earnings
- Search based on the hourly rate
- Posting a request by a student
- Display guidelines for Sign Up Process
- Request tutoring Services
- One-to-one Session between Student and Tutor
- Give Feedback
- Support feature for student
- Create profile
- Delete profile
- Monitoring
- Messaging between Student and Tutor

Main Use Cases

- **Support Feature**
Students can benefit from the Support Feature which will be available from 8 am to 8 pm. If the students' desired teacher is not available at any moment, they can send the request to support staff which will answer the query at the earliest. In this way, the students need not wait for their tutor to log in and answer the query, especially when time is a concern

- **Give Feedback**

  Students can give feedback to their respective teacher/tutor from whom they avail assistance. This feedback helps other students to pick tutors. This is the main tool for maintaining the quality of tutoring services offered on the website

- **Post a request for tutoring**

  They can choose a specific subject in which they need help and post a request on the platform. This request will be live once the admin approves it. This is necessary to ensure that students do not post inappropriate or duplicate content.

- **Messaging**
The in-site messaging tool facilitates the interaction between students and tutors without the need for third party tools. The conversation will be saved and visible at any time.

List of main data items and entities

Entity List	Purpose of the Entity	Data Structure
Students	This entity will be used for keeping all attributes of the students who will register to the website for learning and growth.	Table
Tutors	This entity will be used for keeping all attributes of the tutors who will register to the website for giving guidance and tutorials.	Table
Admins	This entity will be used to keep track of the admin related attributes and other details.	Table
Skills	This entity will be used to keep information about all the subjects that will be taught by tutors and related attributes to it	Table
Active_Classes	This entity will be used to keep track of ongoing classes linking student, tutors, skills and the admin monitoring it.	Table
Inactive_Classes	This entity will be used to keep track of historical classes linking students, tutors, skills and the admin monitoring it.	Table
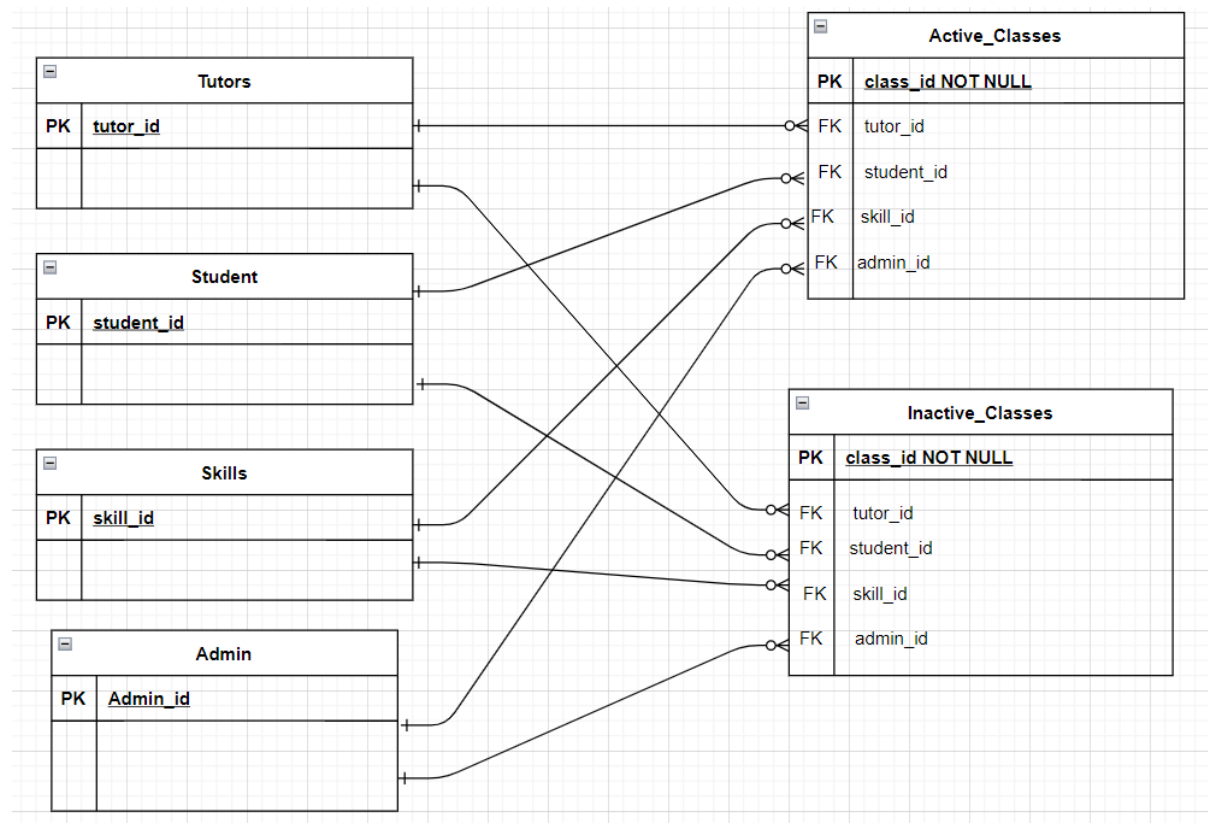
Initial list of functional requirements

1. Sign up
    a. Both tutors and students must register with the below specific domains
        i. hs-fulda.de
2. Login
    a. Separate login pages for students and tutors
    b. If there is a student who is also a tutor, then a toggle button will be provided
3. Searching tutors based on their skill level
    a. Tutors can rate themselves as beginner, intermediate or expert
4. Platform to connect
    a. An interactive user interface for both tutors and student
    b. The foundation of the application
5. Chatting
    a. Students can send direct messages to tutors and vice versa
6. Connecting tutors and students based on skill
    a. Only those tutors whose skills match the ones selected by the students
7. Posting the exact requirement by the student for a skillset
    a. A public post made by the student stating their exact requirements or a brief description of the concepts that are not clear to them
8. Support functionality

a. A tutor from all areas will be present to support the students from 9am to 5pm, Monday to Friday and can reply to students that face difficulties
   b. The "support tutor" is not the student's assigned teacher
9. First lesson is free
   a. At sign up, the student can claim one free lesson
10. Ranking tutors
    a. Tutors are ranked based on the feedback given by students
    b. This ranking can help the students find more experienced teachers
    c. A higher ranking would also help the tutors advance in their careers
11. Timetable for tutors
    a. Helpful in making time for admins, tutors, and students
12. Review the tutor
    a. Students can review the tutor based on their experience with the lessons
13. Students can filter tutors based on reviews
    a. Students can select the tutors that are suited to them based on the reviews of other students
    b. The qualities of a tutor disliked by one student, may be acceptable for another
14. Students can filter tutors based on their hourly rate
    a. If students are on a tight budget, this would be a useful feature
    b. A tutor who offers courses at a lower price does not necessarily mean that they are not skilled. There may be experts who also have a big heart
15. Grievances and Feedback
    a. No system is perfect. Any issues that the students may face will never go unheard.
    b. The students can log their issues and it will be resolved at the earliest by the admin in the form of a ticketing system
16. Total number of successful interactions
    a. Added to the profiles of both tutors and students
    b. This is also visible to the admin
17. Total earnings
    a. The total amount of money earned (in Euros) by the tutors
    b. This is only visible to the respective tutors and admins
18. Promotional emails, blogs, and newsletter
    a. A simple way to put the platform out there and attract the masses
19. Unsubscribe functionality
    a. When someone is tired of spam, they can easily unsubscribe
    b. A reason is collected for the improvement of the content of the emails
    c. This reason is manually analysed by the admin and used for content writing of future emails
20. Contact form for potential tutors
    a. A potential tutor can fill up the contact form which can be viewed by the admin
    b. The admin then contacts the potential tutor with the contact information provided

21. Bug and error reporting page
    a. Opens a simple form page where the user can send a screenshot and a basic description of the bug

List of non-functional requirements

1. Availability: Services should be available for use to users 99% of the time

2. Usability: User interface should be self-explanatory, and users should not have an issue in navigating their way through the application

3. Performance: The application must take the least amount of time to load and respond to the users' requests

4. Expected load: The application should perform as expected under high workload

5. Security requirements: Privacy and authentication of data should be ensured for everybody involved in the use and maintenance of the application

6. Fault tolerance: The application should continue operating without interruption if one or more components fails.

7. Maintainability: The application components must be fixed in the least amount of time in case of any reported issues

8. Manageability: The admin should be able to easily manage the application without requiring too many privileges

9. Storage: Data should be available, consistent, persistent, safe, and secure always. Transactions must be completed before being committed or the whole operation must be rolled back
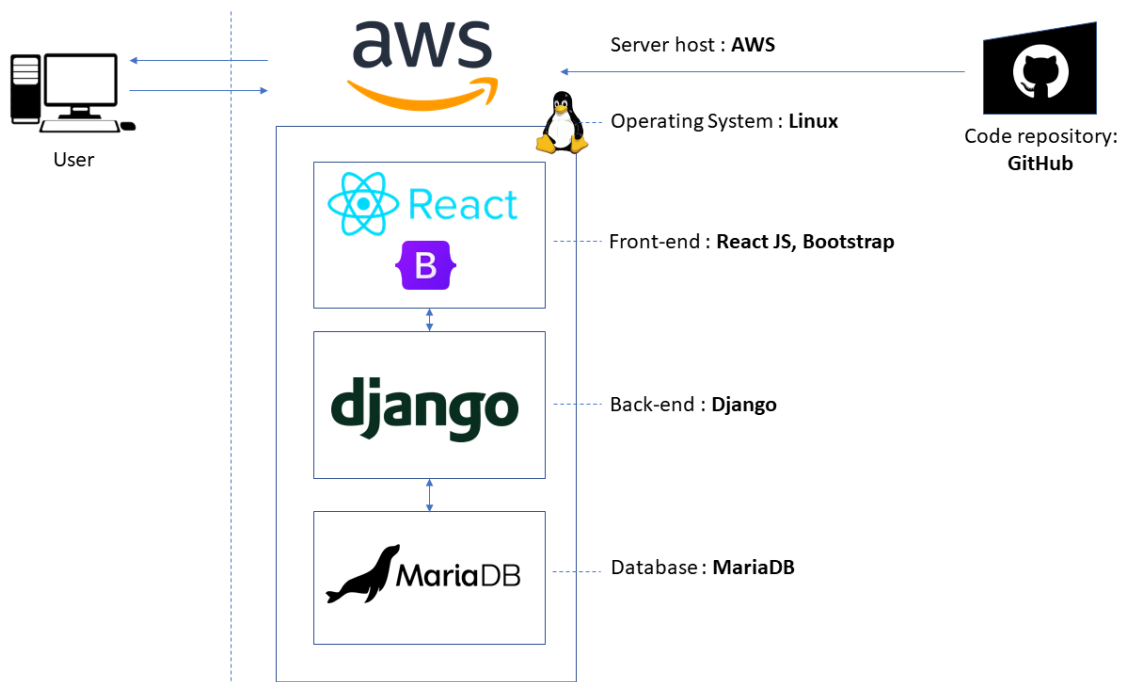
Competitive analysis

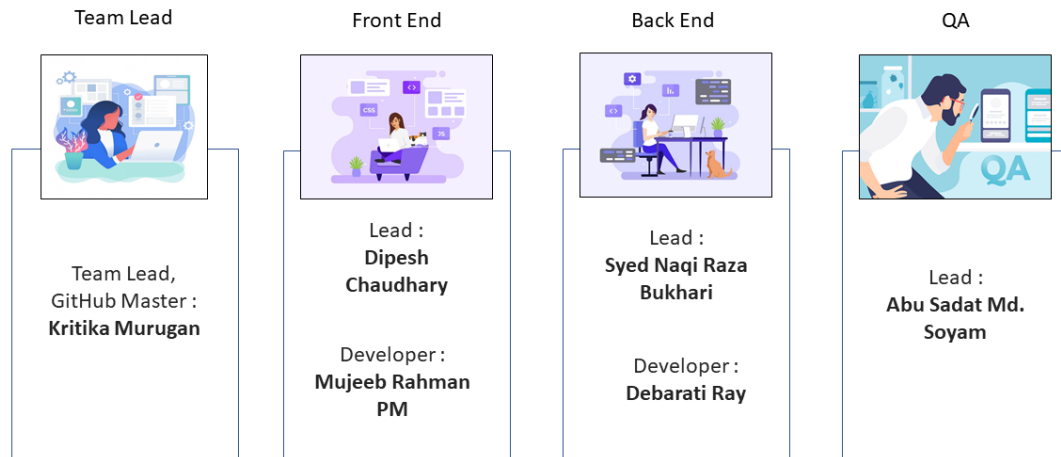| Existing Competitive Projects	Existing Features	Our Planned feature
www.studypool.com	Learners can ask questions in private to the teacher, not in public	Learners can post queries which is public, and anyone can reply
https://www.myfavtutor.in/	Search and filter by subject, exams (JEE Mains, IIT, AIMS), Institute, Tutor name	Search and filter by hourly charge, ratings

https://www.learntobe.org/	Learners can interact with the tutor in a scheduled time when needed (Once a week for an hour), not on emergency	Emergency Support feature is available everyday
https://tutorme.com/	Free demo class feature for new users who can get overview of the system	Free demo class, Payment based upon classes taken, not in monthly or yearly subscription
https://www.udemy.com/	Only Video Streaming learning platform, no one to one teaching	One to one teaching, learner can request tutor based upon his or her requirement

We analysed a few already existing projects, and considering the existing features of these projects, we have added our own unique features that makes our application stand out of these all. We have emergency support on all working days which is not available on existing projects. Public Queries section, filtering by ratings and hourly rate will help the learners gain better learning experience in compared to other projects.

High-level system architecture and technologies used

Team and roles

Team Lead	Front End	Back End	QA
Team Lead, GitHub Master : **Kritika Murugan**	Lead : **Dipesh Chaudhary** Developer : **Mujeeb Rahman PM**	Lead : **Syed Naqi Raza Bukhari** Developer : **Debarati Ray**	Lead : **Abu Sadat Md. Soyam**

Checklist

Task	Status
Team found a time slot to meet (online) outside of the class	DONE
GitHub master chosen	DONE
Team decided and agreed together on using the listed SW tools and deployment server	DONE
Team ready and able to use the chosen back and front-end frameworks and those who need to learn are working on learning and practicing	DONE
Team lead ensured that all team members read the final M1 and agree/understand it before submission	DONE
GitHub organized as discussed in class (e.g., master branch, development branch, folder for milestone documents etc.)	DONE