

# SW Engineering CSC648-848-05 Spring 2023

## ULingual

### Team 6

Jonathan Valadez, jvaladez3@sfsu.edu, Team Lead

Sara Murad Ahmed Seid, sseid1@mail.sfsu.edu, Frontend Lead

Steven Anthony Vasquez, svasquez7@mail.sfsu.edu, Backend Lead

Nik Shahrul Nafiz Bin Nik Azhan, nnikazhan@mail.sfsu.edu, Frontend Lead  
#2

Elias G Yetchalew, eyetchalew@mail.sfsu.edu, Database Master

John Lee Santiago, jsantiago2@sfsu.edu, Document Editor & Github  
Master

Aidan Carl Stivers, astivers@mail.sfsu.edu, Backend Lead #2

## Milestone #2

M3V1	4/27/23
M2V2	4/25/23
M2V1	4/4/23
M1V2	4/3/23
M1V1	3/5/23

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# Data Definitions V3

## Main data items:

### 1. Images:

- 1.1. This main data item shall be a component that is used in user profiles—where the user can upload images of themselves, a component that is used in courses where part of the lessons shall have images where the user shall have to identify what the image is in translation to their given learning language.
- 1.2. Images relative to user profiles via phone shall display 110x110 pixels, on desktop it shall be 180x180 pixels. Upon uploading profile pictures, the image shall be at least 320x320 pixels—but shall be scaled down to fit the circle template profile picture.
- 1.3. Images relative to lessons where the user shall identify a given image in the language they are trying to learn shall be at least 500x500 pixels.

### 2. Pages:

- 2.1. This main data item shall be a component that the user will scroll through and iterate through different subsections of our service. The user shall be able to scroll down these given pages and interact and iterate through other pages within our service, given the users desired subsection choice.
- 2.2. Pages shall encapsulate the entire screen of the user—relative to the size of the user's device. Pages shall be scaled properly for both mobile and desktop devices.

### 3. Posts:

- 3.1. This main data item is a component that shall give users access to write and publicly post their experience of their engagement with other users via posting a review or posting their rating experience. This data shall give users a good idea of how other users interact.

### 4. Progress Bar:

- 4.1. This main data item shall be a component that shows the users progress in regards to their course learning for a given language. The more they

learn and the farther they are into their course made by ULingual, the further their progression bar shall be.

**5. Language Title:**

**5.1.** This main data item shall be a component that gives the user information regarding their language choice.

**6. Forum Title:**

**6.1.** This main data item shall be a component that gives the user information regarding the title of a given forum where the user can decide if they want to click on the forum title and participate in the given discussion. Forum titles shall contain phrases that categorize content upon user discussion.

**7. Forum Content:**

**7.1.** This main data item shall be a component that has all the users' comments in relation to a given forum title. Within the forum content the user shall be able to view and comment on other users' discussions and make their own comments and questions in the forum so that others shall be able to comment on it as well.

**8. Enrollment:**

**8.1.** This main data item shall be a component that shows whether a user is enrolled in one of the courses offered by ULingual. These courses shall be initially created by ULingual but aren't exclusively made by ULingual. If tutors want to create more curated content, ULingual shall anticipate to support this as well as providing availability for course capacity–based on the tutors course direction (asynchronous work/synchronous work).

**9. Course Index:**

**9.1.** This main data item shall be a component that shows what type of courses ULingual shall offer. This data item shall also show who is enrolled in the given course as well as a count of how many. Each course has progression, this data item shall show the individual users progression bar as well.

## **10. Miscellaneous Content:**

- 10.1.** This main data item shall be a component that contains and stores ULinguals miscellaneous alternatives for users to learn; via music playlists, book recommendations, and show/movie recommendations. These forms of content shall be relative to the user's choice of language they desire to learn or improve upon.

## **Entities:**

### **1. Tutors:**

- 1.1.** An entity that created an account and is a verified personnel that excels in a given language.
- 1.2.** This entity can sign in from different devices.
- 1.3.** This entity shall have a unique username and password.
- 1.4.** This entity shall have a unique tutor badge assigned to them.
- 1.5.** This entity shall have their first and last name listed within their profile as they are verified personnel.

### **2. Users:**

- 2.1.** An entity that created an account and can sign in from different devices.
- 2.2.** This entity shall have a unique username and password.
- 2.3.** This entity shall have an optional choice to list their first and last name within their profile.
- 2.4.** This entity shall have access to courses provided within ULingual.
- 2.5.** This entity shall have the ability to book an appointment with a tutor.
- 2.6.** This entity shall have access to playlists, books, & shows recommended by ULingual in relation to the language the user desires.

### **3. Courses:**

- 3.1.** This entity shall have exercises that the user can complete independently of video connection with other users. These exercises can include completing given sentences, matching pictures to words, and listening to a phrase and identifying what the phrase means in the user's given language choice.

#### **4. Forums:**

- 4.1.** This entity shall be accessible by all users and tutors where they are able to interact with each other via text chat threads. Here is where users and tutors can answer questions, share information regarding language, and potentially make new friends.
- 4.2.** This entity shall have text chat threads that are broken down into sections. Based on these sections, the user can access different information that other users and tutors publicly post and share.

#### **5. Reviews:**

- 5.1.** This entity is a section under a tutor's profile where other users can leave comments about the tutor based on their experience in a video call with them.
- 5.2.** This entity is a section under a tutor's profile, where other users can leave a rating out of 5 stars to summarize their experience with the tutor on a video call. This can be done independently from comments, where a user can either leave a rating out of 5 without commenting or also leave a rating and a comment.

#### **6. Video Rooms:**

- 6.1.** This entity is a place where users can either connect with another user or a tutor to exchange and learn a language of their desire. This shall also be a space where users can also have a potential karaoke party with other users.

#### **7. Search bars (Weak Entity):**

- 7.1.** This entity shall be able to be used by the user to search for courses related to their language, books, and videos. This entity will filter through ULinguals database to find specifically what the user wants in relation to what we have in our server database.

#### **8. Chat Box:**

- 8.1.** This entity shall be accessed and used by the user during a video session to be able to text with the other user just in case they are unable to use their microphone.

**9. User Profiles:**

- 9.1.** This entity shall be customizable by the user for public display. Some customizable features shall include: banner customization, description of profile, language preferability, language knowledge, profile picture, optionally date of birth, optionally age, and preferred name/nickname.

**10. Language (Weak Entity):**

- 10.1.** This entity shall contain all the languages that ULingual offers that the user can access and learn.

**11. Music Playlists:**

- 11.1.** This entity shall contain music playlist recommendations in relation to the user's desired language choice. Here the user can see and browse music that people are listening to in their respective language learning choice.

**12. Books:**

- 12.1.** This entity shall contain book recommendations in relation to the user's desired language choice. Here the user can view popular books written by authors whose natural language is in relation to the user's respective language learning choice.

**13. Movies & Shows:**

- 13.1.** This entity shall contain movies and show recommendations in relation to the user's desired language choice. Here the user can view popular shows and movies that were made in the natural language that's in relation to the user's respective language learning choice.

# Functional Requirements V3

## Priority 1:

1. **Audio Connection Between users**
  - 1.1. The user shall be able to connect and have an audio connection to speak with other users.
2. **Camera Connection Between Users:**
  - 2.1. The user shall be able to connect and have a camera connection with other users.
3. **Booking Video Calls with Native Speaking tutors**
  - 3.1. The users shall be able to book video call times from a native speaker of their preferred choice.
  - 3.2. The users shall be able to view future appointments they have booked.
4. **Catalog Of Available Appointments with Native Speaking tutors**
  - 4.1. The user shall be able to see a list of native speakers and their available time slots.
  - 4.2. The user shall be able to filter available appointments to meet their needs.
5. **Registering Appointments by Tutors:**
  - 5.1. The tutor users shall be able to set up appointments for users to book within a timeframe.
6. **Booking Appointments with Tutors:**
  - 6.1. The user shall be able to book appointments with specialized tutors with teaching credentials.
7. **Open Live Chat by Native Speakers:**
  - 7.1. Native speakers shall be able to host open live chats for users to connect to.
  - 7.2. Users will be able to connect to calls with native speakers to practice conversational skills.
8. **Registering an account:**
  - 8.1. The user shall be able to create an account.
  - 8.2. The user shall be able to register the account as a learner, native speaker, or native-speaking instructor.
  - 8.3. The user must verify their age during registration. Users must be 18+ years old.
9. **Logging in:**
  - 9.1. The user shall be able to log in to their registered account and use website features.
10. **Create a Profile:**
  - 10.1. The user shall be able to create and manage their own profile page.



- 10.2. The user shall be able to select a premade profile picture or upload and use one of their own.
- 11. **User Availability:**
  - 11.1. The user shall be able to set their status to Available, Busy, or Offline/Invisible.
- 12. **Chat Box For Video Calls:**
  - 12.1. The user shall be able to text other users during their video calls.
- 13. **Generate Flashcards:**
  - 13.1. The user shall be able to access ULinguals generated flashcards as a small test for their desired language.
- 14. **Create Flashcards:**
  - 14.1. The user shall be able to create digital flashcards to help them review and practice words or phrases of their desired language.
- 15. **Language Comprehension Exercises:**
  - 15.1. The user shall be able to practice precreated exercises as a form of reinforcing their learning.
  - 15.2. The user shall be able to complete exercises like filling in the blank of sentences, word matching, and object identification in their desired language.
- 16. **Distinguished Teaching Symbols:**
  - 16.1. The user shall be able to display distinguished symbols on their profile indicating their level of teaching ability for a specific language.
- 17. **Non-Verbal Translation Exercises:**
  - 17.1. The user shall have access to non-verbal translation exercises which will allow them to practice translating between two different languages.
- 18. **Recommendation List of Books:**
  - 18.1. The user shall have access to a list of book recommendations in a specified language.
- 19. **Recommendation List of Films/Shows:**
  - 19.1. The user shall have access to a list of movie and tv show recommendations in a specified language.

**20. Playlists of Music:**

- 20.1. The user shall be able to access playlists of music in relation to the language they desire to learn.

**21. Tutor Reviews:**

- 21.1. The user shall be able to leave a comment review on their experience with other users in a call.
- 21.2. The user shall be able to leave a rating out of 5 stars on their experience with other users in a call.
- 21.3. Their comments and star rating shall be shown on a given user's profile as well as the date it was posted.

**22. Global Forums:**

- 22.1. The user shall be able to join the global forum discussion.

**23. Friends List:**

- 23.1. The user shall be able to view an organized list of friends on the website.
- 23.2. The user shall be able to edit their username that is shown to others on the friends list.
- 23.3. The user shall be able to search for other users by username or user ID.
- 23.4. The user shall be able to send and accept friend requests to and from other users.
- 23.5. The user shall be able to view the status of other users on their friends list.

**Priority 2:**

**1. Verbal Translation Exercises:**

- 1.1. The user shall have access to verbal translation exercises which will allow them to practice translating between two different languages.

**2. Multi-Screen Call:**

- 2.1. The user shall be able to host or join a video call with multiple users.

**3. Customize a Profile:**

- 3.1. The user shall be able to customize their profile theme, wallpaper, and banner.

- 3.2. The user shall be able to set roles/tags for their knowledge of a language to be shown on their profile page.
- 4. **Recommended Travel Locations:**
  - 4.1. The user shall have access to a list of recommended traveling locations based on their language roles/tags.
- 5. **Linking Social Media**
  - 5.1. The user shall be able to link their account to their accounts on other social media websites.
- 6. **Sharing Progress to Social Media:**
  - 6.1. The user shall have the option of posting personal course progress to linked social media websites.
- 7. **Structured Lesson Plans**
  - 7.1. The user shall be able to follow a self-guided lesson plan for learning basic topics using various language exercises defined above.
  - 7.2. The user shall be able to observe their language progress in a graphical way.
- 8. **Tips to Tutors:**
  - 8.1. The user shall have the option of tipping tutors after lessons based on their performance in the tutoring session.
- 9. **Direct messaging**
  - 9.1. Users shall be able to directly message other users from their friends list.
- 10. **Test to Verify Native Speakers**
  - 10.1. The user shall be required to pass a test to confirm their mastery of the specified language.
- 11. **Report User Option**
  - 11.1. The user shall be able to report other users' misconduct.
- 12. **Friends Count:**
  - 12.1. The user shall have the option of displaying how many other users they have connected with.

### **Priority 3:**

#### **1. Transcript of Conversations Toggle:**

- 1.1.** The user shall be given the option to select if they want their conversation to be subtitled and written on a document.
- 1.2.** The user shall be able reference this document as support for their studies.

#### **2. Certification of Completion:**

- 2.1.** The user shall be given a digital certificate of completion after the user has completed a language program.

#### **3. History of Language:**

- 3.1.** The user shall be able to read about the history of available languages offered on the website.

#### **4. Weekly Quiz Competition:**

- 4.1.** The user shall be able to participate in weekly quizzes.
- 4.2.** The user shall be able to view weekly quiz scores of other users on their friends list.

## **Wireframes Based on your Mockups/Storyboards V2**

1.This is the first page that the user shall see when first going to the ULingual website. As we see in the picture there is a Get Started button to help us start.

2. This page shall appear after the Get Started button was selected. If someone does not have an account already registered, they shall click the Create Account button.

3. This page shall appear when the Create Account button is selected to help the user create their account after the terms and conditions are checked.

4.This user shall see this from either after login or creating an account, and that is to select the languages they want to learn.

5. The user shall see this when they select English as language to learn they shall be asked to choose their level from beginner and intermediate.

6. When the user selects as Beginner, there shall be course materials assigned to it such as lessons and exercises.

7. When the user selects Lessons, there shall be basic lessons to start with.

8. If the user selected the Exercise, there shall be some basic questions verifying by correct or wrong button pop up. With a navigation button at the bottom.

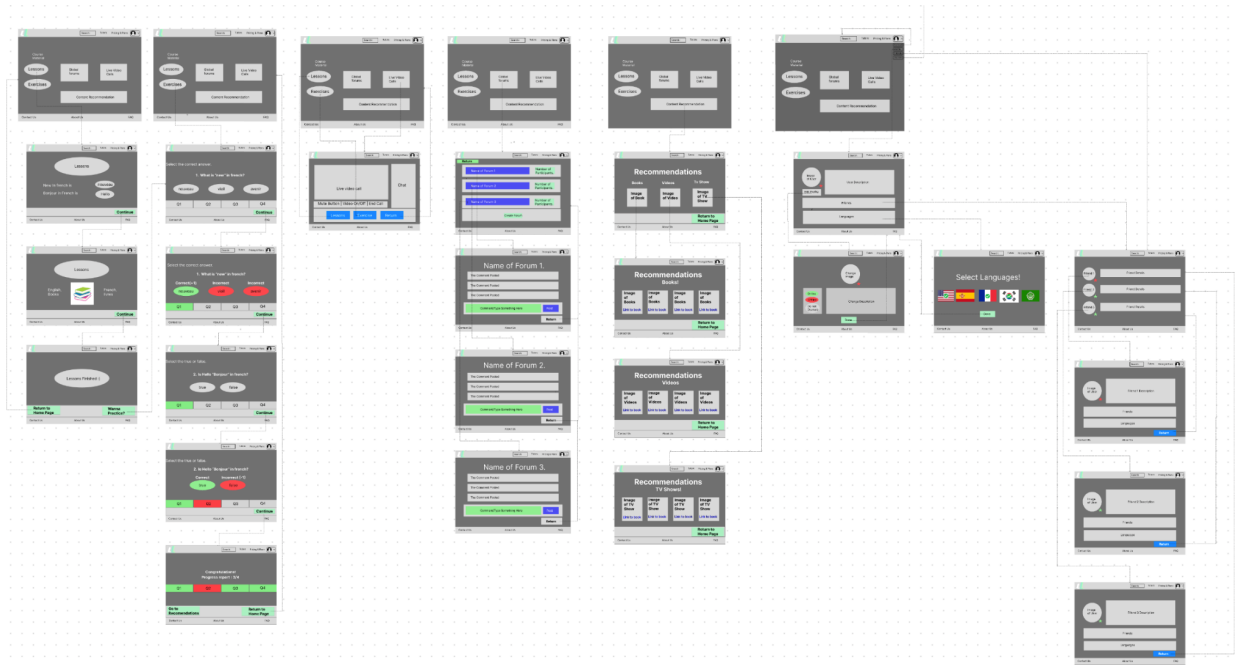
9. Here are more examples of exercises. During the exercise, the user shall also be able to view a progress report at the bottom showing their progress in the exercise.

10. This is the results page with all the correct and wrong answers. There will be a link at the bottom to either go to recommendations or to go back to the home page.

11. The website shall recommend some books, videos etc.. according to the progress report. Recommend some books, videos etc.. If the user selected books from the recommended button, this shall show up.

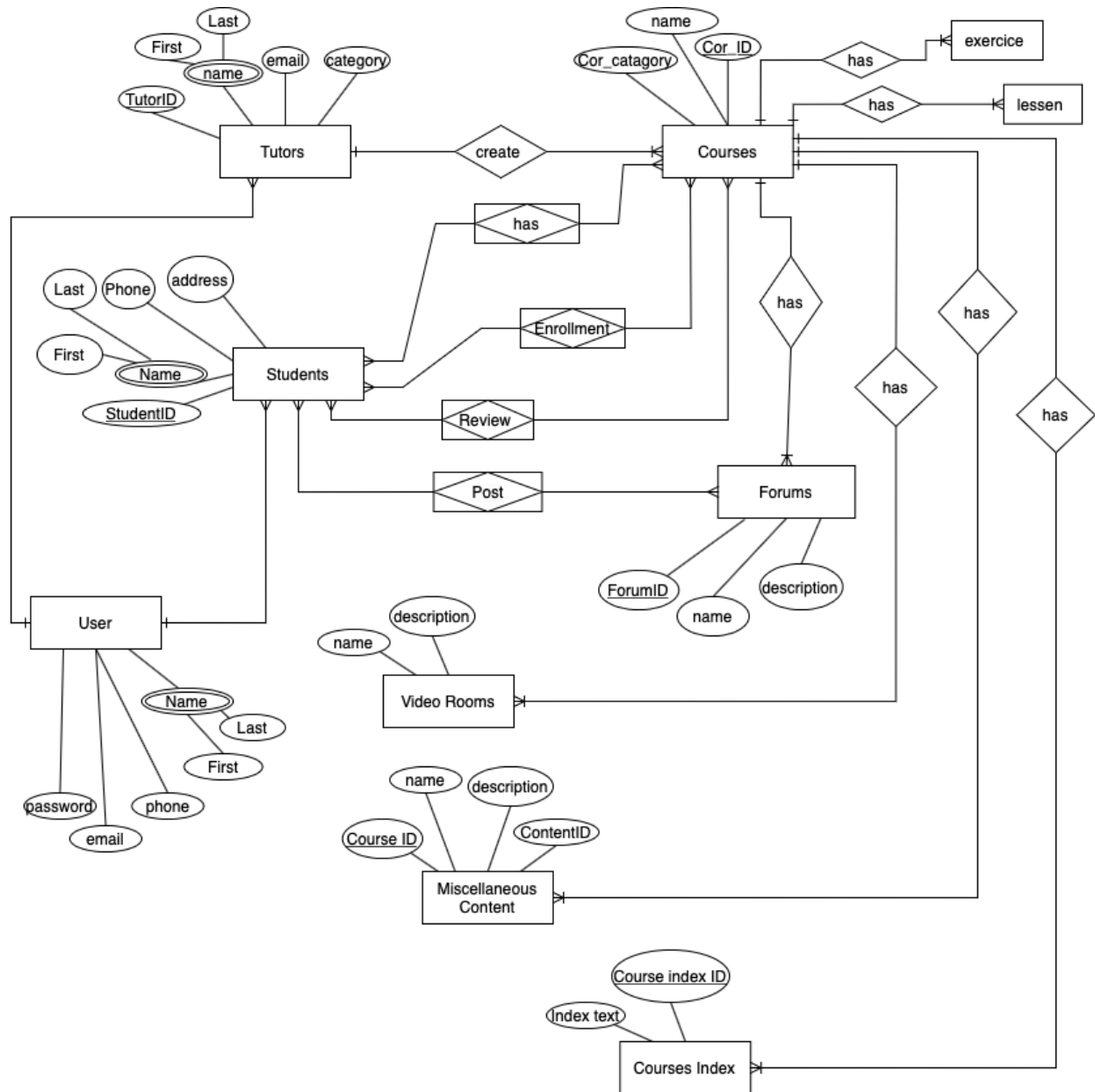
12. The ULingual website shall offer videos call, from friend list to its users. Also calls with tutors. This page will contain a live video call which allows users to share their screen. There will also be a chat bar to the side to allow for communication via text. Below will be a link which will redirect to the lessons and exercises page on a new tab.





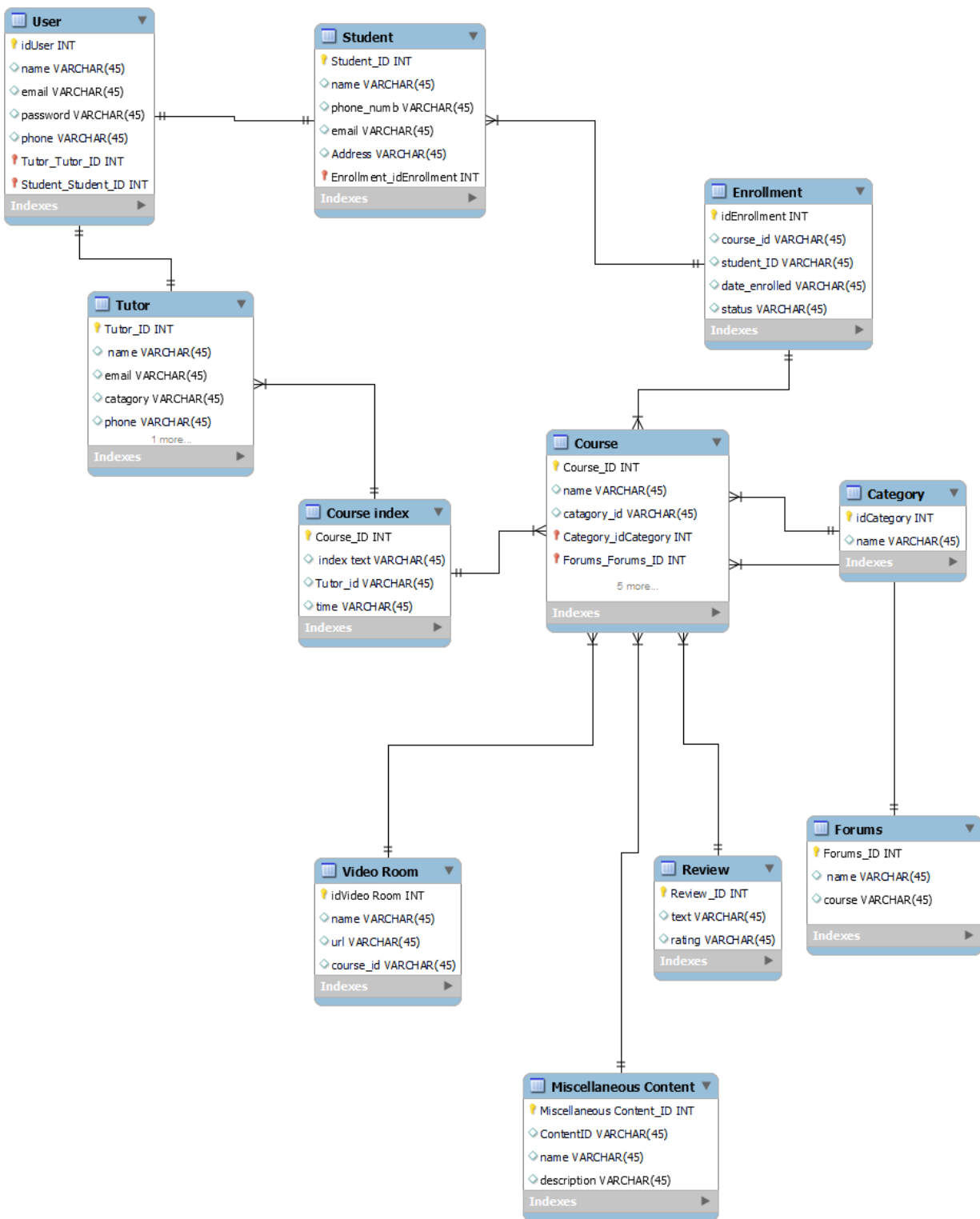
# High Level Database Architecture and Organization V2

## ER Diagram



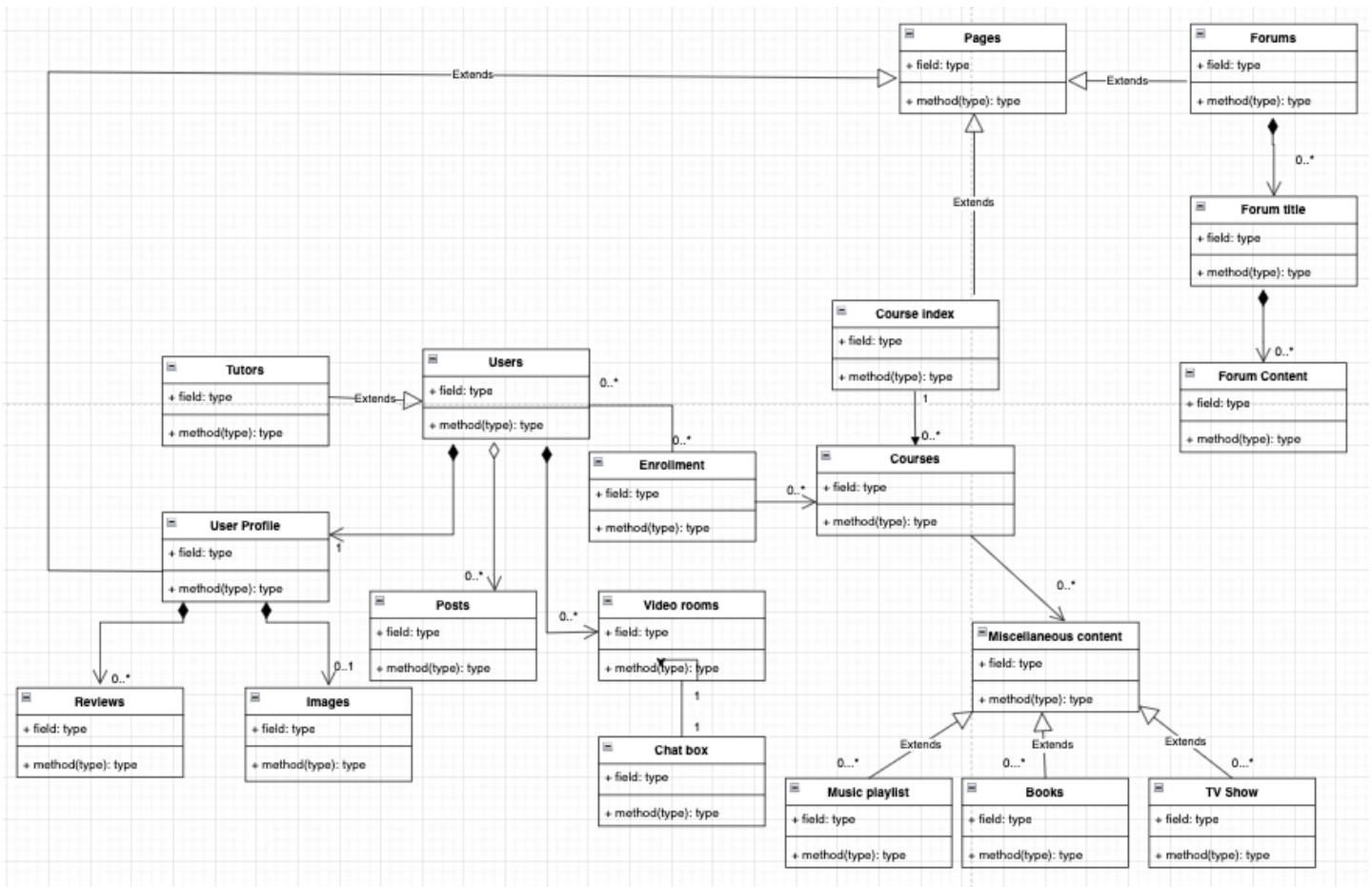
## EER Diagram



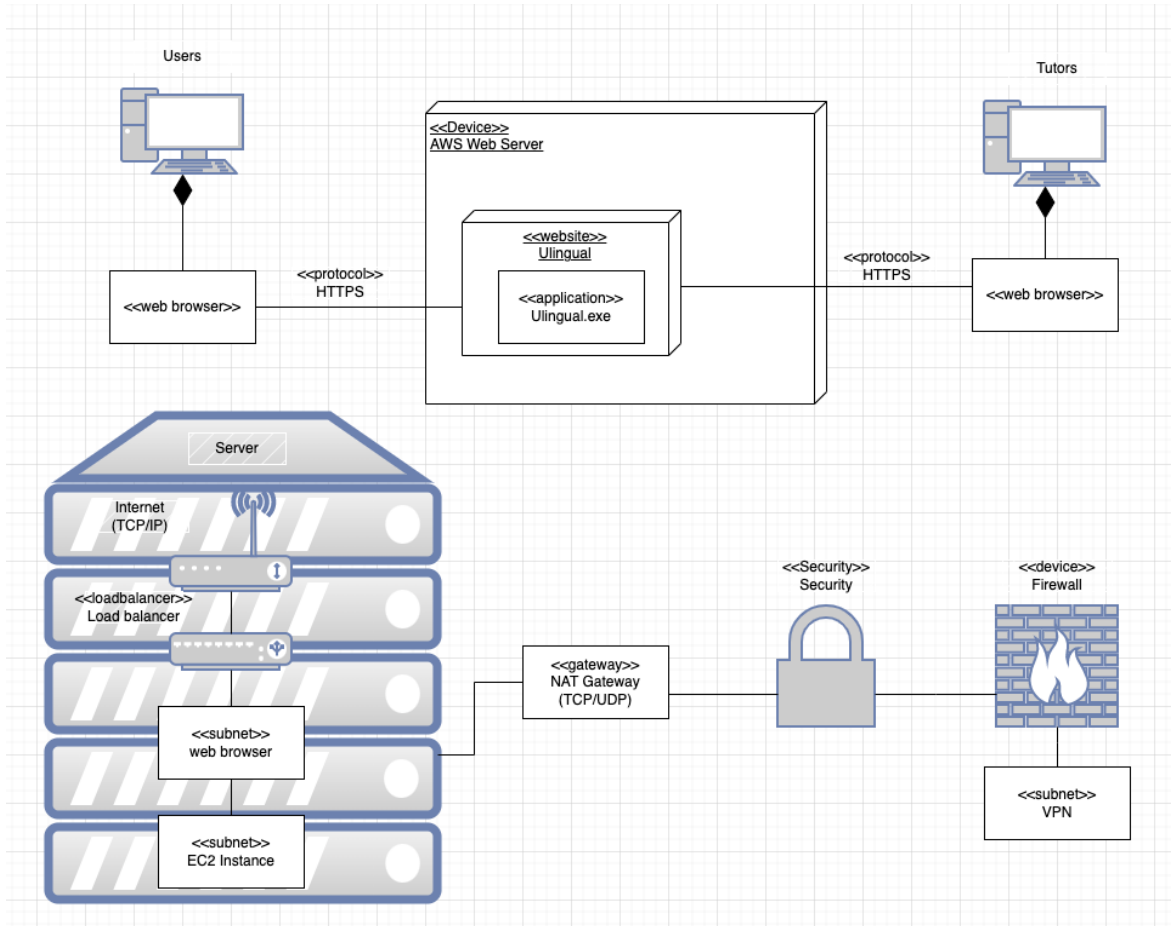


# High Level Diagrams V2

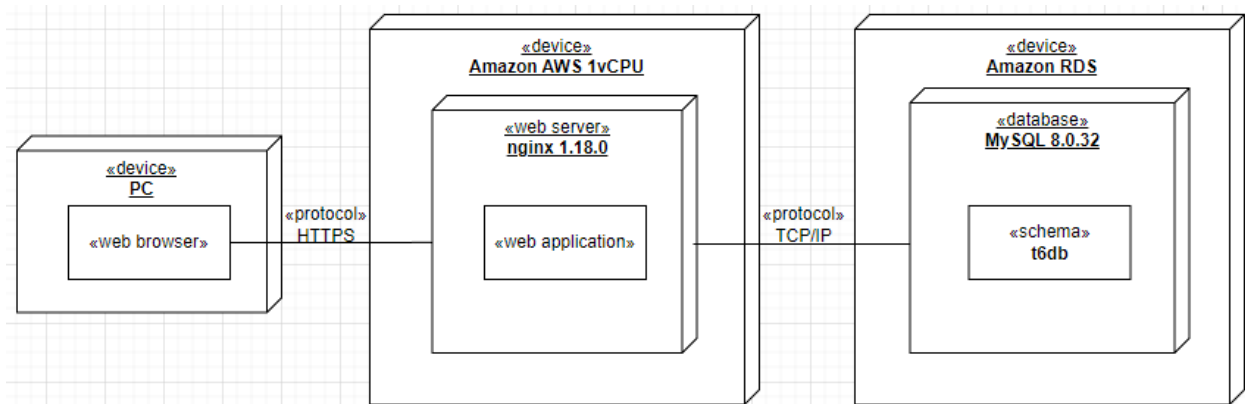
## UML Diagram



## Application Network Diagram



## Deployment Diagram



## **List of Contributions**

### **Sara Murad Ahmed Seid**

Contribution Score: 7.5

Sara contributed to the wireframes and I really appreciate her effort; however, I had to revise her wireframes because they weren't presentable. I was okay with revising though and it wasn't a big issue. Sara also did some template code for a couple of front-end pages. These pages were templates and I had to revise them to make them more presentable. I do appreciate her effort.

### **Steven Anthony Vasquez**

Contribution Score: 8

Steven helped with the initialization and progression of the backend for our website. Since we didn't get to complete that in M2 we did revise and solve this in M3 thanks to Stevens help. Steven also pointed out and requested a group meeting early on so everyone was on the same page towards our functional requirements as well as our priority towards them.

### **Nik Shahrul Nafiz Bin Nik Azhan**

Contribution Score: 10

Nik was a huge help to the front-end of M3, not only did he help with the wireframes but he also put in so much effort into coding the front-end template pages for our website—and a lot of these templates look really good. He's definitely been a team player for this milestone and contributed the most work.

### **Elias G Yetchalew**

Contribution Score: 8

Elias made good revisions to the database diagrams that weren't initially done correctly—which is okay because he fixed them now. Elias also shared good thoughts and was good with communication in terms of moving forward with the database and making sure we as a team are on the same page for certain aspects of the website moving into M3V2.

### **John Lee Santiago**

Contribution Score: 10

John has also been a huge help to M3, he's very helpful when it comes to pull/merge conflicts that we as a team run into sometimes because of delayed pushes and not getting into the habit of always pulling. Either way he's a great help with that and also he contributed a lot to the backend code to allow us to connect our mySQLworkbench database to the server. He also is trying his hardest, which I appreciate the most, especially when it comes to issues that arise from the ec2 instance.

### **Aidan Carl Stivers**

Contribution Score: 8

Aidan also helped with the initialization and progression of the backend for our website. As stated earlier, we didn't get to complete the backend part of M2 so we fixed this and solved it in M3 thanks to Aidans help as well. Aidan also pointed out and requested a group meeting early on so everyone was on the same page towards our functional requirements as well as our priority towards them. The functional requirements were a big component of the project moving forward so I appreciate both Aidans and Stevens' drive to make sure we are all on the same page.

### **Jonathan Oscar Valadez**

Helped with front-end pages including home page, login page, create account page, nav bar, footer, tutors page, tutor profile, price and plans, faq page, form page, about us page, and terms and conditions. Also helped with documentation and revision section 1 of documentation. I further helped with the drop down menu that routed us to a lot of major pages we use: i.e dashboard, user profile, log in, and friends.