[CS361] HW1 Requirements Assignment

Group 17 Members

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Requirements Definition

o English descriptions of functional requirements and non-functional requirements in terms of the environment (approx 1 page) - **Eric**

o Structured descriptions of the most important 3 use cases (approx 3 pages) - **Everyone Else**

      1) **Arthur** - Tutor sign up

      2) **Gurbir** - The student signing up for a session.

      3) **Jason** - Teacher registering a student for tutoring. Putting down different subjects.

o Class Diagram using UML1, or an ERD showing the important entities (and their attributes) in the environment where the system will execute (approx 1 page)

ERD Diagram
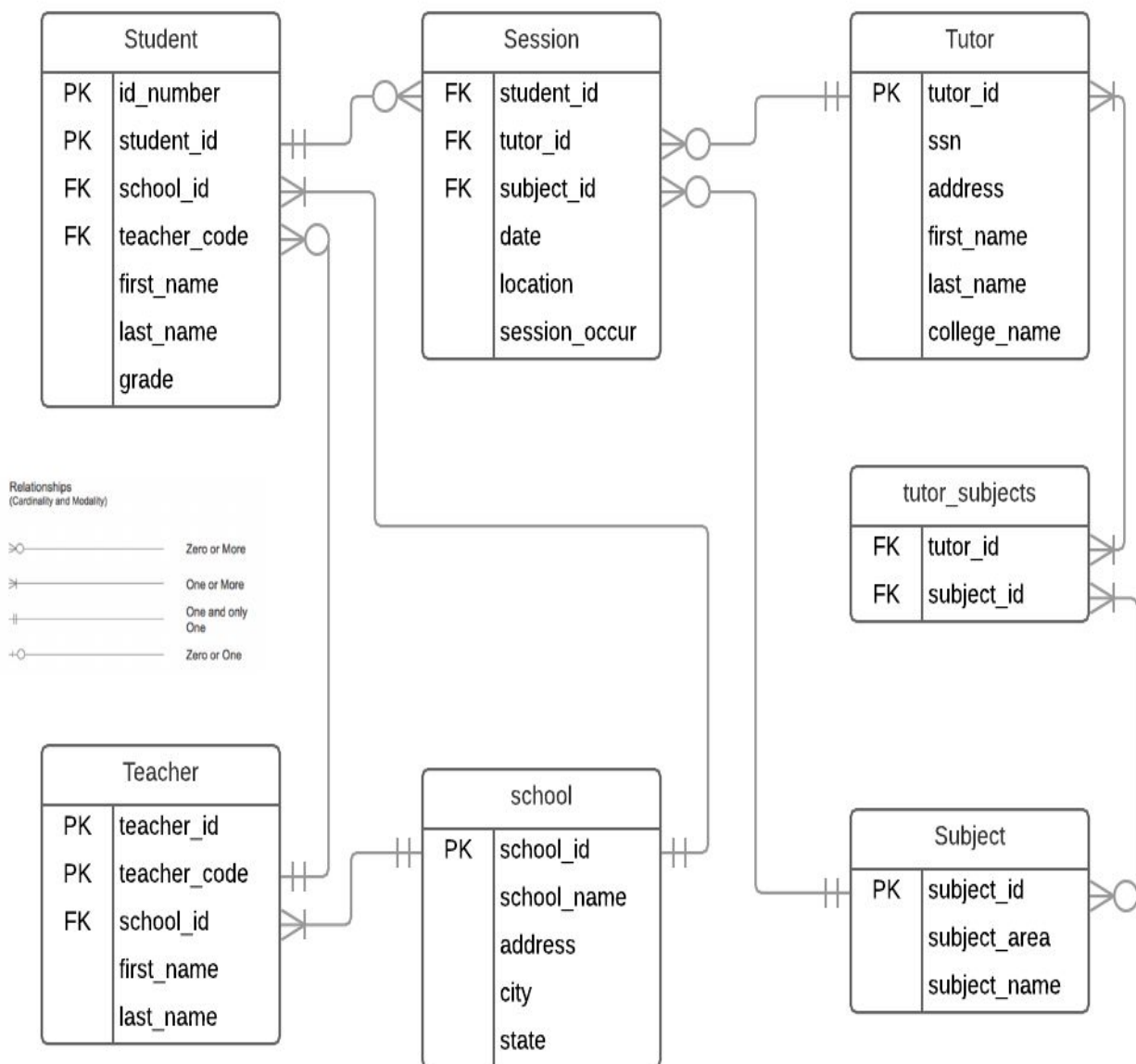
Functional & Non-Functional Requirements (in terms of Environment)

1. Teachers must have their own unique user verification code.
2. A student user can only be created by a teacher.
3. Tutors must be enrolled in a University in be able to register with the tutoring service.
4. Each tutoring session that is initiated last no longer than an hour.
5. Tutoring sessions occur at the school locations for younger students and can occur off of the school premises for high school students.
6. Tutoring sessions can happen during or after school, between the hours of 3 and 5.
7. Only students who are enrolled in discounted lunch programs are eligible to be tutored.
8. Tutors can sign up to tutor multiple subject areas.
9. All subjects are not required to have tutors.
10. After a tutoring session, tutors verify that the tutoring session took place.
11. Students can only cancel tutoring sessions with the permission of a teacher.
12. If a tutor cancels a tutoring session to many sessions, their profile will be removed.
13. Students and tutors can cancel tutoring sessions up to 48 hours in advance.
14. Students can schedule a tutoring session up to a week in advance.
15. After the beginning of each year, a student's profiles must be reactivated by their new teacher.
16. Teachers have access to student accounts.
17. Tutoring sessions are only 1 on 1.
18. Multiple tutoring sessions can be scheduled in a row.
19. Each tutor that signs up for the service will have a background check performed on them.
20. Tutors and students will not be able to message one another through the application.

Non-Functional Requirements:
1. System interface must be easy to use for children between the ages of 6 and 18.
2. System must maintain security over user data to protect students and tutors.
3. When a tutoring session is scheduled the system must reliably display the session time and the date for both the tutor and student.
4. System must have data integrity and track what subjects a tutor is comfortable tutoring.
5. Tutor user accounts will be approved within a month of data submission.
6. Tutors, teachers, and students will be notified within 1 hour when a session is canceled.
7. Tutors, teachers, and students will be notified within 1 hour of a session being scheduled.
8. A tutor's schedule will be updated immediately if a tutor makes changes to their availability.
9. After 8 tutoring session cancellations a tutor's profile will be terminated.
10. A teacher will be able to start signing kids up immediately once they have a teacher profile.
11. Student profiles will useable

Use Case #1: Tutor Registration

Use Case Title: Tutor Registration

Requirement/Purpose: This use case is to ensure that a tutor is properly signed up and registered in the system. This use case is vital to this program because without the capability to have tutors signed up, the system does not have anyone to help tutor the students

Actor: Tutor

Requirements:
1. Tutors must be enrolled in a University in order for them to register with the tutoring service.
    a. University must be verified to be with a certain number of miles (ex. 20-50 miles) from the teacher/student school.
2. Tutors will start off with a 0% Cancel Rate attached to their profile
3. Tutors must pass a background check.
    a. Tutors will submit their information to a third party who will perform a background check. This can be done through the platform, via a SaaS service like Checkr or manually via mail and paper.
4. Tutors must select at least one subject they are willing to tutor in.

Optional Requirements:
These are options presented at sign up, but not required to complete the registration process
1. During sign up, tutors can list their time availability on a calendar.
2. Tutors can sign up to tutor multiple subjects. These prospective tutors can sign up for multiple subjects from a sub menu of options. For example, the math sub menu will list algebra, geometry, and trigonometry.

Post-Conditions:
1. Tutor will be registered in the system,
2. Tutor will have completed and successfully passed a background check.
3. Tutor will be registered to tutor various subject areas.
4. Students near the tutor can see the tutor's availability if the tutor is registered to tutor a subject area that a student is looking for

Data Flow Event
1. Prospective Tutor enters the "Tutor Registration" page
2. Tutor enters critical information: name, age, year, school, subject(s) they can tutor.

3. Tutor is successfully entered into the database, but not the system.
4. Tutor submits/is subjected to a background check.
5. Once successfully passed, the tutor's information on the database is altered to reflect the pass & is now verified and fully registered in the system.

Use Case #2: Student Registration

Requirement/Purpose: The customer has requested for the teacher to be the user that sets up the new student account for the tutoring program. This use case is vital to the program because it creates a new account for the student which is needed in order for the student and/or teacher to set up a tutoring appointment with an approved tutor.

Name: Register Student for tutoring program

Actor: Teacher

Preconditions:

· School is enrolled in the tutoring program

· Student qualifies for tutoring program

· Actor is a certified teacher with the school

· Parent has signed and returned a permission slip for the student to be enrolled in the program

· Student has a school id number

· Actor has been given a unique password

Post-conditions:

· Student has been successfully registered for the tutoring program

· Student, parents, and teacher all have access to the account created

Flow of Events:

1. Teacher logs onto website using his/her unique password

2. Teacher requests new student sign-up form

3. Teacher enters in basic information about the student (Name, grade, email, school, parents' email, school id number)

4. Teacher selects the subjects that the student can choose to get tutor help in

5. Teacher submits the sign-up form on the website

6. The database is updated with the new student and creates a new account

7. An email is sent out verifying that the student has been successfully signed up for the tutoring program

Use Case # 3: Student signs up for a tutoring session

Requirement: The student, with the help of a teacher in the case of younger students, will be able to check for available tutors in their area for their desired subject matter, and be then select an available appointment with a tutor to register for a tutoring session at a selected time.

Actor: Teacher or student, depending on student's age

Preconditions:
- School is enrolled in the tutoring program
- Student qualifies for tutoring program
- Actor is either a teacher at the school signing up for one of their students, or a high school aged student signing up for themselves
- Student has a unique school id number
- Actor has a unique password
- Actor has access to student's account

Post-conditions:
- Both the student and the tutor have been successfully registered for a tutoring session at a specific time and place, for a specific subject
- Reminder email sent to both student and tutor at a selected time before session

Flow of Events:
1. Teacher or student logs into website using student's ID number and unique password
2. Teacher or student selects desired subject area for tutoring, along with other parameters as needed such as a desired time frame.
3. Teacher or student hits "Search" button
4. System filters through available tutors, and displays only tutors matching the given search criteria.
5. Teacher or student browses list of possible tutors, and selects a tutor.
6. Teacher or student is shown available times for selected tutor, and selects an appointment time.
7. The database is updated with the new appointment information.
8. Both Tutor and Student receive an email as well as a message on the app informing them of the newly scheduled appointment.
9. Student has option to receive a reminder email before appointment.

Requirements Specification (Approx 5 Pages)

o English descriptions of functional requirements and non-functional requirements in terms of the system's interfaces (approx 1 page) - **Eric**

o Dataflow diagram showing how the system relates to entities in the environment (approx 1 page) - **Arthur**

o Message sequence charts, or state charts, for the most important 3 use cases (approx 3 pages) - **Arthur, Gurbir, Jason**

• In one sentence, briefly summarize whether your customer was willing and able to meet with you on Tuesday or Wednesday. If your customer cannot meet with you on either of those days, then you are free to proceed on the basis of the Vision Statement without further customer input on this homework.

Summary: Customer was willing and able to meet with us on Thursday evening.

Functional & non-functional requirements in terms of the system's interfaces

1. A student's student id is their username, and the inputted student id is checked against a database of student identifications to ensure the username is valid.
2. Each teacher is assigned a random identification number.
3. To create or activate a student user requires a teacher identification number, and a radio button confirming that parental consent has been received.
4. When a student's user profile is created it validates the teacher identification number against the database.
5. A student cannot have any null attributes.
6. Tutors will have their information sent to a third party who will perform a background check.
7. Tutors must register to tutor at least 1 subject area before an account can be created.
8. A student will set the location of the tutoring session, which will be an attribute of the session entity.
9. After a tutoring session occurs, a tutor will send a confirmation that the tutoring session occurred as scheduled.
10. If a tutor cancels more then 30% of their tutoring sessions their profile will become inactive.
11. Tutoring subjects will have a sub menu of options to choose from. For example, the math sub menu will list algebra, geometry, and trigonometry.
12. Tutors can list their time availability on a calendar.
13. Students can search for tutors based on subject and a list of tutors, that can be chosen, will be shown based on proximity to the school.
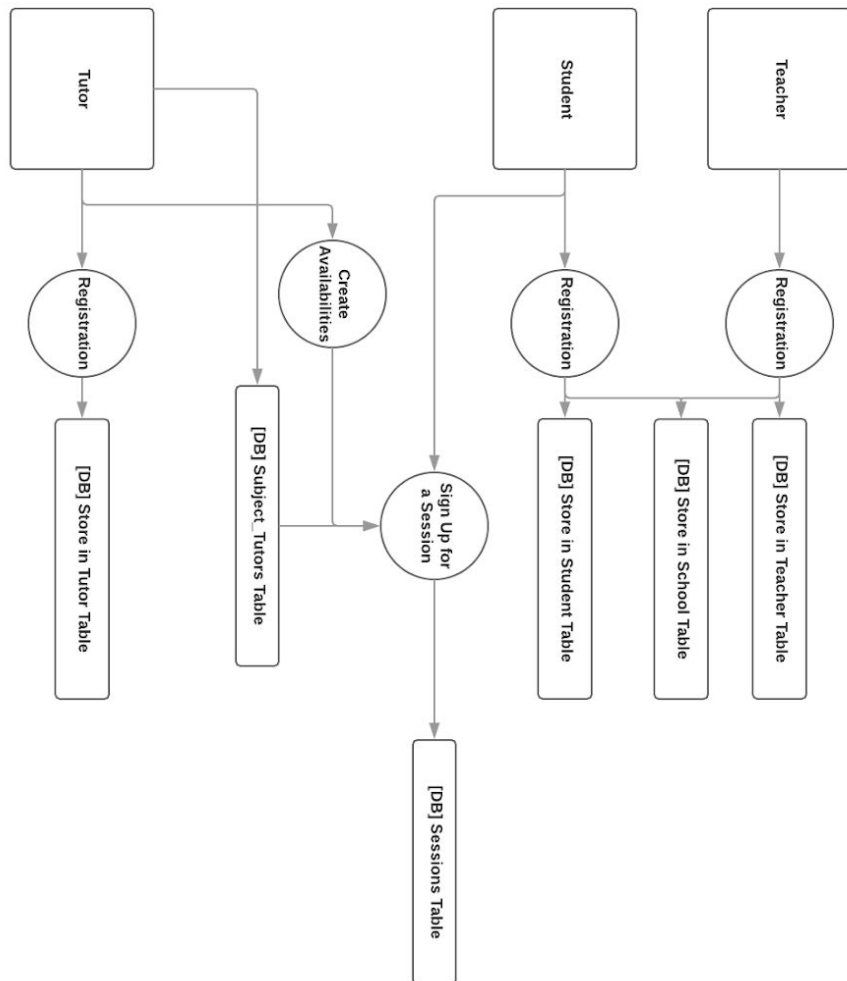14. Students will only have access to a tutor's schedule for the next 7 days.

15. At the end of each school year all student's profiles are set to inactive.

Non-functional Requirements:
1. The application will be developed must be developed for use as a web application.
2. Front end code must be compatible with google chrome.

Dataflow Diagram

Show the system relates to entities in the environment

Tutor

Student

Teacher

Registration

Create Availabilities

Registration

Registration

[DB] Store in Tutor Table

[DB] Subject_Tutors Table

Sign Up for a Session

[DB] Store in Student Table

[DB] Store in School Table

[DB] Store in Teacher Table

[DB] Sessions Table

Sequence Chart #1: Tutor Registration

DATABASE	SYSTEM	WEBSITE	TUTOR

Tutor Fills Out Registration Form

Application Complete?

Yes

Everyone

Added to DB

Background Check?

Passed

Failed

Verified Status

Reject Status

Receives Registration Status Email
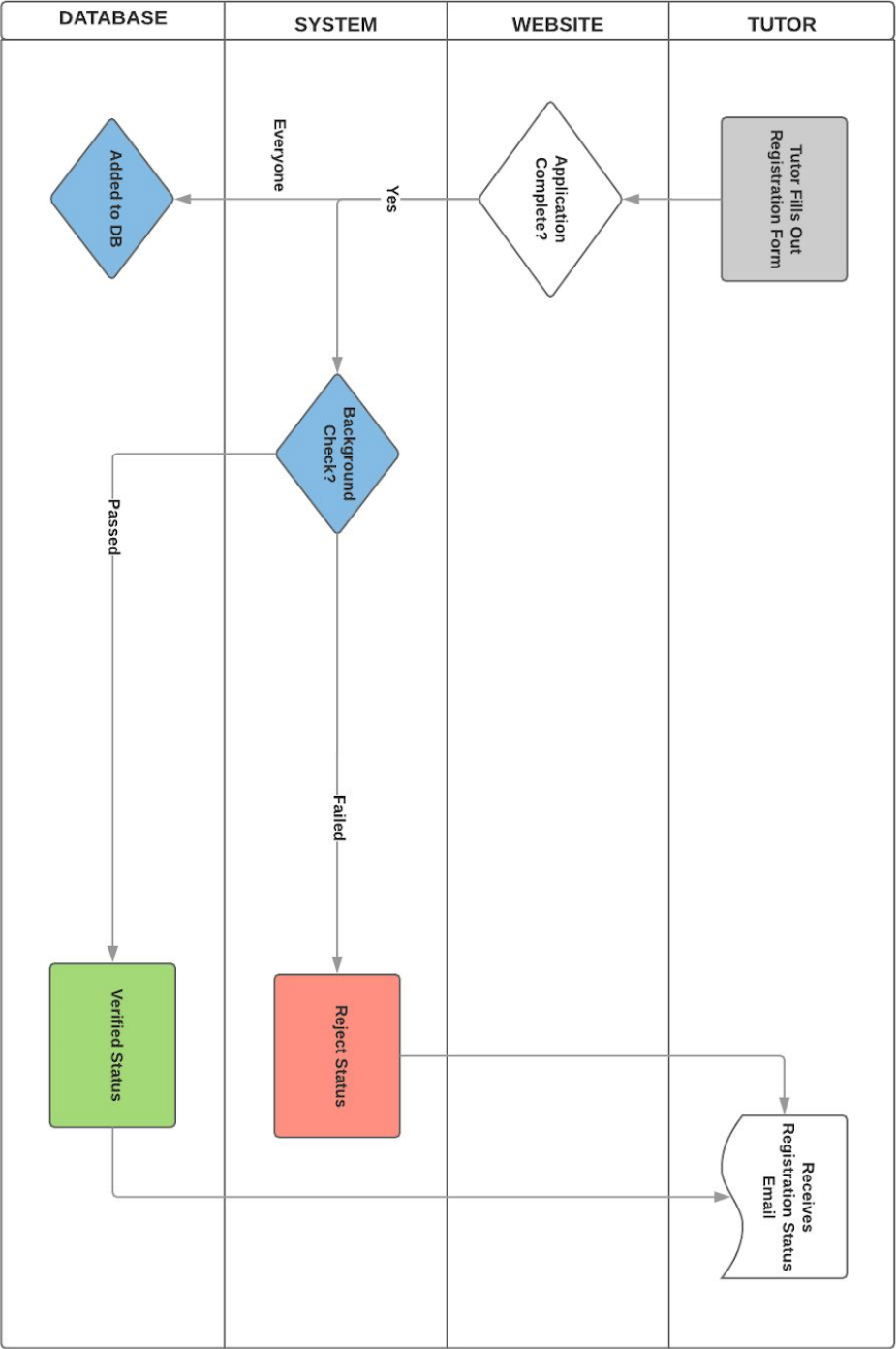
Sequence Chart #2: Student registration

User | Website | System | :Database

Logs on website

Requests new student sign-up

Returns sign-up form

Teacher enters student info

Teacher selects subjects allowed

Sign-up form is submitted

New account added to DB

Email verifying successful account added
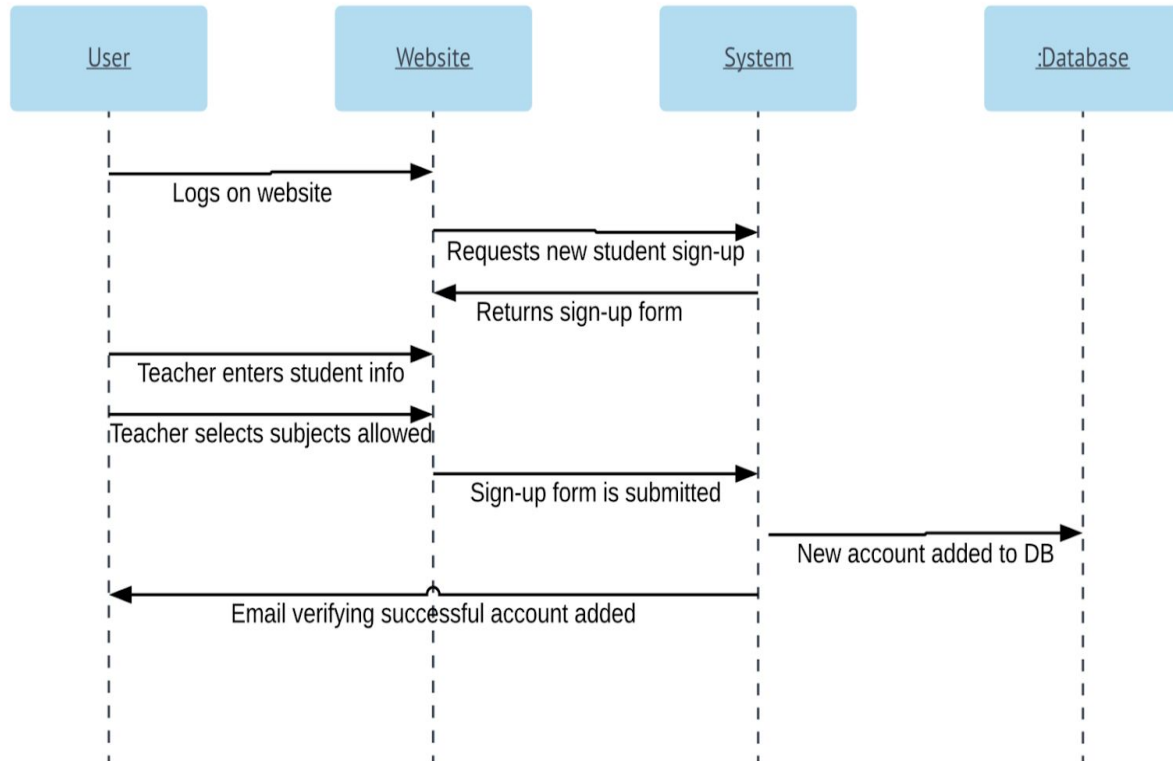
Sequence Chart #3: Tutoring Session Sign-up

User	Server	Database	Tutor

Logs in

Requests new tutor session

Returns tutor search form

Enters search criteria

Query database for matches

Return matches

Display matches to user

Selects tutor and appt time

New appointment added to DB

Send confirmation msg to tutor

Send confirmation msg to user
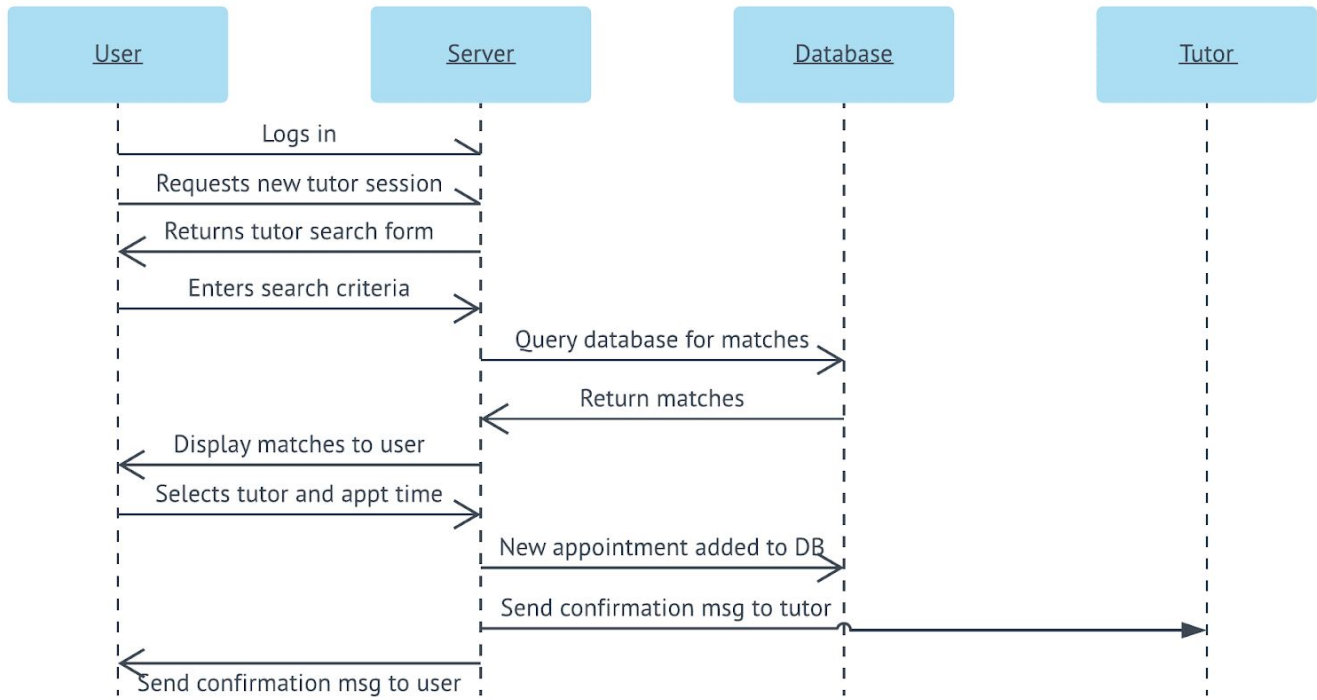
Customer Contribution:

Our customer, Paige Ribera, showed up to our meeting and patiently answered all of our questions about the vision statement. She was great to work with.

Team Member Contribution

Briefly summarize the contribution of each of your team members.

All members: Attended 2 meetings during the week

- *Arthur*: Create & prep google document for formatting, Use Case #1 (Tutor Sign Up) + corresponding state chart, Data-flow Diagram, Document Formatting & Submission
- *Eric*: Created Functional/Non-functional requirements and ERD
- *Jason*: Created Use Case #2 and Sequence Chart
- *Gurbir*: Created Use Case # 3 (Sign up for session) + corresponding sequence chart.