User Guide

Workshop in Data-Centered Crowdsourcing, Spring 2022

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The following pages contain detailed information regarding our project, and the required steps one should take in order to run it himself, divided into two sections: 'Running Our Project' and 'Our Key Features'.

For more information regarding our project, features, and motivation, please check out our final presentation slides.

Additional useful links:
www.tauadvisor.tk
Our Github repo
Our final presentation video

Updates Following The Final Presentation:

- **The infrastructure for connecting to the TAU Database:**
  A new table 'TAUData' was added to the database according to your requirement that we should support receiving data from TAU in order to only allow students that took a course to rate/comment on it. (More on the database structure below).
  Now, a user can only rate/comment on a course if he registered with his TAU email, and TAUData indicates that the student whose mail is the user's mail actually took the course.

- **Search By Lecturer:**
  Was changed following your comment on the lack of context of the feature. Now, searches by lecturer will return all the courses that the lecturer in question has ever lectured, with a reference to the university's website where the specifics about the upcoming semester are in.

First Section - **Running Our Project**

We understand that being a Lecturer/TA is a hard job. We really do. This is why we decided to deploy our project to an Azure debian VPS, which will stay online for you to enjoy a live demo of our website - www.tauadvisor.tk.

Note that following our discussion in class, we do not allow users to rate/comment on courses unless we got confirmation from TAU that they actually took them.
For testing purposes, we have unlocked (added to TAUData) 4 courses for each of your mail addresses - slavanov@post.tau.ac.il and kathyr@mail.tau.ac.il.
Therefore, when you register with one of these emails, 4 courses will be unlocked for you to rate/comment on. If you wish to add other emails with unlocked courses, you can contact itayalroy@gmail.com, or of course, run the website locally and edit the database manually.

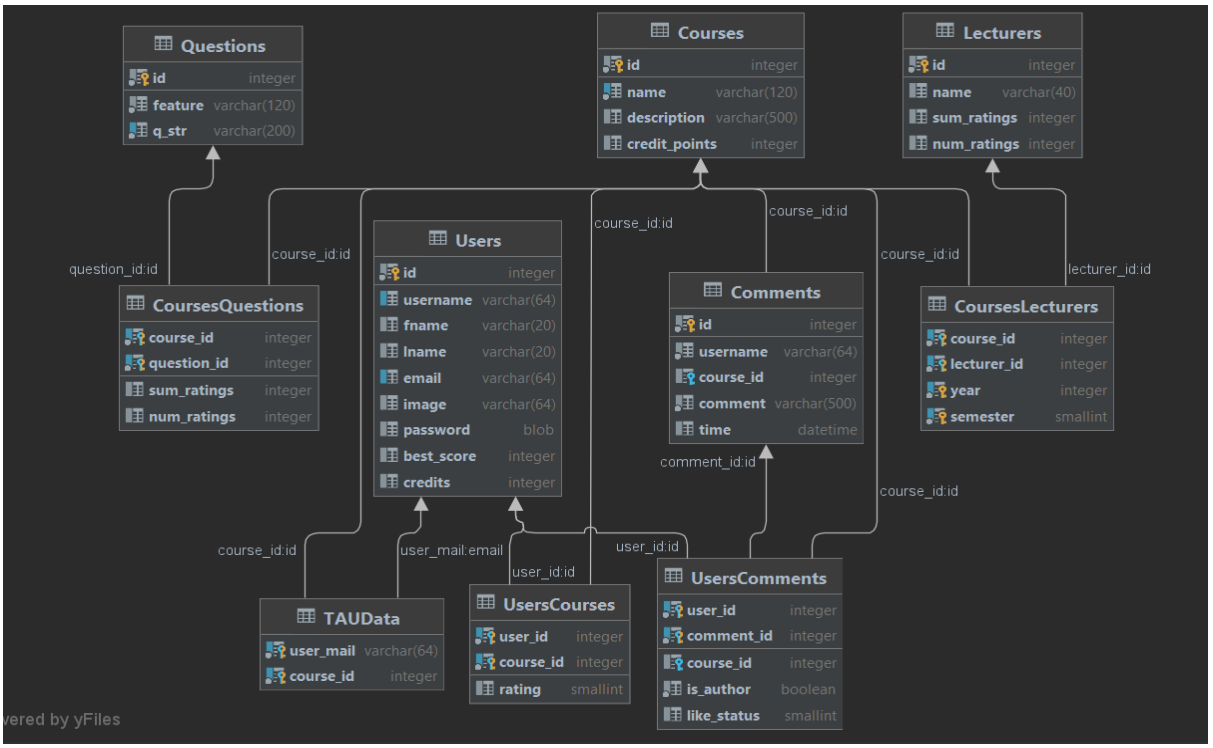
If you wish to run our project locally, we have provided detailed instructions to do so in the readme on our Github repo.

Second Section - **Our Key Features**

- Database
- Search Engine
- Course Page
- Game
- Recommendation System
- Personal Profile
- Login & Register
- ★ **Challenges**

Our Database

Our database consists of 10 tables. On the following page we give an overview of them:



The tables Courses, Users, Lecturers, and Comments are self-explanatory by their names and field names. The others aren't that trivial:

- TAUData was added according to your requirement that we should support receiving data from TAU in order to only allow students that took a course to rate/comment on it. It consists of tuples of the kind (tau mail, course id), which represents that the user associated with the mail tau mail took the course course id. We assume that TAU provides us this information.
- UsersCourses- each row represents that the user has rated the course (general rating).

- UsersComments- each row represents a connection between a user and a comment- it might be the case of a user liking/disliking a comment, composing it, etc.
- CoursesLecturers- each row represents that a lecturer has lectured a course.
- Questions - each row represents a feature of the courses we ask for in the game and the wording of the question that we ask in the game regarding this feature.
- CoursesQuestions - each row represents the average rating of the feature question_id for the course course_id.

Search Engine

Search by either course/lecturer name on the database, where search by lecturer will get all the courses the lecturer ever taught. In addition, partial search is allowed, and a search without keywords will return all the courses available.
Users can sort the results by parameters by picking, for any parameter available, a specific rating. The user can choose one or more parameters and the results will be sorted in ascending order of courses that are closest to the chosen ratings.
This is done by creating a parameters vector where each entry is the rating value that was chosen and calculating the euclidean distance from each course.
On the results page the courses that are marked “Completed” are courses that the user took and didn't rate yet and “Rated” are courses that the user took part in and rated. Navigating directly from the results page to each of the courses’ profiles is possible.

Course Page

Presents the data we’ve gathered on the course divided by features -
the difficulty, time-consuming, relevance to job interviews, math-heavy, and CS-theory heavy (these features are database rows and can be easily modified). Each course has its own comment section where only users who completed this course can comment freely, and all users can like/dislike comments. The comments are ordered by the like-dislike ratio.

Game

We use the game of snake in order to collect the rating data from the students.
Before starting to play, the student needs to choose a course to rate, from the courses he has already taken according to the data in TAU’s database.
The game includes questions about different aspects of the course and as long as a player has yet to finish answering these questions, he cannot be disqualified.
After that, the player can continue playing for fun, gain fame and reach first place in the high scores table. After the game is over, the user will not be able to rate this course again.

Recommendation System

We took a fairly simple user-based collaborative filtering approach in our recommendation system (a.k.a the For You page).
When recommending courses to a user, we firstly find the k~log(n) closest users to him in terms of shared courses ratings (we take the students with the smallest average difference in ratings on shared courses with some thresholds. This could be easily changed to a different metric).
We then find the highest-rated courses among this group of students and recommend our user only those that he has not taken yet (according to the TAUData database).

Personal Profile

We chose to present a progress bar on the personal profile page. The bar increases by the number of credits a course is worth only after that course has been rated by the user, in order to motivate users to play the game.

Login & Register

Only by using your TAU email, your data will synchronize with TAU's database. Regardless, Username and Email have to be unique.

Challenges

We have solved several challenges along the way:

- **Motivation to rate**: Firstly the rating is done through a fun game. Additionally, we added the option to keep playing after you've finished rating, which gives users motivation to reach the high-scores table and gain eternal fame.
- **Playing on a course you haven't actually completed**: This was a serious concern early on but we do not allow it anymore, thanks to the new TAUData table in our database.
- **Spammers**: we now only allow students to comment on courses/rate them only if TAU confirmed they took them, which means fewer spammers and more real student reviews.
- **Avoiding disloyal ratings**: Your personal analytics are built on all your answers, so a dishonest answer will lead to incorrect recommendations, and you won't actually be able to enjoy the benefits of our platform.