Group 6 CS:4400:0001 - Database systems Project description version

1 1. Description of project

The platform to be built will serve as a channel between students, textbooks and tutors. They will be able to set their availability to arrange personalized services by utilizing the database. Given the fact that the cost of textbooks are increasingly high, our system helps students to find the cheapest and fastest renting or buying options using the database. Furthermore, they can look up our approved answers, solutions to the problems, as long as setting up a meeting with our approved tutors.

2. Requirements (business purpose, problems trying to solve, what questions will we answer) Business Purpose:

• To build a platform for textbook rental and sales, as well as online tutoring. It must keep track of all registered students, textbooks (and solutions) requested by students, and all the transactions made, including both renting or purchasing.

• Tutors are hired and paid hourly. In our system, we just store the information of tutors. Students can just ask questions. All arrangements with regard to payments, frequency of meeting, etc. are left up to the tutor and the tutee.

• Revenue comes from selling/renting books and students paying membership fees to get tutoring, or advertising

3. **Example of problems to solve/Questions to answers:** Answering these questions require complex queries which joins many tables together.

• What are the most popular subjects

• Who are the most popular tutors

• What time intervals have excess of students/tutors

• What are the most popular textbooks

• Who are the least active tutors?

• What are the most needed majors?

...

3**. Assumptions:**

• One tutor/student uses one account only.

• Tutoring limited to only practical subjects (cannot help with field work, lab procedures, etc.)

• All hired tutors are professional enough to answer any on-topic question the project will not go bankrupt.

4. Scope (what data will be captured)

• All Users: Personal, contact, address, and billing information, Degree level, Academic information avalability, language preferences

• Students only: Subjects that need help with

• TextBooks: Stocking information Demand, supply, pricing shipping information

5. Design approach (high level logical groups and relations)

1) Users/Students:

Each student when register with the Chegg system will have one artificial key called Student ID. All other attributes depend on this key. We will store all students purchases in order and payment table.

2) Book:

It's straightforward: to keep track all the books we have. ISBN is the key of the book.

3) Textbook solution:

All the available solutions to the textbooks exercises. Book question_number and ISBN combination is the key of this table.

4) Tutor:

This table keeps track of all registered tutors of the system. Information including name, major, degree, idle or not... we also interested information such as how many likes/dislikes the tutor gets from students. Tutor ID is the key.

5) Question:

All the questions asked by students. Information to store includes question topics and contents. QuestionID is the key.

6) Expert answer:

Record all the answers of the tutors to some of the questions. This answer is for a specific question. Users/students can vote the answer if they find it useful.

7) Answer review:

Whenever a student put a review to an answer, students can review many answers and one answer can be reviewed by many students. So StudentID and AnswerID combination is the key of this table.

8) Answered by:

Connect tutors and questions. One question can be answered by many tutors and one tutor can answer many question. TutorID and QuestionID are the keys of this table.

9) Finds:

Indicate which Questions (in which textbooks) are looked up by students. All StudentID, ISBN and Question ID are keys of this table.