**Database Systems (22C:144)**

**Part 1: Project Description**

**Due: 2/8/2017**

**Group 5**

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**All group members contributed equally to this deliverable**

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**- Description of project:**

**Coursera:** The primary objective of our database project will be to keep track of different types of courses offered and to keep track of which institutions are offering the said courses. Our application will also keep track number of students enrolled in certain learning tracks. The database would be able to track which courses are popular, to which student financial aid has been given, course duration as well as grouping courses by their subject area.

**- Requirements of the project:**

What is the business purpose or need?

The business need is for personal and professional development through online learning by courses created by universities like Stanford, John Hopkins, Princeton etc. Tracking: courses offered, financial aid offered, students enrolled, popular courses in several specializations. Certificate recognition after completing courses helps in knowing that the student is knowledgeable.

What is the problem you are trying to solve?

Learning outside the classroom, help people develop on demand skills, learn at their own pace, place, and time, achieve genuine certificate, recognized around the world after successful course completion. Help thousands of students to get knowledge from nation’s top universities.

What questions you will be answering?

What courses are popular? Can I get financial aid? Which technologies are on demand? What skills professionals need from capable employees? Which universities offer the most useful courses? Who has completed certain learning tracks? Who is the instructor of the course? Which instructor is highly rated?

**- Assumptions of the project:**

We assume that there is only one account per student, institution offering courses has only one account as well. We allow duplicate courses through differing institutions. We assume that instructors know the course they are teaching. We assume that by setting up transaction status to success or failure, we complete the transaction process, we will not store debit/credit card details. Student can drop the course at any time etc.

**- Scope of the project:**

Things that are in scope include student information, university details, course details, instructor’s information, courses offered, courses being taken, popular courses, financial aid. We will track which courses are popular, areas of specialization etc.

For us, the following materials are out of scope and will not be tracked - To provide degree after completing the course. We will not track student personal details. We will not track if there is conflict between student and instructor.

— [WILL ADD MORE DATA OBJECTS IN FUTURE]

- **Project Design Approach:**

The following groups of data will make up many of our tables.

**University**

Holds Universityinformation, courses they offer. **University\_ID** identifies unique university, **Courses\_ID** indicates list of all courses offered by university. **Instructor\_ID** indicates instructors working in that university, **Student\_ID** is used to maintain all the student records

**Student**

This table holds information pertained to a Student. Students are identified by their unique **Student\_ID**, student name can be maintained in **Name** column, student date of birth can be stored in **Date\_of\_Birth** column**, Enrolled\_Course** indicates courses currently enrolled by a student, **Competed\_Courses** indicates courses completed by a student, **Financial\_Aid** indicates if student has received financial aid or not (Yes or No), **Certificate** indicates whether student has achieved certificate during course study, **Gender** indicates the gender of the student.

**Course**

Keeps track of courses offered by several universities: **Course\_ID** is used to uniquely identify courses, **Popularity** indicates if it is known highly, low or medium, **Domain** indicates the area of computer science which course belongs, **Duration** indicates the time required to complete the course (can include **Start\_Date** and **End\_Date** seperately), **Financial\_Aid** indicates if course offers financial help, has Student\_ID to pair up student, **Instructor\_ID** indicates which course is taught by which instructor.

**Transaction**

Keeps track of transaction details. Has **Transaction\_ID** as primary key, **Transaction\_Status** is to identify success or failure, **Student\_ID** to link the transactions made by students.

**Instructor**

Keeps track of instructor details. Has **Instructor\_ID** as primary key. **Course\_ID** indicates course taught by instructor. Instructor belongs to university, indicated by **University\_ID**, **Name** indicates instructor’s name, **Rating** indicates how efficient instructor can deliver the course content, **Gender** indicates the gender of the instructor.

[WILL ADD MORE DATA OBJECTS IN FUTURE]