COMP 6115 Database Process/Design

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Project Final Report

Project Name: fiGRE Out Website

Submitted to

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**Introduction**

The **Graduate Record Examinations** (**GRE**) is a [standardized test](http://en.wikipedia.org/wiki/Standardized_test) that is an admissions requirement for most [graduate schools](http://en.wikipedia.org/wiki/Graduate_school) in the [United States](http://en.wikipedia.org/wiki/United_States). Created and administered by [Educational Testing Service](http://en.wikipedia.org/wiki/Educational_Testing_Service)(ETS) in 1949, the exam aims to measure verbal reasoning, quantitative reasoning, analytical writing, and critical thinking skills that have been acquired over a long period of time and that are not related to any specific field of study. The GRE General Test is offered as a computer-based exam administered at [Prometric](http://en.wikipedia.org/wiki/Prometric) testing centers.

GRE has become a very important part of the examination for any student who wants to pursue higher education overseas. To score well in this examination, practice is definitely required. And students from different countries take coaching and tutoring to crack this examination in a better way. In our project, we demonstrate a GRE practice session wherein students can take up a practice examination as a preparation tool.

We are developing this website for making students more convenient to practice for the examination. This is a useful site for the users who are going to write GRE test. Using this website, the student can access all the information regarding GRE such as what is GRE test, when the examination is conducted, how to register to it, which are the test locations and the format of the exam etc. We also allow the users to create their own accounts so that they can create their own sessions of practicing the GRE test. For the beginners there will be a sample test so that they can understand what exactly is GRE test. Time is very important factor in exams like GRE, GMAT and other competitive exams and we have considered it as well.

**Motivation**

There is no specific motivation for the project we have done. But we had our own experiences we faced as students taking the GRE exam. When we took the test earlier, we faced many problems in finding out the best website. Even though we have many websites available, we didn't feel any better. This reason has influenced us to develop a website and be convenient to students and based on our own interests we decided to build this website. The aim is to make this website as friendly as possible to the students and gain good score.

**Requirements**

Platform: PHP

Database: MySQL Workbench

Server: SQL server

Front-end: HTML, Javascript

**Model :**

**Table -Members:**

It stores the details of the registered users; information like username, password etc.

For each of the user registered we store the below information.

**Statistics:**

It stores the information of the current question user has to answer and the number of questions already finished.

**practicetestdata:**

It stores the information of the practice test number and the question number in that test, the correct option of each question and user answered option, also the matching between them.

**praticeexams:**

It stores the information of current practice test id of the user.

**loginattempts:**

It stores the time user has logged in. And based on this information we are checking for number of loginattempts user is doing.

**lessons:**

Lessons table stores the information of main category and sub category. The lessons are saved as images in a folder and when the user clicks on the tags we get the path from lessons table.

**comments:**

We are also storing the reviews as images. So, the comments table contains the path of comment where it is saved in the project folders.

**Datasets Used:**

Here are some sample questions we have used in our website.

A particular stock is valued at $40 per share. If the value of a share increases 50%, then decreases 50% and then increases 20%, what is the final value of a share?

1. **48**
2. **36**
3. **38**
4. **40**
5. **44**

**Ans : b**

In how many ways can teams of 3 students be selected from a group of 7 students?

1. **14**
2. **21**
3. **28**
4. **35**
5. **42**

**Ans: d**

If it takes Eric 4 hours to paint the ceiling of a building and it takes Mathew 8 hours to do the same job, how long would it take to do the job if both painters worked simultaneously ?

1. **24/3**
2. **18/3**
3. **12/3**
4. **8/3**
5. **4/3**

**Ans:d**

The questions are saved in XML file and the correct answers of each question are saved in attribute Cpattern from the practicetestdata table.

**Experimental Setup:**

Starting from the localhost

Step1: Start Apache and MySQL server in XAMPP

Step2: Go to localhost/GRELogin/login.php

Step3: Sign Up

Step4: Login

Step5: Take the test

Step6: Score well in GRE!

We have tested our project in real time with about 15-20 users. We have asked them to take the practice tests.

**Results:**

For the users we have tested we were able to capture the data appropriately in database.

**Description of the Project:**

Using the skills of webpage development, we created a **Home Page** on which a new user can create an account with ‘Sign up’ button and also a registered user can log in with his/her credentials. While a user is registering to the website, we are validating the user credentials (like username, password, minimum 6 character length, etc). We check for the existing user with the same email id in the database and notify the person who registers or create a new user login data.

The homepage have three sections namely ‘Home’, ‘Sample Test’ and ‘About GRE’.

**Home:** We can go to the Home page any time with the Home button.

**Sample Test:** The Sample Test button redirects to the sampletest.php file using which we allow the user to take a sample test to give a basic idea of the type of questions.

**About GRE:** The About GRE button redirects to the aboutTheTest.php file which shows all the details of the exam. This page also has a link that can redirect to the official GRE website for more information regarding the exam fee.

We have created Sign up And Log in feature so that a user can have his own profile. Once the user has logged in, it will redirect to that particular user's profile page. We have created four tabs in this page namely 'Practice', 'Statistics', 'Settings' and 'Lessons'.

In **Settings** page user can change his name and password.

In **Practice** tab we have displayed the different type of questions of exams. And the user can select the type of questions he wants to practice. We are using the XML for loading the files.

* We have categorized each question and show it (in terms of tags) when it is displayed.
* We are using the XML to save all the questions.

The Quantitative reasoning section of the GRE revised General Test contains four types of questions:

* Quantitative Comparison Questions
* Multiple-choice Questions — Select One Answer Choice
* Multiple-choice Questions — Select One or More Answer Choices
* Numeric Entry Questions

Each question appears either independently as a discrete question or as part of a set of questions called a Data Interpretation set. All of the questions in a Data Interpretation set are based on the same data presented in tables, graphs or other displays of data. Below are descriptions, directions and samples of each type of question.

**Quantitative Comparison Questions:** Questions of this type ask you to compare two quantities Quantity A and Quantity B and then determine which of four statements describes the comparison.

### Multiple-choice Questions - Select One or More Answer Choices: These questions are multiple-choice questions that ask you to select one or more answer choices from a list of choices. A question may or may not specify the number of choices to select.

### Numeric Entry Questions: Questions of this type ask you either to enter the answer as an integer or a decimal in a single answer box or to enter it as a fraction in two separate boxes — one for the numerator and one for the denominator. In the computer-delivered test, the computer mouse and keyboard are used to enter the answer.

### Data Interpretation Sets: Data Interpretation questions are grouped together and refer to the same table, graph or other data presentation. These questions ask you to interpret or analyze the given data. The types of questions may be Multiple-choice (both types) or Numeric Entry.

We have populated 50 questions in every category of questions to make our website more useful and realistic.

We also have a **Review** button wherein a user can review the solutions of all other users who have attended the question and the way they got the answer for it. By default, we give one solution for a user to review.

There is a tag for every question on the page wherein when a user clicks on that tag, it redirects to that particular category of lesson in quantitative so that the user can get the study material from the lesson, learn it and then return back to the question and answer it and move on.

There is a **Statistics** tab which shows all the statistics of the right and wrong answers given and on what topics the user needs more practice. The Statistics tab takes all the data of user answers and calculates the distribution of section scores. (We have used Javascript to show the statics)

The aim of this project is to make the students practice the examination pattern in a better way and score high. Since GRE is a percentile based exam, the students performance taking the exam simultaneously also plays a vital role. We try to give the user a new feature to check answer for every question and to "share" his answer with a comment as to why he feels its the correct answer. Hence, when we solve a question, we shall also know, how others are trying to figure out answers and how others are thinking towards solving a problem. We also provide statistic chart to show the areas of improvement for the students in the 3 sections of the examination namely, quantitative, verbal and analytical writing. We also use database to store the registered students and if there is a multiple invalid username or password from the same ip address, we block that particular node and save it in the database. This enhances the security of the individual account. We will show the implementation in detail in the further presentations.

**Barriers**

We have implemented our code in such a way that it blocks the user if he attempts to login with incorrect credentials for more than 5 times in 2 hours from the same IP address. We took more time on implementing it.

**References**

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