ONLINE EVALUATION SYSTEM

Problem Statement

The Online Evaluation System needs to be designed as a website specific to meet its requirements. The registered users can evaluate themselves on different technologies in a general manner or in a module-specific manner. Each test can comprise of 30 or 60 questions depending on the user's choice. The user may choose the level of difficulty, which is provided as simple, medium or high. A negative grading of –0.5 is introduced to prevent the user from guessing the answers. Each right answer secures the user a score of 1 point.

The website (www.onlineevaluation.com) provides the service to its registered users only. The users need to register themselves by making the required payment through a Credit Card. The membership is valid for a period of 1 year from the date of registration. Each user is required to register by providing the necessary details as mentioned below:

UserID, Name, Address1, Address2, City, Pin, State, Country, email, Password, Alternate Password question and Alternate Password answer.

Upon registration, the user is set to logged-in state. The date of registration is set to the current date. The date of expiry is set to the next date after 12 months from the current date. The users need to renew their membership by making the required payment through a Credit Card. The membership needs to be renewed within one month of end of subscription. Any user who tries to login during this one month period would be disallowed from doing so. A message stating the reason would be displayed to the user, prompting him/her to renew the membership.

The user logs in to the site by providing his user id and password which is verified by the system. Upon successful authentication, the user name is displayed with a welcome message. The Login Status is set to true. A separate log-in facility is provided to the Site Admin. Any user who forgets his password can avail the 'password question option' and log-in by providing the one word answer to his password question. Upon successful authentication, the user is then immediately required to provide a new password, which will be used for the next log-in process. The user now needs to login-in with the new password. The log-in process is repeated.

A user who has successfully logged-in can avail the facility of changing his/her password. The old password and new password are obtained from the user, and upon authentication of the old password, the change is effected.

A user can update his profile including the password question and answer by logging-in. The same update process also allows the user to modify his password. All the user details other than user id date of registration and last date of interaction can be modified.

A user's profile is completely deleted if the user has not renewed his membership even after 1 month of end of subscription. All the related user information is deleted. Deletion of a user's profile is done by the Site Admin. It is hence desirable to allow the Site Admin to send an email notification informing the user about the end of subscription.

Logout process

The login status is set to false during this process.

Technology and modules

The different technologies and modules on which tests can be taken are maintained by the Site Admin. A test paper can be generated on a given technology or on a specific module in a given technology. It is required to provide options to add, update or delete any of these. In case of deleting (making a given technology or module unavailable), it is suggested that the questions related to them be however retained.

Questions

As regards to maintaining the question details, the following information needs to be stored:

Question Name, Technology, Module, Option1, Option2, Option3, Option4, Answer and LevelOfDifficulty.

Additional information like number of times a question is correctly answered, wrongly answered or unanswered (collectively known as question frequency information) is also kept track of for every question. This allows the Site Admin to decide if any ambiguity regarding the question exists.

The evaluation process

A logged-in user can choose a technology and level of difficulty. The test can be taken for a given technology or only the selected module. The question paper is generated, by the system by randomly choosing the desired number of questions (30 or 60) from the database.

Upon successful completion of the test, the details of the test are stored. The question frequency information also needs to be updated. The score obtained by the candidate is computed and displayed. The ideal duration for each test would be a maximum of 45 or 90 minutes, depending on the number of questions.

If the user wishes to save his paper, the Questions and user's answers are also stored. If the score obtained is the highest for the category of the test then a congratulatory message is displayed. The highest score record is considered only for those tests which have been completed within the ideal duration. The test category is uniquely determined for the combination technology, module, level of difficulty and number of questions.

REPORTS

I. User Reports

1. List of technologies and modules available
(Technology description, Number of modules, Module Description)

2. Highest score by the user in a given module
(userID, module name, technology name, score)

3. Highest score by the user in a given technology
(userID, technology name, score)

4. List of tests taken by a user.
(UserID, Name, TestID, TestDate, Technology, Module, total questions, right answers, wrong answers, unanswered, level of difficulty, score)

5. View profile information.
(UserID, Name, Address, email, Alternate Password question, Alternate Password answer, date of registration, date of expiry)

II. Admin Reports

1. Questions available for a given module
(Module name, technology name, number of questions)

2. Questions available for a given technology
(Technology name, number of questions)

3. Total number of tests taken by all the users
(Date, total tests, number of users who have taken the tests)

4. View maximum unanswered / wrongly answered questions
(QuestionID, NumTimesOccured, NumTimesRight, NumTimesWrong, NumTimesUnanswered,)

5. Question Statistics by QuestionID
(QuestionID, Technology, Module, Question, Option1, Option2, Option3, Option4, Answer, NumTimesOccured, NumTimesRight, NumTimesWrong, NumTimesUnanswered, Level of difficulty)

6. List of active and inactive users
Based on ascending order of DateOfRegistration
(UserID, Name, address, state, country, email, DateOfRegistration, DateOfExpiry)

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