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E-Learning

S. Jambunathan[1], **Suriyaprabha. J**[2]

Assistant Professor, Department of Computer Science, Sri Krishna Arts and Science College, Kuniamuthur, Coimbatore, India[1]

B.Sc., Computer Science, Department of Computer Science, Sri Krishna Arts and Science College, Kuniamuthur, Coimbatore, India[2]

Abstract: E-Learning is defined as all forms of electronic supported learning and teaching, which are procedural in character and aim to effect the construction of knowledge with reference to individual experience, practice and knowledge of the learner. Information and communication systems, whether networked or not, serve as specific media to implement the learning process. E-learning is essentially the computer and network enabled transfer of skills and knowledge. E-learning refers to using electronic applications and processes to learn. E-learning applications and processes include Web-based learning, computer-based learning, virtual classrooms and digital collaboration.

Keywords: e-Learning, collaborative learning.

1. INTRODUCTION

The increasing advances of Internet Technologies in all application domains have changed life styles and interactions. With the rapid development of knowledge sharing site, Collaborative learning is an important for teaching, learning methods and strategies. Interaction between the students also student with the teacher is important for student to gain knowledge. Based on the four basic teaching styles formal authority, demonstrator or personal model, facilitator and delegator, today combined between facilitator and delegator style is responsible for student learning. It is student centered and the teacher as facilitates the material and activities, but learning becomes part of valuable and effective when they collaborate with each other, and as the teacher who will delegates and facilitates the responsibility of learning to the students. In this paper, we introduce an effective question answering Q&A system for collaborative learning, which can act not just like a virtual teacher, but also virtual discussion for student. With the proposed system, brings a new Q&A system, student can attach their question when they want collaborate using collaborative learning capitalize on one another's resources and skills. Students can ask their questions to the group when they want to collaborate with others, asking one another for information, evaluating one another's ideas, then each of the answer will compare with encyclopaedia database.

2. SYSTEM ANALYSIS

2.1 EXISTING SYSTEM

An online existing system was chosen as the corpus for the task. Existing system is a free, web-based, collaborative, multilingual encyclopaedia project supported by the non-profit existing system Foundation.

2.2 PROPOSED SYSTEM

An automated Q&A system in collaborative learning operates proposed work based on the question answering knowledge base. When a student needs some information, he or she can ask a question through a designed interface. When a new asked question enters the system, query is created. Then other students will response the question with answering and evaluating one another's ideas by vote. This representation is then compared with the representations of data base. A similarity percentage is given between the student answer and any existing data base. After the teacher manually answer the question, the new Q&A set is formed and entered into the question answering knowledge base. When student meeting some difficulties or having no difficulties, a student can see what problems other students have encountered in learning now and in the past and see the answers or solutions the teacher offered by browsing the knowledge base.

3.HYPER TEXT MARKUP LANGUAGE (HTML)

HTML is an application of the Standard Generalized Markup Language (SGML), which was approved as an international standard in the year 1986. SGML provides a way to encode hyper documents so they can be interchanged. SGML is also a Meta language for formally describing document markup system. Infact HTML uses SGML to define a language that describes a WWW hyper document's structure and inter connectivity.

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Following the rigors of SGML, TBL bore HTML to the world in 1990. Since then, many of us have it to be easy to use but sometimes quite limiting. These limiting factors are being addressed but the World Wide Web Consortium (aka W3c) at MIT. But HTML had to start somewhere, and its success argues that it didn't start out too badly.

Database:
A database is simply a collection of used data just like phone book. MySQL database include such objects as tables, queries, forms, and more.

Tables:
In MySQL tables are collection of similar data. With all tables can be organized differently, and contain mostly different information- but they should all be in the same database file. For instance we may have a database file called video store. Containing tables named members, tapes, reservations and so on. These tables are stored in the same database file because they are often used together to create reports to help to fill out on screen forms.

Relational database:
MySQL is a relational database. Relational databases tools like access can help us manage information in three important ways.

- Reduce redundancy
- Facilitate the sharing of information
- Keep data accurate.

Fields:
Fields are places in a table where we store individual chunks of information.

Primary key and other indexed fields:
MySQL use key fields and indexing to help speed many database operations. We can tell MySQL, which should be key fields, or MySQL can assign them automatically.

Controls and objects:
Queries are access objects us display, print and use our data. They can be things like field labels that we drag around when designing reports. Or they can be pictures, or titles for reports, or boxes containing the results of calculations.

Queries and dynasts:
Queries are request to information. When access responds with its list of data, that response constitutes a dynaset. A dynamic set of data meeting our query criteria. Because of the way access is designed, dynasts are updated even after we have made our query.

Forms:
Forms are on screen arrangement that make it easy to enter and read data. we can also print the forms if we want to. We can design form our self, or let the access auto form feature.

Reports:
Reports are paper copies of dynaset. We can also print reports to disk, if we like. Access helps us to create the reports. There are even wizards for complex printouts.

Properties:
Properties are the specification we assigned to parts of our database design. We can define properties for fields, forms, controls and most other access objects.

4. FUNDAMENTAL DESIGN CONCEPTS

System design is a "how to" approach to creation of a new system. System design goes through 2 phases. They are
- Logical design
- Physical design

Logical design reviews the present physical system, prepares input and output specifications, makes edit security and control specifications Physical design maps out the details of the physical system, plans, system implementation, device a test and implementation plan.

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4.1 Input design:

Input design is the process of converting the user-oriented. Input to a computer based format. The goal of the input design is to make the data entry easier, logical and free error. Errors in the input data are controlled by the input design. The quality of the input determines the quality of the system output. The entire data entry screen is interactive in nature, so that the user can directly enter into data according to the prompted messages. The users are also can directly enter into data according to the prompted messages. The users are also provided with option of selecting an appropriate input from a list of values. This will reduce the number of error, which are otherwise likely to arise if they were to be entered by the user itself.

Input design is one of the most important phases of the system design. Input design is the process where the input received in the system are planned and designed, so as to get necessary information from the user, eliminating the information that is not required. The aim of the input design is to ensure the maximum possible levels of accuracy and also ensures that the input is accessible that understood by the user. The input design is the part of overall system design, which requires very careful attention. If the data going into the system is incorrect then the processing and output will magnify the errors. The objectives considered during input design are, Nature of input processing .Flexibility and thoroughness of validation rules .Handling of properties within the input documents .Screen design to ensure accuracy and efficiency of the input relationship with files .Careful design of the input also involves attention to error handling, controls, batching and validation procedures .Input design features can ensure the reliability of the system and produce result from accurate data or they can result in the production of erroneous information.

4.2. Output design

The output form of the system is either by screen or by hard copies. Output design aims at communicating the results of the processing of the users. The reports are generated to suit the needs of the users .The reports have to be generated with appropriate levels. In our project outputs are generated by asp as html pages. As its web application output is designed in a very user-friendly this will be through screen most of the time.

4.3. Database design

The database design involves creation of tables that are represented in physical database as stored files. They have their own existence. Each table constitute of rows and columns where each row can be viewed as record that consists of related information and column can be viewed as field of data of same type. The table is also designed with some position can have a null value. The database design of project is designed in such a way values are kept without redundancy and with normalized format.

5. TESTING AND METHODLOGIES

System testing is the state of implementation, which is aimed at ensuring that the system works accurately and efficiently as expect before live operation, commences. It certifies that the whole set of programs hang together System testing requires a test plan that consists of several key activities and steps for run program, string, system and user acceptance testing. The implementation of newly design package is important in adopting a successful new system

Testing is important stage in software development. System test is implementation should be a confirmation that all is correct and an opportunity to show the users that the system works as they expected It accounts the largest percentage of technical effort in software development process. Testing phase is the development phase that validates the code against the functional specifications. Testing is a vital to the achievement of the system goals. The objective of testing is to discover errors. To full-fill this objective a series of test step such as the unit test, integration test, validation and system test where planned and executed.

Unit testing

Here each program is tested individually so any error apply unit is debugged. The sample data are given for the unit testing. The unit test results are recorded for further references. During unit testing the functions of the program unit validation and the limitations are tested. Unit testing is testing changes made in a existing or new program this test is carried out during the programming and each module is found to be working satisfactorily. For example in the registration form after entering all the fields we click the submit button. When submit button is clicked, all the data in form are validated. Only after validation entries will be added to the database.

Unit testing comprises the set of tests performed by an individual prior to integration of the unit into large system. The situation is illustrated in as follows

Coding-> Debugging ->Unit testing -> Integration testing

The four categories of test that a programmer will typically perform on a program unit

1. Functional test
2. Performance test

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3. Stress Test
4. Structure test

Functional test involve exercising the code with nominal input values for which the expected results are known as well as boundary values and special values.
Performance testing determines the amount of execution time spent in various parts of unit program through put and response time and device utilization by the program.
A variation of stress testing called sensitivity testing in same situations a very small range of data contained in a bound of valid data may cause extreme and even erroneous processing or profound performance degradation.
Structured testing is concerned with a exercising the internal logic of a program and traversing paths. Functional testing, stress testing performance testing are referred as "black box" testing and structure testing is referred as "white box" testing.

Output testing
Asking the user about the format required by them tests the output generated by the system under consideration .It can be done in two ways, One on screen and other on printer format. The output format on the screen is found to be correct as the format designed n system test.

System testing
In the system testing the whole system is tested for interface between each module and program units are tested and recorded. This testing is done with sample data. The securities, communication between interfaces are tested, system testing is actually a series of different tests whose primary purpose is to fully exercise the computer based system although each test has a different purpose all work to verify that all system elements properly integrated and perform allocate function.

Validation testing
Software validation is achieved through a series of test that demonstrates the conformity and requirements. Thus the proposed system under consideration has to be tested by validation and found to be working satisfactorily. For example in customer enters phone number field should contain number otherwise it produces an error message similarly in all the forms the fields are validated

Testing results
All the tests should be traceable to customer requirements the focus of testing will shift progressively from programs Exhaustive testing is not possible To be more effective testing should be which has probability of finding errors

6. CONCLUSION AND FUTURE ENHANCEMENT

Thus the project is developed in aim to share the subject related information and other details to the website which can be viewed by every registered users.. This reduces time consuming problems, storage problems moreover the cost of travelling for each user is reduced. In future the project can be developed as android application which can be used by the users. The android application would be much more effective and user friendly.

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