Online Aptitude Test

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Abstract: The purpose of on-line aptitude test system is to take online test in an efficient manner and no time wasting for checking the paper. The main objective of on-line aptitude test system is to efficiently evaluate the candidate thoroughly through a fully automated system that not only saves lot of time but also gives fast results. For students they give papers according to their convenience and time and there is no need of using extra thing paper, pen etc. This can be used in educational institutions as well as in corporate world. Can be used anywhere any time as it is a web based application (user Location doesn’t matter). No restriction that examiner has to be present when the candidate takes the test. Every time when lecturers/professors need to conduct examinations they have to sit down think about the questions and then create a whole new set of questions for each and every exam. In some cases the professor may want to give an open book online exam that is the student can take the exam any time anywhere, but the student might have to answer the questions in a limited time period. The professor may want to change the sequence of questions for every student.

I.INTRODUCTION

This project assesses students by conducting online aptitude objectives tests. The tests would be highly customized. This project will enable educational institutes to conduct test and have automated checking of answers based on the response by the candidates.

The project allows administrator to create their own tests. It would enable educational institutes to perform tests, quiz and create feedback forms. It asks administrator to create his/her set of questions. The result of the response would be available to the administrator of the question set. Further the set/result would be displayed to system of the student. This project would be helpful for creating practice tests, say for educational institutes and as a feedback form.

Online Aptitude Test is being launched because a need for a destination that is beneficial for both institutes and students. With this site, institutes can register and host online Aptitude Test. Students can give exams and view their results. This site is an attempt to remove the existing flaws in the manual system of conducting exams. Purpose Online Aptitude Test System fulfils the requirements of the institutes to conduct the exams online. They do not have to go to any software developer to make a separate site for being able to conduct exams online.

They just have to register on the site and enter the exam details and the lists of the students which can appear in the exam. Students can give exam without the need of going to any physical destination. They can view the result at the same time. Thus the purpose of the site is to provide a system that saves the efforts and time of both the institutes and the students.
Online Aptitude Test System is a web application that establishes a network between the institutes and the students. Institutes enter on the site the questions they want in the exam. These questions are displayed as a test to the eligible students. The answers enter by the students are then evaluated and their score is calculated and saved. This score then can be accessed by the institutes to determine the passes students or to evaluate their performance.

Online Aptitude Test System provides the platform but does not directly participate in, nor is it involved in any tests conducted. Questions are posted not by the site, but users of the site. The site requires an institute to register before posting the questions. The site has an administrator who keeps an eye on the overall functioning of the system. The site gets revenue by charging the institutes each time they want to conduct the exam. The system entitled “Online Aptitude Test System” is application software, which aims at providing services to the institutes and providing them with an option of selecting the eligible students by themselves. It is developed by using J2EE technology and related database.

II.EXISTING SYSTEM

The first problem is that there are loads of hard copied documents being generated. This brings us to the age-old discussion of keeping information in the form databases keeping the same on sheets of paper. Keeping the information in the form of hard-copied documents leads to the following problems:

I. Lack of space – It becomes a problem in itself to find space to keep the sheets of paper being generated as a result of the ongoing discussion. The documents being generated are too important to be ill-treated.

ii. Filing poses a problem – Filing the documents categorically is a time consuming and tedious exercise.

iii. Filtering is not easy – It becomes hard to filter relevant documents for the irrelevant ones if the count of the same crosses a certain manageable number.

iv. Reviewing becomes time-consuming – All the process done manually at the centers and all the records are maintained on the papers. So the maintenance of the record is very difficult in the departments and as well as it’s very difficult for the workers to check the record.

The Existing system is paper based, time consuming, monotonous, less flexible and provides a very hectic working schedule. The chance of loss of records is high and also record searching is difficult. Maintenance of the system is also very difficult and takes lot of time.

v. Result Processing is slow due to paper work and requirement of staff.

III.PROPOSED SYSTEM

To solve these problems they required a computerized system to handle all the works. They required a web based application that will provide a working environment that will be flexible and will provide ease of work and will reduce the time for report generation and other paper works.

The main purpose behind the proposed system is to provide a comprehensive computerized system, which can capture, collate and analyze the data from these wards and evaluate the impact of the program.

CONSTRAINTS As this system is based on client server technology, so for normal operation minimum of 64 MB RAM will be required on all clients.

ASSUMPTIONS In general it has been assumed that the user has complete knowledge of the system that means user is not a naïve user. Any data entered by him/her will be valid. To make the software as user friendly as possible but at the same time keeping in minds user requirements.

• Server OS should be Windows NT/2000/XP.

• Client PC should be Windows 9X/NT/WorkStation or Windows 2000 with latest service pack.

DEPENDENCIES It depends that the one should follow the international standards for the generating the User ID & should fill the related information in the proper format.

IV.METHODOLOGY

The establishment and use of sound engineering principles in order to obtain economically developed software that is reliable and works efficiently on real machines is called software engineering.

Software engineering is the discipline whose aim is:

1. Production of quality software
2. software that is delivered on time
3. cost within the budget
4. satisfies all requirements.

Software process is the way in which we produce the software. Apart from hiring smart, knowledgeable engineers and buying the latest development tools, effective software development process is also needed, so that engineers can systematically use the best technical and managerial practices to successfully complete their projects.

A software life cycle is the series of identifiable stages that a software product undergoes during its lifetime. A software lifecycle model is a descriptive and diagrammatic representation of the software life cycle. A life cycle model represents all the activities required to make a software product transit through its lifecycle phases. It also captures the order in which these activities are to be taken.

A. Life Cycle Models
There are various life cycle models to improve the software processes.

- WATERFALL MODEL
- PROTOTYPE MODEL
- ITERATIVE ENHANCEMENT MODEL
- EVOLUTIONARY MODEL
- SPIRAL MODEL

1. Waterfall model diagram:

WATERFALL MODEL
This model contains 6 phases:

- Feasibility study
  The feasibility study activity involves the analysis of the problem and collection of the relevant information relating to the product. The main aim of the feasibility study is to determine whether it would be financially and technically feasible to develop the product.

- Requirement analysis and specification
  The goal of this phase is to understand the exact requirements of the customer and to document them properly (SRS).

- Design
  The goal of this phase is to transform the requirement specification into a structure that is suitable for implementation in some programming language.

- Implementation and unit testing
  During this phase the design is implemented. Initially small modules are tested in isolation from the rest of the software product.

- Integration and system testing
  In this all the modules are integrated and then tested altogether.

- Operation and maintenance
  Release of software inaugurates the operation and life cycle phase of the operation. The phases always occur in this order and do not overlap.

System Analysis:

1. Authorizing and authenticated user based on username and password.
2. Recording candidate’s response to every question.
3. Checking whether the given response is correct or not.
4. Keeping history of test taken by the user.

Algorithm

IMPLEMENTATION

A. Microsoft .NET Framework
The .NET Framework is a new computing platform that simplifies application development in the highly distributed environment of the Internet. The .NET Framework is designed to fulfill the following objectives:

To provide a consistent object-oriented programming environment whether object code is stored and executed locally, executed locally but Internet-distributed, or executed remotely. To provide a code-execution environment that minimizes software deployment and versioning conflicts. To provide a code-execution environment that guarantees safe execution of code, including code created by an unknown or semi-trusted third
part. To provide a code-execution environment that eliminates the performance problems of scripted or interpreted environments. To make the developer experience consistent across widely varying types of applications, such as Windows-based applications and Web-based applications. To build all communication on industry standards to ensure that code based on the .NET Framework can integrate with any other code.

The .NET Framework has two main components: the common language runtime and the .NET Framework class library. The common language runtime is the foundation of the .NET Framework. You can think of the runtime as an agent that manages code at execution time, providing core services such as memory management, thread management, and remote, while also enforcing strict type safety and other forms of code accuracy that ensure security and robustness. In fact, the concept of code management is a fundamental principle of the runtime. Code that targets the runtime is known as managed code, while code that does not target the runtime is known as unmanaged code. The class library, the other main component of the .NET Framework, is a comprehensive, object-oriented collection of reusable types that you can use to develop applications ranging from traditional command-line and graphical user interface (GUI) applications to applications based on the latest innovations provided by ASP.NET, such as Web Forms and XML Web services.

The .NET Framework can be hosted by unmanaged components that load the common language runtime into their processes and initiate the execution of managed code, thereby creating a software environment that can exploit both managed and unmanaged features. The .NET Framework not only provides several runtime hosts, but also supports the development of third-party runtime hosts.

For example, ASP.NET hosts the runtime to provide a scalable, server-side environment for managed code. ASP.NET works directly with the runtime to enable Web Forms applications.

.NET Framework provides simple properties to adjust visual attributes associated with forms. In some cases the underlying operating system does not support changing these attributes directly, and in these cases the .NET Framework automatically recreates the forms. This is one of many ways in which the .NET Framework integrates the developer interface, making coding simpler and more consistent.

Unlike ActiveX controls, Windows Forms controls have semi-trusted access to a user's computer. This means that binary or natively executing code can access some of the resources on the user's system (such as GUI elements and limited file access) without being able to access or compromise other resources. Because of code access security, many applications that once needed to be installed on a user's system can now be safely deployed through the Web. Your applications can implement the features of a local application while being deployed like a Web page.

World-Class Tool Support. The ASP.NET framework is complemented by a rich toolbox and designer in the Visual Studio integrated development environment. WYSIWYG editing, drag-and-drop server controls, and automatic deployment are just a few of the features this powerful tool provides.

Power and Flexibility. Because ASP.NET is based on the common language runtime, the power and flexibility of that entire platform is available to Web application developers. The .NET Framework class library, Messaging, and Data Access solutions are all seamlessly accessible from the Web.

ASP.NET is also language-independent, so you can choose the language that best applies to your application or partition your application across many languages. Further, common language runtime interoperability guarantees that your existing investment in COM-based development is preserved when migrating to ASP.NET.

Simplicity: - ASP.NET makes it easy to perform common tasks, from simple form submission and client authentication to deployment and site configuration. For example, the ASP.NET page framework allows you to build user interfaces that cleanly separate application logic from presentation code and to handle events in a simple, Visual Basic - like forms processing model. Additionally, the common language runtime simplifies development, with managed code services such as automatic reference counting and garbage collection.

Manageability: - ASP.NET employs a text-based, hierarchical configuration system, which simplifies applying settings to your server environment and Web applications. Because configuration information is stored as plain text, new settings may be applied without the aid of local administration tools.

Security: - With built-in Windows authentication and per-application configuration, you can be assured that your applications are secure.
B. Microsoft SQL Server

Microsoft SQL Server is a Structured Query Language (SQL) based, client/server relational database. Each of these terms describes a fundamental part of the architecture of SQL Server.

A database is similar to a data file in that it is a storage place for data. Like a data file, a database does not present information directly to a user; the user runs an application that accesses data from the database and presents it to the user in an understandable format.

A database typically has two components: the files holding the physical database and the database management system (DBMS) software that applications use to access data. The DBMS is responsible for enforcing the database structure, including, maintaining the relationships between data in the database. Ensuring that data is stored correctly and that the rules defining data relationships are not violated. Recovering all data to a point of known consistency in case of system failures.

There are different ways to organize data in a database but relational databases are one of the most effective. Relational database systems are an application of mathematical set theory to the problem of effectively organizing data. In a relational database, data is collected into tables (called relations in relational theory).

When organizing data into tables, you can usually find many different ways to define tables. Relational database theory defines a process, normalization, which ensures that the set of tables you define will organize your data effectively.

CONCLUSION

Online aptitude tests will help people especially students to get easy access to quality aptitude questions. Every test is divided into different sections like Mathematics, Vocabulary and General Knowledge. User can choose any test according to his need or in which section he/she has problems. Every question will be evaluated then and there and the user will be provided with the correct option for the wrong answer.

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