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7. Introduction

This a very rare system, though found in books but not online. This system shall help student post their questions and view others question and answer. This online system shall help to create new question for answer and in respect to which faculty can share their answer.

This system is developed using the help of JSP Servlet and the data being maintained by MY-SQL and Netbeans used as the development environment.

We here would be presenting some of the features.

e.g. Maintaining Profile and Post Questions, Post Answer by faculty etc.

Our main focus on some of the features is: -

* Home –
  + Profile
  + Change Password
  + Change Photograph
* Question (by Student)
  + Create
  + View
* Answer (By faculties)
  + Create
* Registration /Login
  + Student
  + Faculty
* The application will enable a student/faculty to register with the application.
* The application will enable student to perform activities such as search for question and answer.
* The application will enable only registered user to do anything.

# Company Overview

## Ideal Management Group Pvt. Ltd.

***Ideal Management Group*** has large group of software developers coming from different backgrounds. We are able to balance product development efforts and project durations to your need for the business. ***Ideal Management Group*** also work in the area of website development, web based software development and Intranet based software development and software maintenance and independent software testing with a local project management team.

***Ideal Management Group*** is a Software Development company started with an idea to enhance, promote and provide various Business Enterprise Solutions to businesses worldwide.

***Ideal Management Group*** delivers high quality software and customized e-business solutions that reflects the in depth knowledge and understanding of emerging technologies in today's fast growing competitive world. Our team comprises of people who have a passion for their area of work and believe in bringing the best for their company's clients.

***Ideal Management Group*** also serves software consultancy and any type of technical assistance for your organizations. ***Ideal Management GroupPvt. Ltd.*** promising you for off shoring works. We are dedicated to our work. Our motive is to create High Landmark in Software Industries with our work as early as possible.

1. Analysis
   1. Objective of project

Proposed System

* **Home** – This will be the home page for all the users and for viewing any topics options will be available over here. This will help us login into own Account and then carrying out any operations that are available after login.
* **Profile** – This page is available to view the profile. This profile can belong to the account holder or can be of any member who is there in the list. Profile page also provides with the option of editing. The editing is possible of own account.

* **Answer** – This option is similar to the answer/comment services that are available on every website. In this the user can create any pole regarding a particular question and any of the only faculty member can reply to his/her pole via another message.
* **Question** –This is through which student can share thoughts on a common topic/ Question. This is the way by which student come along.

This site though a remake but is an indispensable work for understanding different things and how those things interact with each other and how the whole system works. This is basically a practical implementation of the work, which is already being carried out. But we are implementing with new tools, so it is different.

Objectives to be fulfilled

While developing any software there is no single best approach that can be applied in all circumstances. The best approach is the one, which is, most appropriate to a particular organization. This will be determined by

*Nature of Organization.*

*The organization structure.*

*The general state of the system.*

While developing the proposed system we have kept in mind the objectives, which centers around the following parameter:

Security and Integrity

Security and Integrity of data is the primary objective, which is kept in the mind all the time. Data that is entered by one person should not get tempered or altered by any unauthorized person.

Standard checks

The third issue that has to be kept in mind is that there should be imposed some standards or restriction on the data entered in the form, this will keep check on the erroneous data entries, for example, setting up the minimum data value, automated generation of data, serial number etc.

Updating problems

In the existing system updating is a problem, thus in the new system the problem of addition, updating and deletion are to be made easy.

# ***Project Category***

# ***RDBMS (Relational Database Management Software)***

A high-performance client/server relational database–management system (RDBMS) for the Microsoft Windows Linux operating systems. MySql is part of the Microsoft BackOffice family of server products. RDBMS’s are used in high-volume transaction-processing environments such as online order entry systems, data warehousing, decision-support applications, and e-commerce.

MySql includes the following features:

* A distributed management framework for centrally managing all servers running MySql in an organization.
* Built-in data replication to copy information throughout an enterprise not only to MySql databases but also to Oracle, IBM DB2, Sybase, and other databases
* The Web Assistant for populating a Web server with SQL data for Internet or private intranet use
* Microsoft Distributed Transaction Coordinator for creating distributed transaction-based applications across multiple servers
* Integration with the security features of the Windows NT platform
* A high-performance, scalable, multithreaded parallel architecture
* Scalable dynamic locking architecture for page-level and row-level locking
* Data warehousing and online analytical processing (OLAP) enhancements
* Support for OLE Automation stored procedures
* A query processor that supports the complex queries used in decision support, data warehousing, and OLAP applications
* Wizards that ease tasks for administrators and programmers
* Support for Microsoft Management Console (MMC)
* Tools for profiling and tuning a server’s performance

# ***OOPS (Object Oriented Programming Approach)***

OOPS based developers are familiar with classes. Classes are definitions or blueprints of objects that will be created at runtime. Classes define the properties, methods, fields, and events of objects. If the term fields is new to us, it simply means public variables exposed by the class; fields are the “lazy way” to do properties. Together, properties, methods, fields, and events are generically called members of the class. If a class has one or more methods that do not contain any implementation, the class is said to be abstract. In JAVA, you cannot instantiate abstract classes directly; instead, we must inherit from them. In JAVA6, it was possible to create a class that was just method definitions and then to use the Implements keyword to inherit the interface. We could actually instantiate the interface in JAVA6, but because it did not have any implementation code, there was no point in doing so .In JAVA, you can create a class that has implementation code instead of just the interface, and then mark the class as abstract. Now, other classes can inherit from that abstract class and use the implementation in it or override the implementation as needed. These are new concepts to JAVA developers. In the past, JAVA had only interface inheritance, but JAVA has “real” inheritance, known as implementation inheritance. In JAVA, interfaces are separate from classes. In JAVA8, you created interfaces by creating classes with method definitions, but no implementation code inside those methods. A JAVA class can implement any number of interfaces; it can inherit from only one base class. Classes have a number of possible characteristics that can be set, and that are stored in the metadata. In addition, members can have characteristics. These characteristics include such items as whether or not the class or member is inheritable.

* 1. Requirement gathering
  2. Hardware requirement
* Processor: A general-purpose microprocessor with 2GHz or Higher clock speed.
* Primary Memory: 2GB or Higher RAM.
* Secondary Memory: 500 GB of Hard Disk Space (including SQLITE installation).
* Microsoft Windows 10
  1. Software requirement
* Client on Internet – Web Browser, Operating System(Any)
* Client on Intranet – Client Software, Web Browser, Operating System(Any)
* Web server – Tomcat (Any), Operating System(Any)
* Database Server – MY-SQL, Operating System(Any)
* Development End – Netbeans (J2EE, JAVA, JSP, Servlets, HTML), MY-SQL, Operating System, Web Server.

Tools / Platform.

About the Java Technology

Java technology is both a programming language and a platform.

# The Java Programming Language

The Java programming language is a high-level language that can be characterized by all of the following buzzwords:

|  |  |
| --- | --- |
| * Simple | * Architecture neutral |
| * Object oriented | * Portable |
| * Distributed | * High performance |
| * Interpreted | * Multithreaded |
| * Robust | * Dynamic |
| * Secure |  |

With most programming languages, you either compile or interpret a program so that you can run it on your computer. The Java programming language is unusual in that a program is both compiled and interpreted. With the compiler, first you translate a program into an intermediate language called Java bytecodes —the platform-independent codes interpreted by the interpreter on the Java platform. The interpreter parses and runs each Java bytecode instruction on the computer. Compilation happens just once; interpretation occurs each time the program is executed.

# The Java Platform

A platform is the hardware or software environment in which a program runs. We've already mentioned some of the most popular platforms like Windows 2000, Linux, Solaris, and MacOS. Most platforms can be described as a combination of the operating system and hardware. The Java platform differs from most other platforms in that it's a software-only platform that runs on top of other hardware-based platforms.

The Java platform has two components:

* The *Java Virtual Machine* (Java VM)
* The *Java Application Programming Interface* (Java API)

Java VM is the base for the Java platform and is ported onto various hardware-based platforms.

The Java API is a large collection of ready-made software components that provide many useful capabilities, such as graphical user interface (GUI) widgets. The Java API is grouped into libraries of related classes and interfaces; these libraries are known as packages.

# Netbeans

All the tools software developers need to create cross-platform Java desktop, enterprise and web applications. Runs on Windows, Linux, MacOS, as well as Solaris. It is easy to install and use, works right out of the box -- and it is open-source and free.

# Features of the NetBeans (Rich Client) Platform

With the NetBeans Platform, developers get to concentrate on the important parts of an application - the business logic that makes that application unique. The result is a huge savings in time and effort. Some of the features of the platform are:

* ***User interface management***: Windows, menus, toolbars and other presentation components are provided by the Platform. Developers write actions and components that the system will manage - saving time, and producing cleaner, more bug-free code.
* ***Data and presentation management***: The NetBeans Platform contains a rich toolset for presentating data to the user and manipulating that data.
* ***Setting management***: Saving and restoring settings - even complex business objects - is safe, simple, transparent and often automatic
* ***Graphical Editing***: Creating drag and drop, graphical views of data is a snap with the graph library
* ***The Editor***: Available as an extension to the Platform, applications built on NetBeans can use the NetBeans Editor, a powerful and extensible toolset for building custom editors.
* ***The Wizard framework***: A toolset for easily building extensible, user-friendly Wizards to guide users through more complex tasks.
* ***Storage management***: An abstraction of file-based data access. "Files" in the NetBeans paradigm may be local files, or exist remotely, for example, on an FTP server, CVS repository, in an XML file or in a database. Where this data is stored is completely transparent to other modules that work with this data.
* ***A huge selection of additional components***: such as versioning support, specialized editors, specialized UI components, remote data access via FTP and other transports, and convenient ways to work with a variety of Java and internet technologies are available as plugins any application can use.
* ***Internet-based update delivery***: NetBeans-based applications can use Java Web Start technology to deliver custom sets of modules based on a user's role, for complex applications. And a Web Start enabled application is always up-to-date and combines the advantages of centralized management and deployment with the advantages of a rich client user experience. For non-WebStart applications, an optional component is the AutoUpdate module, which downloads updates or new functionality via the web.

# Building on the NetBeans Platform

Developing applications on top of the NetBeans Platform means you are developing on top of the NetBeans IDE's core. The NetBeans Platform is a generic desktop application, and most desktop applications have common requirements - menus, document management, settings and so forth. Instead of writing the same code over and over again, write modules to implement what you need, bundle them up with the NetBeans Platform, and you have a beautiful, branded, cross-platform application.

# ***Consistency***

NetBeans-based applications are write-once, run-anywhere. You get prebuilt components for free and you solve common problems by reusing, mixing and matching them. Use the platform and the modules you develop as the basis for multiple applications that share common logic. The NetBeans Platform is a solid foundation and set of standards for clear design.

# ***Modularity***

Applications based on the NetBeans Platform can install modules dynamically, so users no longer need to download the entire application to get an upgrade or a new release. You can even assemble an application from already existing modules and benefit from the open-source work already done by others. There are lots of useful modules written by the NetBeans community (tasklist, spellchecker, etc.) that are ready to be embedded.

* 1. Feasibility Study

## Feasibility Study

Feasibility is the determination of whether or not a project is worth. The process following in making this determination is called a feasibility study. A feasibility study is conducted to select the best system that meets performance requirements. Once it has been determined that a project is feasible, the analyst can go ahead and prepare the project specification which finalizes project requirements.

The feasibility of the system developed has been discussed in the following points:

### Operational Feasibility

The system being developed is using Netbeans as a front-end tool and My Sql as a back-end tool. The system works under Windows environment PCs which is quite common today and the users of the system are familiar with this environment and also the developed system is menu-driven and user friendly.

The developed system does not require any special trained users since it offers a very user-friendly environment and online help.

User does not have to constantly worry about duplication/loss of data since the system developed would prevent this if it happens.

Information about any customer can be accessed whenever required by using menus. This makes the system user friendly and even a user who doesn’t know computer can access the required information.

Advanced security measures are taken in the hotel management system to prevent unauthorized access, malicious destruction of data.

Due to these reasons the accepted system making operationally feasible.

### Technical Feasibility

Technical analysis showed that the hardware and software requirement is sufficient and Netbeans is suitable for the project.

The system will be developing in the present environment that is Windows. The system runs on Pentium /i3/i5/i7 Computers.

System will be developed using Netbeans as front end too; which has various features like:

Data access features allow us to create databases and front end applications for most popular database formats.

Internet capabilities make it easy to provide access to documents and applications across the Internet from within the application.

Finished application is a true .exe file that uses a run time dynamic link library (DLL) that we can freely distribute.

My Sql is the back-end tool used in the system. It is a relational database package, which is known for security and control. It maintains the integrity of the database, hence there is consistency and reliability.

Since the manual work is required in the existing system and also security could not be maintain in the existing system so it is feasible to switch over to proposed new system.

### Economic/Financial Feasibility

Highlights of the economic feasibility are as follows:

There is no direct cost since the developed system does not require any special hardware e.g. dedicated computer system.

Because of the nature of the system, activities do not require a machine all the time during a normal working day.

The system does not require any new software since licensed Netbeans and My Sql for Windows 7,8,8,1,10 are already there in the computer center under WINDOWS operating system. Software developed under these environments is more user friendly.

Design

**Introduction**

System design provides the understandings and procedural details necessary for implementing the system recommended in the system study. Emphasis is on the translating the performance requirements into design specifications. The design phase is a transition from a user-oriented document (System proposal) to a document oriented to the programmers or database personnel.

System design goes through two phases of development:

1. Logical Design

2. Physical Design

3. Logical and Output Design:

A data flow diagram shows the logical flow of the system. For a system it describes the input (source), output (destination), database (data stores) and procedures (data flows) all in a format that meets the user’s requirement. When analyses prepare the logical system design, they specify the user needs at a level of detail that virtually determines the information flow into an out of the system and the required data resources. The logical design also specifies input forms and screen layouts.

The activities following logical design are the procedure followed in the physical design e.g., producing programs, software, file and a working system. Design specifications instruct the user about what the system should do

The logical design of an information system is analogous to an engineering blue print of an automobile. It shows the major features and how they are related to one another. The detailed specification for the new system was drawn on the bases of user’s requirement data. The outputs inputs and databases are designed in this phase. Output design is one of the most important features of the information system. When the output is not of good quality the users will be averse to use the newly designed system and may not use the system. There are many types of output, all of which can be either highly useful or can be critical to the users, depending on the manner and degree to which they are used. Outputs from computer system are required primarily to communicate the results of processing to users; they are also used to provide a permanent hard copy of these results for later consultation. Various types of outputs

required can be listed as below:

• External Outputs, whose destination is outside the organization

• Internal outputs, whose destination is with the organization

• Operational outputs, whose use is purely within the computer department e.g., program-

listing etc.

• Interactive outputs, which involve the user is communicating directly with

the computer, It is particularly important to consider human factor when designing computer outputs. End user must find outputs easy to use and useful to their jobs, without quality output, user may find the entire system unnecessary and avoid using it. The term “Output” in any information system may apply to either printer or displayed information. During the designing the output for this system, it was taken into consideration, whether the information to be presented in the form of query of report or to create documents etc.

**Other important factors that were taken into consideration are:**

• The actual usage of the planned information

• The information that is necessary for presentation

• When and how often output and their format is needed. While designing output for project based Attendance Compilation System, the following aspects of outputs designing were taken into consideration.

• The outputs (i.e., well formatted table outputs in the screen itself) designed are simple to

read and interpret.

• Format of each output was another important point taken into consideration. Output media, for each output appropriate media is decided whether it will be displayed on screen or will be taken to printer or both.

Other output design related specifications, i.e., how frequently the outputs will be generated, how many pages or sheets approximately it will keep up, what is its planned use and output distribution to users are also taken into account.

These were a few major designing issues, which were taken into consideration, while deciding the output specifications for the system. As direct beneficiary of reports is the user community, they were consulted constantly at every level. Formats and screen design for various reports were identified, taking into account the user requirements. Before finalizing these were given to users for any improvement and suggestions. End users issues taken into consideration were Readability, Relevance and Acceptability.

Once all the output reports to be generated by ACS system were identified, they were given to users for their acceptance. For prototyping various outputs, final outputs models were created with dummy data, before they were finalized.

Output Sources:

Output contents originate from these sources:

• Retrieval from a data source.

• Transmission from a process or system activity.

• Directly from an input source.

The information produced in an output can be presented as

• Tabular contents

• Graphic format

• Using Icons

**Output Definition:**

The output should be defined in terms of:

Types of outputs

• Content-headings, numeric, alphanumeric, etc.

• Format-hardcopy, screen, microfilm, etc.

• Location-local, remote, transmitted, etc.

• Response-immediate with in a period, etc.

**Data items**

The name given to each data item should be recorded and its characteristics described clearly

in a standard form:

• Whether alphanumeric or numeric

• Legitimate and specific range of characteristics

• Number of characters

• Positions of decimal point, arithmetic design, etc.,

**Architectural Design**

**Major Module of Online Suggestion Protal**

User Management  
Suggestion Management System  
Topic information Management  
Security Management  
Performance Management  
Rating Management

Design of database

# ***The Database Design***

In this section introduction to database and other related term is provided. Further a relational schema has been discussed which is used for the database design.

# ***Introduction***

Database and database technology are having a major impact on the growing use of computers. It is fair to say that database play a critical role where computers are used, including business, engineering, medicine, law, education to name a few. The word database is in such common use that we must begin by defining what database is.

Database is a collection of related data stored in a standardized format. By data we mean known facts that can be recorded and that has an implicit meaning. We may consider the collection of words that make up this page of text to be related data and hence to constitute a database.

A database has following implicit properties:

* Database represents some aspect of real world called as Universe of Discourse (UoD).
* A database is a logical coherent collection of data with some inherent meaning.
* A database is designed, built and populated with data for some specific purpose.

In other words, a database has some source from which data are derived, some degree of interaction with the events in real world, and an audience that is actively interested in the contents of the database.

# ***Goals Of Database Design:***

* To satisfy the information content requirement of the specified user and application.
* To provide a natural and easy to understand structuring of information.
* To support processing requirements and any performance objective such as response time, processing time, and storage space.

# ***Table Structure***

1. User\_Info

|  |  |  |
| --- | --- | --- |
| **Column Name** | **Data type** | **Constraint** |
| Regno | Varchar(20) | Primary key |
| Password | Varchar(50) |  |
| Name | Varchar(50) |  |
| Email | Varchar(50) |  |
| Mobileno | Varchar(50) |  |
| Usertype | Varchar(50) |  |
| Uphotoname | Varchar(50) |  |

2. question

|  |  |  |
| --- | --- | --- |
| **Column Name** | **Data type** | **Constraint** |
| question | varchar(20) | Primary Key |
| Description | Varchar(100) |  |
| DateofCreation | Datetime |  |
| Regno | Varchar(20) |  |

3. answer

|  |  |  |
| --- | --- | --- |
| **Column Name** | **Data type** | **Constraint** |
| Id | numeric(18, 0) | Primary Key |
| answer | Varchar(200) |  |
| answerby | Varchar(50) |  |
| DateofPosting | Datetime |  |
| Regno | Varchar(20) |  |

System Role

UserId

LoginName

Password

FirstName

LastName uphoto usertype

p

Email

IS A

Users

Has

Receives

System Log

UserId

Activity

Datetime

Answer

ansId

Details

Date

UserId

Question

Question Id

UserId

Question

Date

Respect By

* 1. ER diagram

Creates

Users

Question

Has

answer

* 1. Data flow diagram

student

Answer

Users

Question

‘0’ Level

‘1’ Level

Faculty

### Use case diagram

Student /Faculty

Query and Answer Software

Student /Faculty

Query and Answer Software

Scope of future application

Software scope describes the data and control to be processed, function performance, constraints, interfaces and reliability. Function describes in the statement of scope are evaluated and in some case refined to provide more detail prior to the beginning of the estimation. Because both cost and schedule estimates are functionally oriented, some degree of decomposition is often useful.

We can implement easily this application. Reusability is possible as and when we require in this application. We can update it next version. We can add new features as and when we require. There is flexibility in all the modules. Scope of this document is to put down the requirements, clearly identifying the information needed by the user, the source of the information and outputs expected from the system.

**Future scope**

It is directly dependent on the lay stone of the project that is we will have to design a system which when the time passes having a better system initially should not become a joke later.

It is highly likely that the scope will change as the web application project moves forward; the web e-process model should be incremental. This allows the development team to “freeze” the scope for one increment so that an operational web application release can be created. The next increment may scope changes suggested by a review of the preceding increment, but once the second increment commences, scope is again frozen temporarily. This approach enables the Web-App team to work without having to accommodate a continual stream of changes but still recognizes the continuous evolution characteristics of most web application. Besides that, the following basic quality in the software always safeguards the future scope of the software.

**Reusability**: Reusability is possible as and when we require in this application. We can update it next version. Reusable software reduces design, coding and testing cost by amortizing effort over several designs. Reducing the amount of code also simplifies understanding, which increases the likelihood that the code is correct. We follow up both types of reusability: Sharing of newly written code within a project and reuse of previously written code on new projects.

**Extensibility**: This software is extended in ways that its original developers may not expect. The following principles enhance extensibility like Hide data structure, Avoid traversing multiple links or methods, Avoid case statements on object type and distinguish public and private operations.

**Robustness**: Its method is robust if it does not fail even if it receives improper parameters. There is some facilities like Protect against errors, Optimize after the program runs, validate arguments and Avoid predefined limits.

**Understandability**: A method is understandable if someone other than the creator of the method can understand the code (as well as the creator after a time lapse). We use the method with small and coherent helps to accomplish this.

**Cost-effectiveness**: Its cost is under the budget and make within given time period. It is desirable to aim for a system with a minimum cost subject to the condition that it must satisfy all the requirements. It can be rectified easily. The entire source code is well structured and commented to ensure clarity and readability.

**Portability**: since it is a internet based application so its portability and usability depends upon the Clint connected with the internet. The interface designed that is the web page designing which is one of the major part of web application because it is the first impression regardless of the value of its contents interface should must grab a potential user immediately

Overview of the document : -

This document contains the system and software requirements in terms of what the system will be and what is expected from the system. This will also highlight the system behavior in terms of queries and reports generated by the system. It contains the user characteristics, access controls, assumptions, and dependencies on the system. The benefit of the system: Reduce in overheads paper works, zero delays in project completion, etc.

Security measures taken

Security is the probability that the attack on a System can be repelled.

Robust appropriate security measures have been taken:

Password protection is enabled in the software so that only the authorized users can access the database.

Limited access is given to the database server so that the data is not tampered with.

An integrated backup module is provided to the end-user so that even a non-technical user can take daily and month-end backups. These backups can later be used in the event of a system crash.