ACKNOWLEGEMENT

We are thankful to the Department Of Computer Technology Government Polytechnic, Nashik for providing us with the best of the facilities.

A successful project is a result of good teamwork, which contains not only the people who put in their logic and hard work but also the people who guided them.

We are extremely grateful for the necessary information, with support provided by Lect. Mr. M. M. Goswami , for his timely suggestion and valuable guidance. We are in debt to his for spending her precious time with us and help us by giving the very important details regarding the project. We would also like to thank for her constant encouragement and guidance to us.

Last but not least we would like to thank all our people who have helped us directly and indirectly in our project.

Submitted by:-

Mast. Khadse Piyush Vilas (126121)

Mast. Kirwe Adway Sanjay (126124)

Mast. Deshpande Pranav S (126112)

Mast. Naik Nitin Ranglal (126131)

Mast. Padma Mayur Sanjay (126133)

Online Examination System

Abstract:

The Online Examination System is easy to use, full-featured and flexible Testing, Examination and Assessment web portal. It allows Administrators to set different examination and question banks for registered students and members. The examination System provides complete functionality of evaluating and assessing student's performance skills. The examination System comprises of Question Bank effectively blended with a whole set of Features. Using different features of the Examination System an administrator can set an exam name, select an examination, and assign questions for examination. The question bank will form the backbone of the automated process and will play an important role in random generation of unique sets of question papers. The more the number of questions the better randomization is achieved.

INDEX:-

Chapter: 1

Introduction

1.1 Project Overview

This project assesses students by conducting online objective tests. The tests would be highly customizable. 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 faculties to create their own tests. It would enable educational institutes to perform tests, quiz and create feedback forms. It asks faculty to create his/her set of questions. Faculty then creates groups and adds related students into the groups. Further the tests are associated with specific groups so that only associated students can appear for the test. The result of the response would be available to the faculty of the question set. Further the result would also be mailed to the student. This project would be helpful for creating practice tests, say for educational institutes and as a feedback form.

1.2 Purpose

- Responses by the candidates will be checked automatically and instantly.
- Online examination will reduce the hectic job of assessing the answers given by the candidates.
- Being an integrated Online Examination System it will reduce paper work.
- Can generate various reports almost instantly when and where required.

1.3 Scope

This project would be very useful for educational institutes where regular evaluation of students' is required. Further it can also be useful for anyone who requires feedback based on objective type responses.

1.4 Definitions, Acronyms

The sub-section provides the definitions of all terms, acronyms, and abbreviations used in this document to understand the SRS properly.

Sr. No.	Terms/Acronyms	Description
1.	Student	User mostly a student who will appear for the examination
2.	Faculty	Another user mostly faculty member, lecturer or examiner who posts set of questions, the available options and correct answers.

Chapter: 2

2 Functional or Specific Requirements

Required software is for conducting on-line `***objective***´type examination and providing immediate results. The system should satisfy the following requirements:

- **Administrator Aspect**

    1. Taking backup of the database
    2. Editing/Deleting/Creating the database.
    3. Adding or expelling faculty
    4. Changing the super password.

- **Faculty Aspect**

    1. Logging into the system.
    2. Creating a test
    3. Posting questions in the above test
    4. Posting multiple options to respective question
    5. Marking correct answer within the given options
    6. Time limit of the test if any.
    7. Whether to randomize the questions
    8. Whether to randomize the options displayed

- **Student Aspect:**

    1. Logging into the system.
    2. Appearing for the examination.
    3. Printing the result at the end of the examination.
    4. Reviewing the given responses.
    5. Signing Out

- **Analysis**

    1. Authenticating users based on username and password
    2. Keeping session track of user activity
    3. Recording candidates' responses to every question
    4. Checking whether the given response is correct or not
    5. Keeping history of test reports of all users

2.1 External Interface Requirements

2.1.1 Hardware Interfaces

Server side hardware

- Hardware recommended by all the software needed.
- Communication hardware to serve client requests

Client side hardware

- Hardware recommended by respective client's operating system and web browser.
- Communication hardware to communicate the server.

2.1.2 Software Interface

Server side software

- Web server software(Apache)
- Server side scripting tools: PHP
- Database tools: MySQL, XML DBMS.
- Compatible operating system: Windows

Client side software

- Web browser supporting JavaScript, refer Browser Compatibility 2.3.1

2.1.3 Third Party Software Interfaces

None

2.1.4 Communication Protocol

Following protocols are required to be permitted on the server side

- HTTP incoming request
- HTTPS incoming request if secure gateway is implemented

Following protocols are required to be permitted on the client side

- HTTP outgoing request
- HTTPS outgoing request if secure gateway is implemented

2.1.5 Assumption and Dependency

1. Roll No. of respective user
2. Faculty have the authority to approve/expel student

2.2 Non-Functional Requirements

- System should be able handle multiple users
- Database updating should follow transaction processing to avoid data inconsistency.

2.3 Software System Attributes

2.3.1 Browser Compatibility

Mozilla Firefox (Recommended)

Version 36.0.4 & above

2.3.2 Globalization Support

The questionnaires and their respective options provided by the faculty may or may not be in English. Hence the questions and their options must be in Unicode format that will accept any Unicode character.

2.3.2.1 List of Locale

The system will mostly be in US English, although the questions and their options may not be in US English. Hence the questions and their options are to be in Unicode format.

2.3.2.2 Content to be localized

The following table lists all the possible area in the system and also mentions whether that area should support Globalization.

Interface Type	**Needs Localization?**
User Interface	Yes*
Emails sent by system,	Yes*
Standard Errors and exceptions logged by system in error log	No
Logos, Images	No
Unit of Measurement (Ex. Length, Weight, Area, Volume, Paper Size etc)	No
Reports	Yes*

*Limited to questionnaires set by user who posted questions.

2.3.3 Security

- Administrator has the highest authority to edit/delete/create database
- Faculty have the authority to add/expel students
- Students can only view their test records.
- Faculty can view all the test records of every student.
- Critical information like passwords should be transferred in encrypted form

2.3.4 Reliability

Data validation and verification needs to be done at every stage of activity.

- Validating user input
- Use of locking mechanism while updating database like transaction processing
- Recovering the transaction using rollback.

2.3.5 Availability

The examination system being an online system should be available anytime.

Constraints:

Though the system should be available 24x7 some features may be restricted.

- Quiz creator may allow the specific test to be available only at certain time like scheduled examination.
- The test may be time limited so the candidates appearing will have limited time to answer the test.

2.3.6 Portability

- The web application will be built using PHP which has support to run on any platform provided the required compilers are available.
- For database either XML or MySQL would be used, that too has extensive support over many popular architectures and operating systems.

Constraints:

Portability would be limited to the support provided by the respective application vendor on various architectures and operating environments.

2.3.7 Performance

The system would be used by multiple users at a time and may grow as time passes; the system would need to implement multithreading to achieve acceptable performance. Further a database connection pool may also be required for assigning faster database connection.

2.4 Database Requirements

Database fields for questions and respective options must be in Unicode format to handle non English characters

2.5 Technologies

This section lists all the technologies for the web based system.

- PHP scripting for server side scripting as it has a very strong support for XML and MySQL.
- XML as database format: The database' performance requirements are not very high and the ability to have custom fields in case the quiz creator needs to add more than expected answer options. This is limited in any other database management system where we have to first specify the maximum number of fields.
- Apache as web server has a tight integration with PHP and is also available for various popular platforms.

2.6 Software

Sublime Text 2 for PHP and XML coding.

Apache as Web server

2.7 Hardware

The recommended hardware specified by the respective software would suffice the needs. The memory and processing power needed would increase as the number of users increase. The estimated hardware requirements are as specified.

2.7.1 Server

The minimum hardware as recommended by all of the software required on server side say web server, operating system and development software

- Processing speed of 1.6 GHz
- 1 GB of RAM
- Network interface

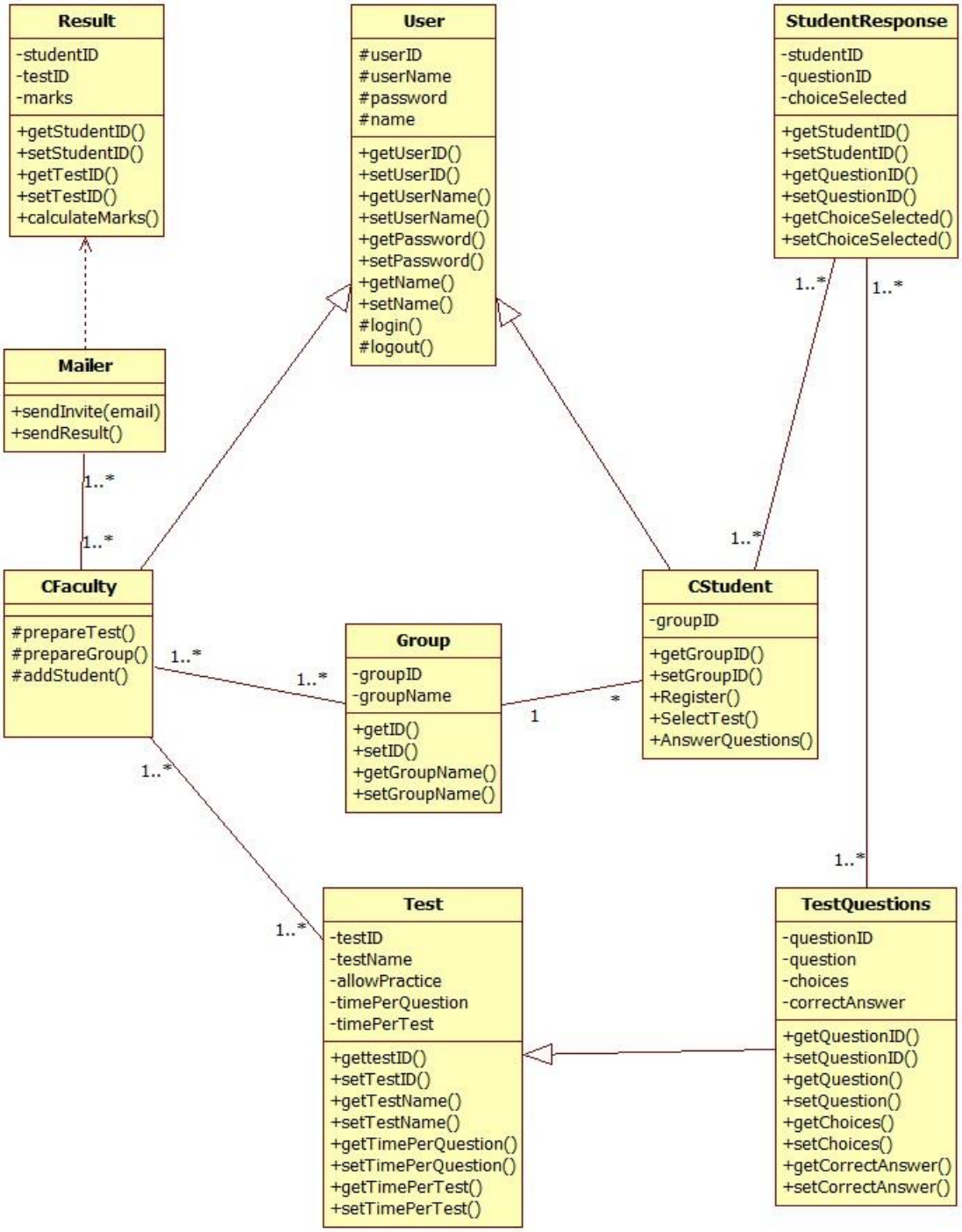
2.7.2 Client

The minimum hardware as recommended by all of the software required on client side say web browser, operating system

- Minimum hardware depending on the operating system used
- True color visual display unit
- User peripherals for better interaction

Chapter: 3

2.8 Class Diagram



2.9 Database Design

Branch Database View:-

148105

Column	Type	Null	Default
que_id	int(4)	No	
que_desc	tinytext	Yes	*NULL*
true_ans	int(5)	Yes	*NULL*
stud_ans	int(5)	Yes	*NULL*

Indexes

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	que_id	0	A	No	

148106

Column	Type	Null	Default
que_id	int(4)	No	
que_desc	tinytext	Yes	*NULL*
true_ans	int(5)	Yes	*NULL*
stud_ans	int(5)	Yes	*NULL*

Indexes

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	que_id	3	A	No	

Exam Database View:-

Column	Type	Null	Default
que_id	int(3)	No	
course_code	int(8)	No	
que_desc	text	No	
ans1	text	No	
ans2	text	No	
ans3	text	No	
ans4	text	No	
true_ans	int(5)	No	

admin_login

Table comments: admin_login

Column	Type	Null	Default
Username	varchar(10)	No	
Password	varchar(10)	No	

answer_sheet

Table comments: answer_sheet

Column	Type	Null	Default
que_id	int(10)	No	
que_desc	varchar(500)	No	
ans1	varchar(150)	No	
ans2	varchar(150)	No	
ans3	varchar(150)	No	
ans4	varchar(150)	No	
true_ans	int(5)	No	
your_ans	int(5)	No	

Physics Database View:-

automobile

Table comments: automobile

Column	Type	Null	Default
Sr_No	int(2)	Yes	*NULL*
Reg_No	int(6)	Yes	*NULL*
S_Name	varchar(30)	Yes	*NULL*
S_Programme	varchar(2)	Yes	*NULL*
Cou_Code	varchar(6)	Yes	*NULL*
Sign	varchar(10)	Yes	*NULL*

civil_1

Table comments: civil_1

Column	Type	Null	Default
Sr_No	int(2)	Yes	*NULL*
Reg_No	int(6)	Yes	*NULL*
S_Name	varchar(29)	Yes	*NULL*
S_Programme	varchar(2)	Yes	*NULL*
Cou_Code	varchar(6)	Yes	*NULL*
Sign	varchar(10)	Yes	*NULL*

Chemistry Database View:-

automobile

Table comments: automobile

Column	Type	Null	Default
Sr_No	varchar(4)	Yes	*NULL*
Reg_No	varchar(6)	Yes	*NULL*
S_Name	varchar(50)	Yes	*NULL*
S_Programme	varchar(30)	Yes	*NULL*
Cou_Code	varchar(10)	Yes	*NULL*
Sign	varchar(5)	Yes	*NULL*

civil_1

Table comments: civil_1

Column	Type	Null	Default
Sr_No	varchar(4)	Yes	*NULL*
Reg_No	varchar(6)	Yes	*NULL*
S_Name	varchar(50)	Yes	*NULL*
S_Programme	varchar(30)	Yes	*NULL*
Cou_Code	varchar(10)	Yes	*NULL*
Sign	varchar(5)	Yes	*NULL*

Chapter: 4

5. Scope for Enhancement

Present system carries certain drawbacks and limitations as listed below

1. Current system provides only multiple choices but single correct answer selection. Faculty may wish to provide multiple choices multiple selection responses.

2. Incase questions and/or answers need to be in graphics, current system has no provision.

3. Unregistered users cannot answer test, they must belong to some group. This is a drawback incase the faculty wants anyone even anonymous users to answer the test.

4. Top score could be displayed on the home page; but this could be easily implemented while programming the home page. Rank page can be implemented too.

Chapter: 6

References

- Sedna native XML http://modis.ispras.ru
- MySQL http://www.mysql.com
- UML official website http://www.uml.org/
- StarUML - The Open Source UML/MDA Platform http://staruml.sourceforge.net/
- Apache Download - https://www.apachefriends.org/
- Tutorials Point (Reference) - http://www.tutorialspoint.com/php/
- W3School Reference(PHP) - http://www.w3schools.com/php/
- W3School Reference(MYSQL) - http://www.w3schools.com/sql/