# ONLINE QUIZ MANAGEMENT

-SOFTWARE REQUIREMENT SPECIFICATIONS

SUBMITTED BY:

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# “ONLINE QUIZ MANAGEMENT”

**A Project report submitted**

**In the partial fulfillment the award of degree of**

**BACHELOR OF TECHNOLOGY**

**IN**

**COMPUTER SCIENCE AND ENGINEERING (2022-2023)**

**BY**

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**(2022-2023)**

**CENTURION UNIVERSITY OF TECHNOLOGY AND MANAGEMENT**

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**(2021-2025)**

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## BONAFIDE CERTIFICATE

This is to certify that the project work entitled **"RESEARCH CENTER FOR DATA SCIENCE AND MACHINE LEARNING"** is a fulfillment of project work done by **A. RAMESH (Reg. No.211801370095)** for the award the degree of **BACHELOR OF TECHNOLOGY** in **COMPUTER SCIENCE AND ENGINEERING, CENTURION UNIVERSITY OF TECHNOLOGY AND MANAGEMENT**, during the academic year **2022-2023**.

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# ACKNOWLEDGEMENT

It is with at most pleasure and excitement we submit our project partial fulfillment of the requirement for the award of Bachelor of Technology.

The project is a result to the cumulate efforts, support, guidance, encouragement and inspiration from many of those for whom we have to give our truthful honor and express gratitude through bringing out this project at the outset as per our knowledge.

I convey my special thanks to our project **Guide Mrs. G. Rama Devi(Asst. Professor)** who has guided, encouraged and tremendously supported me to enhance my knowledge with present working of this project to bring out enriching the quality of project.

I express my appreciativeness to **Mr. R.LAKSHMAN RAO(Asst. Professor) and Head of the Department,** who facilitated us to providing the friendly environment which helped to enhance my skills in present project.

I would also like to extend my gratitude to **Dr. K. V. G. KRISHNA MURTHY, Dean-School of Engineering And Technology, Centurion University of Technology and Management** who has helped us to attain all the requirements of the project.

I convey my sincere thanks to **Dr. RAMANA RAO, Ph. D Registrar of Centurion University of Technology and Management** who provided us with an opportunity to take on project work in well-equipped laboratories of Computer Science Department in our college.

At the outset, we thank to **Sri. G.S.N.RAJU**, beloved **Vice Chancellor of Centurion University of Technology and Management** who is the back bone by providing for completion of this project, Thank you sir.

# DECLARATION

I hereby declare that the project entitled **"ONLINE QUIZ MANAGEMENT"** submitted to the fulfillment of award the degree of **B. TECH (CSE)** in **CENTURION UNIVERSITY OF TECHNOLOGY AND MANAGEMENT**, **ANDHRA PRADESH.**

**A. RAMESH** **Reg.No:211801370095**

# 1.INTRODUCTION:

Welcome to the world of online quiz management with AWP (Advanced Web Platform)! In this digital age, where technology is transforming education and training, AWP offers a comprehensive solution for organizing, conducting, and evaluating quizzes in a seamless and efficient manner. AWP's online quiz management module is designed to meet the needs of educators, trainers, and organizations looking to leverage the power of online assessments. With AWP, you can create and deliver quizzes effortlessly, while providing an engaging and interactive learning experience for participants.

## 1.1 PURPOSE:

The purpose of an online quiz system is to serve as a tool for assessing, evaluating, and enhancing the learning experience in an online or digital learning environment. The primary purpose of an online quiz system is to evaluate students' knowledge and understanding of a subject or topic. It allows educators to assess how well students have grasped the material and identify areas that may require further instruction or review. Online quizzes serve as a form of formative assessment, which means they are designed to provide ongoing feedback and support learning throughout the instructional process. By administering regular quizzes, educators can track students' progress, identify gaps in knowledge, and adjust their teaching strategies accordingly. It can be designed to be interactive and engaging, motivating students to actively participate in the learning process. Features such as timed quizzes, leaderboards, and immediate feedback can create a competitive and stimulating environment that encourages students to put forth their best effort.

## 1.2 SCOPE:

The scope of an online quiz system is broad, encompassing various aspects related to assessment, learning, and technology integration. Online quiz systems can accommodate a wide range of assessment types, including multiple-choice questions, true/false questions, fill-in-the-blank questions, short answer questions, essay questions, and more. The system should be flexible enough to handle different question formats and scoring methods. It often includes a question bank where educators can create, store, and organize a large number of questions. The question bank allows for easy retrieval and reuse of questions in multiple quizzes or assessments. The system should allow for student enrolment in courses or classes, providing a platform for students to access quizzes and participate in assessments. It should offer features for monitoring student progress, tracking completion status, and managing multiple classes or groups of students. An online quiz system should be scalable to accommodate a large number of users and handle concurrent quiz sessions. It should be reliable, ensuring minimal downtime and technical issues during assessments.

## 1.3 DEFINITIONS, ACROYNM AND ABBREVATION:

### 1.3.1 Definition

An academic portal for an online quiz system is a comprehensive platform that incorporates various features and functionalities to support academic institutions, educators, and students in conducting quizzes and assessments.

### 1.3.2 Administrator

The administrator of an online quiz system is responsible for overseeing and managing the overall operation and functionality of the system. Their role involves maintaining the system, ensuring its smooth operation, and supporting the needs of educators and students.

### 1.3.3 System

System refers to the existing system 1 or a new system.

## 1.4 REFERENCES:


1. IEEE 830 Template
2. Moodle Requirements Brainstorming.pdf
3. University of Melbourne – Student Portal (Getting Started Guide)
4. Stakeholder Requirements for Institutional Portals by Liz Pearce, Leona Carpenter, Ruth Martin
5. Detlor, B. (2000). "The corporate portal as information infrastructure: Towards a framework for portal design", International Journal of Information Management, 20(2) 91-101.


## 1.5 OVERVIEW:

An online quiz system is a digital platform designed to facilitate the creation, delivery, and assessment of quizzes or assessments in an online or digital learning environment. It provides educators with a convenient and efficient way to evaluate students' knowledge and understanding of a subject, while also offering students a flexible and interactive method of assessment.

# 2.OVERALL DESCRIPTION:

The Online Quiz Management module in AWP (Advanced Web Platform) is a comprehensive solution designed to facilitate the organization, administration, and evaluation of quizzes in a virtual environment. It provides an intuitive and user-friendly interface that caters to the needs of educators, trainers, and organizations seeking to streamline the quiz management process.

## 2.1 PRODUCT PERSPECTIVE:

The product perspective of an online quiz system refers to how the system fits within the broader context of educational technology and its interactions with users and other systems. The online quiz system should seamlessly integrate with the existing educational environment, such as learning management systems (LMS) or other digital platforms used by the institution. It should be able to exchange data, synchronize user information, and provide a cohesive user experience within the educational ecosystem. System should prioritize the needs and preferences of its users, including educators and students. It should be designed with a user-friendly interface, intuitive navigation, and clear instructions, making it easy for both educators to create quizzes and for students to access and complete

them. The online quiz system should be designed with a mind-set of continuous improvement. It should allow for user feedback and incorporate updates and enhancements based on evolving educational needs, emerging technologies, and user expectations.

## 2.2 SYSTEM INTERFACE:

The system interface of the Center for Online Quiz Management (OQM) involves several components that interact with each other to achieve the center's objectives. These components could include:

- Research teams
- Educational programs.
- Industry and government partnerships.
- Tools and platforms.

## 2.3 USER INTERFACE:

The user interface of the Center for Online Quiz Management (OQM) has several components that interact with its users, including:

1. Researchers.
2. Students.
3. Industry and government partners.
4. General public.

## 2.4 HARDWARE INTERFACE:

The hardware interface of a center for Online Quiz Management can vary depending on the specific needs and goals of the center. However, there are some common hardware components and interfaces that may be present in such a center:

- Servers.
- Storage.
- Networking.
- GPU
- Workstations
- Visualization systems.

## 2.5 SOFTWARE INTERFACE:

The software interface of a center for Online Quiz Management would depend on the specific research goals and needs of the center. However, there are some common software components and interfaces that are likely to be present in such a center:

I. **Data management software**:
To manage large volumes of data, a center for data science and machine learning would need data management software such as databases, data lakes, and data warehouses. These tools help to organize, store, and retrieve data efficiently.

II. **Machine learning and data analysis software**:
To perform machine learning and data analysis tasks, the center would need specialized software packages such as Python's sci-kit-learn, Tensor Flow, PyTorch, and R. These software packages provide a range of machine learning and data analysis algorithms and libraries.

III. **Version control software**:
Version control software such as Git is used to track changes in code and data, and allows researchers to collaborate effectively on code development projects.

## 2.6 COMMUNICATION INTERFACE:

The communication interface of a center for Online Quiz Management is important for collaboration and knowledge sharing among researchers, as well as for outreach to industry partners and the wider research community. Some common communication interfaces may be present in such a center. Overall, the communication interface of a center for data science and machine learning should support effective collaboration and knowledge sharing among researchers within the center and with external partners, as well as outreach and promotion of research findings to the wider research community.

## 2.7 MEMORY CONSTRAINTS:

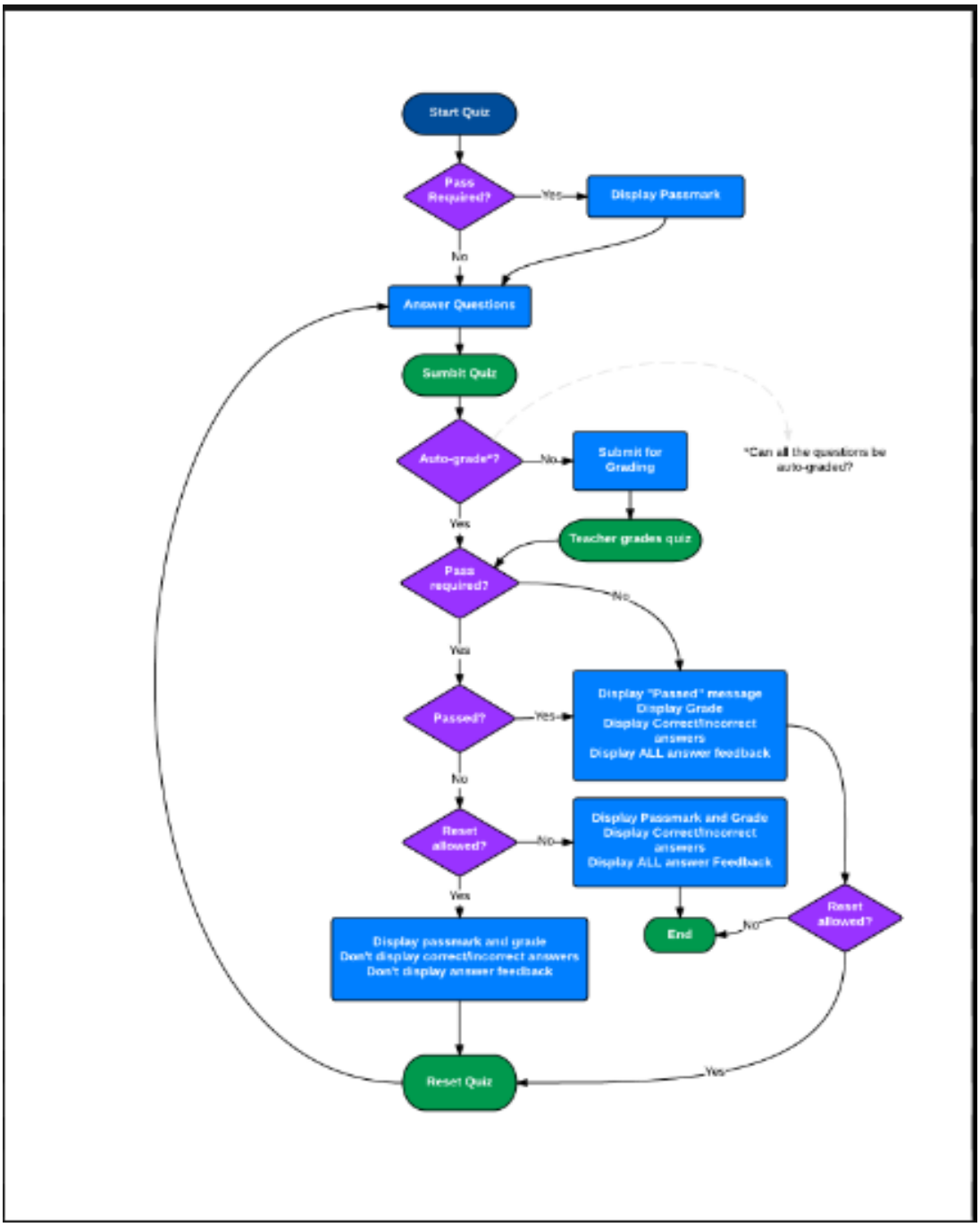
Memory constraints can be a major challenge in a center for Online Quiz Management, particularly when working with large datasets or complex models that require significant amounts of memory. Some common memory constraints may be encountered in such a center. Overall, managing memory constraints is an important consideration in a center for data science and machine learning, and requires careful planning and optimization to ensure efficient use of available resources. Memory constraints will come into play when the size of MySQL grows to a considerable size.

## 2.8 OPERATIONS:

The website executes a number of duties and procedures to promote user interaction and cooperation. A website for communication and technology could include the following important functions:

- Research.
- Education and training.
- Consulting and services.
- Collaboration and partnerships.
- Outreach and communication.

## 3. FLOWCHART


Start Quiz
Pass Required?
Yes
Display Passmark
No
Answer Questions
Submit Quiz
Auto-grade*?
No
Submit for Grading
*Can all the questions be auto-graded?
Yes
Teacher grades quiz
Pass required?
No
Yes
Passed?
Yes
Display "Passed" message
Display Grade
Display Correct/Incorrect answers
Display ALL answer feedback
No
Reset allowed?
No
Display Passmark and Grade
Display Correct/Incorrect answers
Display ALL answer Feedback
Yes
Display passmark and grade
Don't display correct/incorrect answers
Don't display answer feedback
End
No
Reset allowed?
Yes
Reset Quiz

# 4. USE CASE DESCRIPTION / INTRODUCTION:

This use case describes the process of creating and administering a quiz using the online quiz management system. The educator/instructor utilizes the system's features to design and deliver quizzes to the participants.

### 4.1 User Registration:

Users can create an account on the online quiz system by providing their personal information and credentials. They can register using their email addresses or through integration with other authentication methods, such as Google or Facebook. The system verifies the information and creates a unique user profile for each user.

### 4.2 Quiz Creation:

Educators can create quizzes by selecting the appropriate subject, topic, and difficulty level. They can add multiple-choice, true/false, or open-ended questions to the quiz. Educators can also set time limits, assign weights to questions, and define grading criteria. Once created, the quiz is saved in the system and can be assigned to students.

### 4.3 Quiz Assignment:

Educators can assign quizzes to specific classes or individual students. They can set deadlines and specify any additional instructions or resources. Students receive notifications about the assigned quizzes and can access them through their accounts. The system ensures that students can only access the quizzes they are assigned to.

### 4.4 Quiz Taking:

Students can access assigned quizzes through their accounts. They can view and answer each question within the given time limit. The system provides a user-friendly interface for students to navigate through the questions, select options, and submit their answers. The system tracks the time taken for each question and overall quiz completion.

### 4.5 Automated Grading:

After students submit their quizzes, the system automatically grades multiple-choice and true/false questions. It compares the student's answers with the correct ones and calculates the scores accordingly. The system applies predefined grading rules, such as assigning points for correct answers and deducting points for incorrect ones. The graded quizzes are then available for review.

### 4.6 Manual Grading:

For open-ended or subjective questions, educators can manually review and grade student responses. The system provides an interface for educators to view and evaluate each student's answers. Educators can provide comments or feedback and assign scores based on their evaluation. The system calculates the final scores by combining the automated and manual grading components.

**4.7 Quiz Review:**

After a quiz is graded, students can review their submitted answers and compare them with the correct answers. The system displays the scores achieved and provides feedback or explanations for each question. This allows students to understand their strengths and areas for improvement, enhancing the learning process.

## 5. MAIN FLOW:

1. The educator/instructor logs into the online quiz management system using their credentials.
2. The system presents the dashboard, displaying options for quiz management.
3. The educator selects the "Create New Quiz" option.
4. The system provides a quiz creation interface, allowing the educator to define the quiz details such as title, duration, and instructions.
5. The educator proceeds to add questions to the quiz. They can choose from various question types such as multiple-choice, true/false, or fill-in-the-blanks.
6. For each question, the educator enters the question text, options (if applicable), correct answer(s), and any additional media elements (images, videos, etc.) to enhance the question.
7. Once the questions are added, the educator reviews and finalizes the quiz.
8. The system saves the quiz and generates a unique quiz code or link for participant access.
9. The educator shares the quiz code or link with the participants through a communication channel (e.g., email, learning management system).
10. Participants access the quiz by entering the provided quiz code or by clicking the shared link.
11. The system presents the quiz to the participants, displaying one question at a time along with the available options.
12. Participants select their answers for each question and proceed to the next question until they complete the quiz.
13. Upon submission, the system automatically evaluates the answers and calculates the participants' scores.
14. The system generates the results and provides immediate feedback to participants, indicating correct and incorrect answers.
15. The educator can access the participants' quiz results and review individual or overall performance.
16. The system stores the quiz data for future reference and analysis.

17. The use case ends.

## 6. ALTERNATE FLOWS:

- If the educator wants to edit an existing quiz, they can select the "Edit Quiz" option instead of creating a new quiz. They can modify the quiz details, add or remove questions, or make necessary changes.
- In the case of time-limited quizzes, the system can enforce the duration and automatically submit the quiz once the time elapses.
- If participants encounter technical difficulties or disruptions during the quiz, they can contact the educator or system administrator for assistance.

## 7. LOGIN:

By entering a set of credentials that authenticate their identity, a user can access a computer system, website, or application through the login procedure. A login often entails inputting a username and password. A login is used to make sure that only authorized users may access sensitive data or carry out certain tasks inside a system. A login aids in guarding against security breaches and preventing unauthorized access by asking users to input their credentials. For access to the services offered by many websites and applications, users frequently need to create a login.

## 8. SEARCH:

Instead of utilizing hierarchical links, the system must be able to traverse sites using search capability. Academic portals can demand too many clicks and might be challenging to utilize effectively. Students become frustrated when fundamental tasks, like turning in an assignment, require too many steps. Students can easily locate what they're seeking for thanks to a search tool and a hierarchical approach to the academic portal's search functionality.

# 9. USER CHARACTERISTICS:

## 9.1 STUDENT:

The user characteristics of students in an online quiz system may vary depending on various factors such as age, academic level, cultural background, technological proficiency, and motivation. Some common user characteristics of students in an online quiz system include:

Age: Students from different age groups may have different levels of comfort and familiarity with technology, which can impact their ability to use an online quiz system effectively.

Academic Level: The academic level of students, such as elementary, middle, high school, or college, can affect their proficiency in using an online quiz system and their ability to understand and answer quiz questions.

## 9.2 SYSTEM ADMINISTRATORS:

The role of a system administrator in a center for Online Quiz Management is to ensure that the infrastructure, systems, and applications used by the center are functioning properly and securely. Some of the key responsibilities of a system administrator in this context may include:

1. **Setting up and maintaining hardware and software infrastructure**: System administrators are responsible for setting up and maintaining the servers, databases, networking equipment, and other infrastructure that supports the center's data science and machine learning activities.
2. **Monitoring and troubleshooting system issues:** System administrators monitor the performance of the center's systems and applications, and troubleshoot any issues that arise.
3. **Managing security**: System administrators are responsible for ensuring that the center's systems and data are secure, and implementing security measures such as firewalls, access controls, and encryption.
4. **Supporting users:** System administrators provide technical support to users of the center's systems and applications, and help them with any issues or questions they may have.
5. **Planning for future growth**: System administrators work with the center's leadership team to plan for future growth and ensure that the center's infrastructure is scalable and adaptable to new technologies and research directions.
6. **Implementing backup and recovery procedures**: System administrators are responsible for implementing backup and recovery procedures to ensure that data can be recovered in the event of a system failure or data loss.

These are just a few of the key responsibilities of a system administrator in a center for data science and machine learning.

# 10.CONSTRAINTS:

## 10.1 CONSTRAINTS WITH USER INTERFACE:

This system is fairly easy to use and straightforward. All of the system's functionality should be clear to a user with a working knowledge of basic browser navigation.

## 10.2 HARDWARE RESTRICTIONS:

The system should function on the majority of household desktop and laptop machines that support HTML5 and JavaScript.

## 10.3 SOFTWARE RESTRICTION:

Firefox 4 and later, Google Chrome 10 and later, and Internet Explorer 8 and later are all recommended for use with the system.

## 10.4 CONSTRAINTS ON DATA MANAGEMENT:

System must be able to communicate with other components in accordance with their requirements.

## 10.5 OPERATIONAL RESTRAINTS:

The system's operating server places a cap on the number of concurrent users it can handle.

## 10.6 SITE ADAPTATION RESTRICTION:

After the system is created, the component will be modified to work with the overall system

## 10.7 ASSUMPTIONS AND DEPENDENCIES:

The majority of academic portals include a tonne of unnecessary

Features that are never utilized during a class. In addition to introducing certain new

Features that other portal lack, our new system focuses on the characteristics that

Academic institute consumers value the most.

# 11. SPECIFIC REQUIREMENTS:

## 11.1 EXTERNAL INTERFACE:

### 11.1.1: WEB SERVER:

- The web server chosen is Apache:
- Using HTML forms, the user submits data to the web server

- The web server runs PHP as a module, and if the post data is accessible, the PHPscript obtains it.
- The PHP script provides data back to the web server.
- The end-user sees an HTML page as a result from the web server.

### 11.1.2: PHPAPPLICATION:

PHP was used to create the actual programme that will carry out the procedures. A database will be used to store all the data.

### 11.1.3: MYSQL DATABASE:

It’s an open-source SQL database to store all data which communicates with the application on the server.

## 11.2 PERFORMANCE REQUIREMENTS:

Performance requirements are a set of criteria or specifications that specify the speed, capacity, and efficiency with which a system or application must operate. These specifications, which are frequently established by users or stakeholders of the system or application, are used to assess the system's performance and make sure that it satisfies its users' needs.

### 11.2.1 LOGICAL DATABASE SPECIFICATIONS:

All information, with the exception of files that are stored on the disc, will be saved in the database, including user accounts and profiles, discussion data, messages, etc. A solid database architecture is necessary for the database to support concurrent access and maintain consistency at all times.

### 11.2.2 DESIGN CONSTRAINTS:

1. SQL will be used for all communication between the portal program and the database.

2. HTML/CSS will be used to create the portal layout.

3. PHP will be used to create the product.

4. The output needs to be W3C XHTML 1.0 compliant.

5. The source code must adhere to PHP's coding standards.

6. Complete documentation must be available to system administrators .

## 11.3 SOFTWARE SYSTEM CHARACTERISTICS:

The components of the software are as follows:

1.the PHP program and

2.the Apache web server

3. MySQL, the database

### 11.3.1 RELIABILITY:

The dependability of the individual components affects the program's overall dependability.

### 11.3.2 AVAILABILITY:

The system should be available at all times, meaning the user can access it using a web browser, only restricted by the downtime of the server on which the system runs. In case of a hardware failure or database corruption, a replacement page will be shown. Also in case of a hardware failure or database corruption, backups of the database should be retrieved with the MySQL server and saved by the administrator.

### 11.3.3 SECURITY:

1. Passwords will be saved encrypted in the database in order to ensure the user's privacy.

2. The user's IP will be logged.

3. The system will be protected against vulnerabilities such as SQL injection attacks.

### 11.3.4 MAINTAINABILITY:

MySQL is used for maintaining the database and the Apache server takes care of the site. In case of a failure, a re-initialization of the program is recommended.

### 11.3.5 PORTABILITY:

The application is Linux-based and should be compatible with other systems. Apache, PHP, and MySQL programs are practically independent of the OS system which they communicate with. The end-user part is fully portable and any system using any web browser should be able to use the features of the application.