

**SCHOOOL OF COMPUTING**

**DEPARTMENT OF SOFTWARE ENGINEERING**

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# 1. Introduction

# 1.1. Background of the organization

**- Woldia** university was established through the council of ministers Regulation No 223/2011 issued on May 26,2011 G.C. Corner stone for construction activities of the university was laid on Oct ,26,2008 by his Excellency Ato Ayalew Gobezy , former president of the Amhara Regional state , and his excellency Dr. Adhana Haile , former deputy state minister of education, with the first university president Professor Yalew Endawek. Woldia university has two campuses, namely, the main campus called Woldia university and the other one is Mersa campus College of Agriculture.

# 1.2 Statement of the problem

## 1.2.1 Existing system and its Major problems

- The existing Staff Evaluation System encounters several significant challenges that impede its effectiveness and efficiency. Despite meticulous crafting, the system suffers from incomplete implementation, leading to inefficiencies and potential damages to resources like war materials due to under-utilization. Additionally, reliance on manual processes undermines the system's intended digital transformation, while the destruction of materials during war or other incidents poses a threat to its reliability.

- Moreover, the system's decentralization hampers coordination, as separate entities manage student, department, and dean evaluations, leading to fragmentation and inconsistencies. Integration gaps further compound issues, hindering the system from consolidating various evaluation processes into a cohesive platform. Data entry proves arduous and unengaging, as users find the process boring and tiring, impacting the timeliness and accuracy of data input. User reluctance to fill out forms exacerbates this challenge, affecting data quality. Managing and collecting user-filled information remains a labor-intensive task, compounded by resource constraints and the environmental impact of continued paper usage.

- Addressing these challenges requires a holistic approach, including comprehensive assessment and strategic interventions to streamline processes, enhance user engagement, and improve system functionality. The system, although prepared by others, has not been fully implemented across all necessary areas. This incomplete implementation has resulted in inefficiencies and gaps in functionality, leading to potential issues in critical areas such as inventory management and operational effectiveness. One significant consequence of the incomplete implementation is the damage incurred by war material. The lack of proper utilization or integration of the system may have contributed to instances where war material was damaged due to inadequate monitoring, maintenance, or other related factors. This poses a significant risk to operational readiness and overall mission success.

## 1.2.2 Proposed system

- The proposed Paperless Staff Evaluation System for Woldia University is designed to revolutionize the staff performance evaluation process by transitioning from traditional paper-based methods to a streamlined and to provide centralized digital platform. This system will serve as a comprehensive solution for managing the entire staff evaluation lifecycle, offering numerous features to enhance efficiency, transparency, and accountability. The core feature of the proposed system is the provision of customizable digital evaluation forms. These forms can be tailored to various staff positions and specific evaluation criteria, eliminating the need for cumbersome paper documents.

- The proposed system will feature a user-friendly interface that ensures ease of navigation and accessibility for administrators, faculty, and staff. Users will find it easy to input quantitative ratings and qualitative feedback, facilitating comprehensive and balanced performance assessments. The proposed system will automate the entire evaluation workflow from initiation to completion. Administrators will be able to schedule evaluation periods, assign evaluators to staff members, and set deadlines for submission.

- The system will send automated notifications to remind users of upcoming deadlines and pending evaluations. This automation will streamline the process, reduce administrative burden, and ensure that evaluations are completed in a timely manner. The system will also generate detailed performance reports and provide summary statistics and trends over multiple evaluation periods. These insights will help administrators make informed decisions about staff development and performance management. Data security is a critical aspect of the proposed system. The system will implement stringent security measures to ensure that all evaluation data is encrypted and securely stored. User authentication will be required for access, ensuring that only authorized personnel can view or modify evaluation data. This will protect the confidentiality of staff evaluations and maintain the integrity of the data.

## 1.2.3 Advantages of the proposed system

- The proposed system provides several advantages to Woldia University who believe that paperless staff evaluation system with an effective management system is crucial to produce a system that meets the user needs. Paperless staff evaluation system is expected to manage the entire staff evaluation lifecycle, by offering numerous features to enhance efficiency, transparency, and accountability. The following are among the advantages obtained by using this system:

* The system significantly reduces administrative workload and minimizes the time required to conduct evaluations.
* Centralized staff evaluation system.
* It ensures that all evaluations are completed on time and that any delays are promptly addressed.
* Allow for quicker access to evaluation data, accelerating decision-making processes.
* Ensures relevance and accuracy in performance assessments.
* Protect sensitive information from unauthorized access.
* Maintain data integrity and confidentiality.
* Provide valuable insights into staff performance and identifying areas for improvement.
* Ensuring it can accommodate increasing numbers of evaluations and users.
* Facilitating easy adoption and minimizing disruption to current operations
* Provide a more comprehensive and balanced evaluations.
* Enabling staff to receive timely feedback and make necessary improvements promptly.

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# 1.3 Motivation

- The motivation behind developing the Paperless Staff Evaluation System for Woldia University is to address the significant inefficiencies and challenges associated with the existing paper-based evaluation process. The current system is labor-intensive and time-consuming, requiring substantial manual effort for distributing, collecting, and processing evaluation forms, which leads to delays and diverts valuable administrative resources from more strategic tasks. By automating these processes, the proposed digital platform aims to streamline operations, reduce administrative workload, and ensure timely completion of evaluations. Additionally, the lack of a centralized, automated system hampers transparency and accountability, making it difficult to track the progress of evaluations and hold stakeholders accountable. The new system will provide real-time tracking and status updates, enabling administrators to monitor the entire evaluation lifecycle and ensure fair and timely evaluations.

- Improving data accuracy and security is another key motivation. Manual data entry and handling are prone to errors, such as misplacement of forms and incorrect entries, and physical documents are vulnerable to damage and unauthorized access. The digital system will mitigate these risks by providing secure, encrypted storage of evaluation data and ensuring that only authorized personnel can access or modify the information, thereby protecting the integrity and confidentiality of staff evaluations. Furthermore, the ability to customize evaluation forms for different staff positions and criteria is crucial for conducting relevant and precise assessments. The current system’s rigidity often results in generic evaluations that do not accurately reflect individual performance. The proposed system will allow for tailored evaluations, incorporating both quantitative ratings and qualitative feedback, providing a more holistic view of staff performance.

- Promoting environmental sustainability is also a significant motivator. The extensive use of paper in the current system is both costly and environmentally unsustainable. By transitioning to a paperless system, Woldia University will significantly reduce its paper consumption and associated environmental impact, aligning with global sustainability goals and demonstrating the university’s commitment to adopting eco-friendly practices. Moreover, a user-friendly, intuitive interface will enhance user experience and accessibility, enabling stakeholders to complete evaluations efficiently, whether they are on-campus or remote. This flexibility is essential in today’s increasingly digital and mobile world.

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# 1.4. Purpose, Scope and limitation of the project

**1.4.1. Purpose:**

**-** This document outlines the software requirements for the Paperless Staff Evaluation System (PSES) designed for Woldia University. The system aims to replace traditional paper-based staff performance evaluations with a comprehensive digital platform, enhancing efficiency, transparency, and accountability throughout the evaluation process.

**1.4.2. Scope:**

**-** The PSES will automate the entire staff evaluation lifecycle, providing customizable digital forms, automated workflows, real-time progress tracking, and intuitive user interfaces. It will be accessible to students, administrators including department dean, faculty, and staff, facilitating both quantitative and qualitative performance assessments.

# 1.5. Project Goal and Objectives

**1.****5.1. Goals**

- The goal of implementing the described system at Woldia University is to revolutionize the staff performance evaluation process by seamlessly transitioning from traditional paper-based methods to a streamlined, digital platform. This transition aims to modernize and optimize the evaluation process, ultimately improving efficiency, transparency, accessibility, and comprehensiveness. By digitizing evaluation forms and automating workflow processes, the system seeks to eliminate the inefficiencies associated with manual tasks, such as printing, distributing, and data entry. It aims to provide a transparent and standardized evaluation process with clear criteria and procedures, promoting fairness and accountability. The system strives to be accessible to all stakeholders, with an intuitive user interface and customizable forms tailored to various staff positions and evaluation criteria. Ultimately, the goal is to enhance the effectiveness of staff performance evaluations by leveraging digital tools to make the process more efficient, transparent, accessible, and comprehensive, benefiting both staff members and the university as a whole.

## 1.5.2. General Objectives

- The objective is to enhance the effectiveness of staff performance evaluations, leading to fairer assessments, improved accountability, and better-informed decision-making within the university.

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## 1.5.3. Specific Objectives

- The specific objectives of this project are:

* To streamline the staff performance evaluation process
* To establish a transparent and standardized evaluation process
* To make the evaluation system accessible
* To facilitate comprehensive performance assessments
* To automate various aspects of the evaluation workflow

# 1.6. Methodology

## 1.6.1. Data collection method

- The requirement elicitation process was conducted via interview and questionnaire.

* Interview
* Gathering the existing system

Chapter Two:

**2. System requirement specification**

**2.1.Background**

- Woldia University, like many educational institutions, recognized the need to modernize its staff performance evaluation process. Historically reliant on cumbersome paper-based methods, the university faced challenges in managing the evaluation lifecycle efficiently and transparently. The transition from paper-based evaluations to a digital platform was not merely a matter of convenience but a strategic decision to enhance the overall effectiveness of the evaluation process. We wanted to make staff evaluations easier at Woldia University. Using lots of paperwork made it slow and hard to manage. So, we decided to create a digital system to make things smoother. We wanted a system that would make evaluations more accurate, faster, and fairer also we aimed to improve the accuracy, timeliness, and comprehensiveness of staff assessments while reducing administrative burden and promoting transparency and accountability. We also wanted it to be easy for everyone involved. To make this happen, we wrote a plan called the Software Requirements Specification (SRS) document. This plan laid out exactly what the new system needed to do and how it should look and work. The paperless staff evaluation system is a big step forward for Woldia University. It shows we care about making things better for our staff. The new system is simple to use and saves time for everyone. It's a sign of our commitment to making things run smoothly and fairly. The new system, paperless staff evaluation system, solve the problem that the previous system, which is paper staff evaluation system, has. The paper staff evaluation system has the following problems:

* Time-consuming processes
* Data redundancy
* Limited accessibility
* Lack of tracking and accountability

The above problems clearly indicate the lack that paper staff evaluation system have. So here is our system to solve these problems. Our system provide:

* Streamlining processes
* Ensuring data integrity
* Enhancing accessibility
* Improving tracking and accountability

**2.2. Functional requirement**

- Functional requirements outline what the system must do to fulfill its purpose effectively. And these are the must services our system, paperless staff evaluation, provide:

* **User Authentication and Authorization**:
* Users must be able to authenticate securely to access the system.
* Different user roles (administrators, evaluators, staff) should be defined with specific permissions.
* Administrators should have the authority to manage user accounts and roles.
* **Digital Evaluation Forms**:
* The system should provide customizable digital evaluation forms tailored to various staff positions and evaluation criteria.
* Forms should be dynamic, allowing for the addition or removal of evaluation criteria as needed.
* Administrators should be able to define the structure and content of evaluation forms.
* **Submission and Review of Evaluations**:
* Users should be able to submit evaluations electronically through the system.
* Evaluators should have access to submitted evaluations for review and assessment.
* The system should support both quantitative ratings and qualitative feedback for comprehensive performance assessments.
* **Automated Workflow Management**:
* The system should automate the entire evaluation workflow from initiation to completion.
* Administrators should be able to schedule evaluation periods and set deadlines for submission.
* Evaluators should be assigned to specific staff members automatically or manually by administrators.
* Notifications and reminders should be sent to users to prompt them to complete evaluations within the specified deadlines.
* **Real-time Progress Tracking**:
* Administrators should be able to track the progress of evaluations in real-time.
* The system should provide status updates on submitted evaluations, indicating whether they are pending, in progress, or completed.
* Progress dashboards and reports should be available to visualize evaluation status and identify any bottlenecks or delays.
* **Reporting and Analysis**:
* The system should generate reports and analysis on staff performance based on evaluation data.
* Reports should provide insights into overall performance trends, individual strengths, areas for improvement, and comparative analysis across departments or units.
* Administrators should be able to customize report parameters and filter data based on specific criteria.
* **Data Management and Storage**:
* Evaluation data should be stored securely in a centralized database.
* Adequate data backup and recovery mechanisms should be in place to prevent data loss.
* The system should comply with data protection regulations and university policies regarding data storage and retention.

**2.3. Non-Functional requirement**

- Non-functional requirements define the qualities or attributes that the system must possess, rather than specific behaviors or functions. Here are some non-Functional requirement that the paperless evaluation system include:

* **Performance**:
* The system should respond promptly to user interactions, ensuring efficient operation.
* It must handle concurrent user requests without significant performance degradation.
* Response times for loading pages, submitting evaluations, and generating reports should be minimal, even during peak usage periods.
* **Security**:
* The system must employ robust security measures to protect the confidentiality and integrity of evaluation data.
* It should utilize encryption protocols to safeguard data during transmission and storage.
* Access to sensitive information should be restricted based on user roles and permissions.
* Regular security audits and updates should be conducted to mitigate potential vulnerabilities.
* **Usability**:
* The user interface should be intuitive and easy to navigate, catering to users with varying levels of technical proficiency.
* Clear instructions and guidance should be provided throughout the evaluation process.
* Accessibility features such as text resizing and screen reader compatibility should be incorporated to accommodate users with disabilities.
* **Reliability**:
* The system should operate consistently without unexpected downtime or data loss.
* It must be resilient to hardware failures, software bugs, and other potential disruptions.
* Regular backups of evaluation data should be performed to prevent data loss in case of system failures.
* **Accessibility**:
* The system should be accessible from various devices and web browsers, ensuring compatibility for all users.
* It should comply with accessibility standards such as WCAG (Web Content Accessibility Guidelines) to accommodate users with disabilities.
* Alternative methods of access, such as mobile apps or offline access, should be provided where feasible.
* **Integration**:
* The system should seamlessly integrate with existing university systems, such as HR databases or student information systems.
* Data synchronization between different systems should occur in real-time or at predefined intervals to ensure consistency.
* APIs (Application Programming Interfaces) or other integration mechanisms should be provided to facilitate data exchange with external systems.
* **Auditability**:
* Comprehensive logs of user activities, system events, and data modifications should be maintained for auditing purposes.
* Logs should include details such as user IDs, timestamps, and actions performed to facilitate traceability and accountability.
* Administrators should have access to audit logs for monitoring and compliance purposes.
* **Monitoring**:
* The system should provide monitoring tools to track key performance indicators (KPIs) such as server uptime, system response times, and resource utilization.
* Alerts should be generated for abnormal system behavior or performance issues, allowing administrators to take proactive measures.

Historical performance data should be stored and analyzed to identify trends and optimize system performance over time.

**Reference**

* Office of department dean(computer science) and school of computing
* The existing system(document)
* SRS samples