

Woldia University
Information Communication Technology Executive
Open Journal System (WDUJO)

By:

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Contents

- 1. Introduction 4
- 2. Objective..... 6
 - 2.1. General Objective..... 6
 - 2.2. Specific Objectives 6
- 3. Scope of the System 7
- 4. System Deployment Requirements..... 8
 - 4.1. Infrastructure Requirement..... 8
 - 4.2. System requirements 9
 - 4.3. System Security..... 10
 - 4.4. System roles and Human resource requirement..... 10
 - 4.5. Projects Architectures 10
 - 4.6. Project running cost 11
- 5. Recommendations 11
- 6. Conclusions..... 11
- 7. Required Materials for Lab 12
 - 1. Bill of Materials 0

1. Introduction

Woldia University with academic units including Institute of Technology, College of Health Science, College of Agriculture, College of Natural and Computational Science, College of Educational and behavioral Science, College of Business and Economics, College of Social Science and humanities and St. Lalibela Institute of Heritage and Truism are the major ones in delivering undergraduate, graduate course and research, Community Service and Technology Transfer.

ICT Executive has the role in supporting our comprehensive university pillar in line with Minister of Education differentiations center of Excellence.

Woldia University Open Journal System drives on the massive success of Information and Communication Technology (ICT) and its various features, security, reliability and consistency. The system simplifies the examination process by computer aided control and automatic marking to reduce the complex paper work

The Open Journal System (OJS) is an open-source software platform designed to manage and publish academic and scholarly journals online. OJS was created with the primary goal of facilitating open access publishing, which aims to make scholarly research freely available to the public. By providing a comprehensive, web-based platform, OJS empowers academic institutions, publishers, and individual journal editors to take control of their publishing processes and reduce the barriers associated with traditional print-based publishing.

Some of the key features of OJS include:

- **Run one or many journals:** Every installation of OJS can run one or many journals, so you can decide what suits your publishing setup.
 - **Submission Management:** OJS provides a web-based interface for authors to submit their articles, track the submission status, and respond to editorial decisions.
 - **Peer Review:** The system supports a robust peer review process, allowing editors to assign articles to reviewers, manage the review workflow, and make decisions on the submissions.
 - **Copyediting and Layout:** OJS includes tools for copyediting, proofreading, and layout formatting of accepted articles before publication.
 - **Publication Management:** The platform handles the final publication process, including version control, scheduling, and online publication of journal issues.
 - **Indexing and Discoverability:** OJS integrates with various indexing services and search engines to improve the discoverability of published articles.
 - **Multilingual Support:** The system supports multiple languages, allowing journals to be published in different languages.
 - **Reporting and Analytics:** OJS provides built-in reporting and analytics capabilities, enabling journal editors and publishers to track usage, monitor submission trends, and generate reports.
 - **Access Control:** The platform offers fine-grained access control and permissions management, allowing journals to customize user roles and permissions.
 - **Plugins and Customization:** OJS is highly customizable, with a rich ecosystem of plugins and extensions that can be used to add new features and integrate with third-party systems.
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- **Open Access:** OJS is designed to support open access publishing, providing options for journals to publish articles under various open access licenses.

At its core, OJS is a highly configurable and flexible system that supports the entire editorial workflow, from article submission and peer review to publication, distribution, and archiving.

Implementation Plan:

To successfully implement the Open Journal System for Woldia University, we propose the following steps:

- Conduct a thorough evaluation of OJS features and capabilities to ensure alignment with our journal's needs and requirements.
- Develop a comprehensive migration plan, including data transfer, branding and customization, and staff training.
- Establish a dedicated OJS implementation team, comprising the journal editor, technical support staff, and IT specialists.
- Engage with the OJS community and leverage available documentation, tutorials, and support resources to ensure a smooth transition.
- Develop a communication plan to inform our authors, reviewers, and readers about the upcoming changes and the benefits of the OJS platform.
- Monitor the implementation process and continuously optimize the OJS configuration to meet the evolving needs of Woldia University Journals.

Expected Outcomes:

By adopting the Open Journal System, we anticipate the following outcomes:

- Increased accessibility and visibility of Woldia University Journal publications through open access distribution.
- Improved efficiency and streamlined editorial workflows, leading to reduced publication timelines.
- Enhanced discoverability and indexing of Woldia University Journal articles, resulting in greater research impact.
- Reduced financial barriers for authors and readers, promoting wider participation and engagement.
- Active involvement in the global OJS community, enabling knowledge-sharing and collaboration.

Woldia University online examination (WLDU-OE) software implementation stage involves the transformation of the software technical data package (TDP) into different role-based system administration and access for **Authors, Reviewers, Editors** and supper admin.

The primary activities of software implementation include the:

- Fabrication of software units to satisfy structural unit specifications.
- Assembly, integration, and testing of software components into a software configuration item.
- Prototyping challenging software components to resolve implementation risks or establish a fabrication proof of concept.
- For software acceptance testing by
 - Presidents, Academic,
 - Research & Community service TT assistant,
 - Academic Program Director and
 - Education Quality Director
 - Woldia University exam administration one or more fabricated, integrated, and tested software configuration items that are ready
- Dry-run acceptance testing procedures to ensure that the procedures are properly delineated and that the software product (software configuration items (CIs and computing environment) is ready for acceptance testing.

2. Objective

2.1. General Objective

The primary objective of an Open Journal System (OJS) is to provide an open-source, web-based journal management and publishing system that allows academics, researchers, and publishers to manage the entire publication process, from submissions to publication, online.

2.2. Specific Objectives

The specific objective of this Journal system includes:

- To Automate the existing paper-based Journal System
 - **Open Access Publication:** The primary objective of an OJS is to facilitate open access publication of scholarly content. This aligns with the broader open access movement, which aims to make research freely available to the public.
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- **Decentralized Publishing:** OJS empowers individual journals, publishers, and academic institutions to manage their own publishing processes, rather than relying on centralized commercial publishers. This promotes decentralization and local control over publishing.
- **Flexible Workflows:** OJS provides a highly configurable editorial workflow that can be customized to meet the unique needs of different journals, disciplines, and publication models. This flexibility allows journals to optimize their processes.
- **Reduced Costs:** By leveraging open-source software and digital publishing technologies, OJS aims to reduce the financial barriers and costs associated with traditional print-based journal publishing.
- **Preservation and Archiving:** OJS includes features to support the long-term preservation and archiving of published content, ensuring the availability of scholarly works over time.
- **Author Rights Management:** OJS empowers authors by enabling them to retain copyright over their work
- **Multilingual Support:** Many OJS installations support multiple languages, allowing for the publication of content in various languages and reaching a more diverse global audience.

These special objectives distinguish OJS from traditional proprietary journal publishing platforms and align it with the core principles of the open access movement.

3. Scope of the System

The Open Journal System (OJS) has a broad and comprehensive scope that encompasses the entire lifecycle of academic journal publishing. Here are the key areas that OJS covers:

Journal Management:

- User roles and permissions management (editors, authors, reviewers, readers, etc.)
- Customizable editorial workflow (submission, peer review, copyediting, layout, etc.)
- Issue planning and scheduling
- Comprehensive reporting and analytics

Submission and Peer Review:

- Online submission and author management
 - Configurable peer review process (single-blind, double-blind, open, etc.)
 - Reviewer assignment and management
 - Decision-making tools for editors
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Publication and Dissemination:

- HTML or PDF formatting and publication
- Integration with indexing services and aggregators
- Support for multiple publication models (open access, subscription, hybrid)
- Multilingual and internationalization capabilities

Open Access Support:

- Adoption of open access policies and licenses (e.g., Creative Commons)
- Integration with open access repositories and archives
- Compliance with open access mandates and requirements

Discoverability and Visibility:

- Integration with search engines, discovery services, and academic databases
- Usage statistics and analytics for articles and journals

Branding and Customization:

- Flexible theming and branding options
- Ability to customize the user interface and workflows
- Plugin system for extending the platform's functionality

The broad scope of OJS allows it to cater to a wide range of academic and scholarly journals, from small, independent publications to large, professionally-managed journals. By providing a comprehensive set of tools and features, OJS empowers journal editors, publishers, and institutions to manage their entire publishing operations efficiently and effectively, while aligning with the principles of open access and global scholarly communication.

4. System Deployment Requirements

4.1. Infrastructure Requirement

Woldia University electronic web based online exams are a method of testing students' knowledge and capabilities in a remote environment using an online medium with the help of a computer lab desktop or laptop using Woldia University Local Area Network (LAN) and the internet in Mersa College of Agriculture and St. Lalibela Institute of Heritage and Tourism. The students can securely login using Woldia University institutional email (wldu.edu.et) domain to take *semester Exams, National Exit*

Mock Tests, any *entrance exams*, and *Class Assessments* in a proctored environment exam which is submitted for each subject teacher.

This WLDU Online Examination System is technologically advanced system for:

- Has objective/ subjective question sections, conducting exams remotely in a paperless manner.
- Simplifies examination activities in institutes such as defining exam timers,
- Exam patterns with department question banks,
- Proper feedback in each exam questions.

4.2. System requirements

The hardware storage system and network requirements of the system are listed in final part of this document includes:

- Storage devices
- Network Equipment's
- LAN Accessories
- Lab equipment's
- Safe Browser

Here are the system requirements for using the Open Journal Systems (OJS) software:

Server Requirements:

- **Operating System:** OJS supports Windows, Linux, and macOS operating systems.
- **Web Server:** Apache or Nginx web server.
- **Database:** MySQL, MariaDB, or PostgreSQL database.
- **PHP:** Version 7.2 or newer.
- **Memory:** Minimum 512MB of RAM, 1GB or more recommended.
- **Disk Space:** Minimum 500MB, more space required depending on journal size and number of articles.

Client Requirements:

- **Web Browser:** The latest versions of Chrome, Firefox, Safari, or Edge are recommended for optimal performance.
 - **Internet Connection:** A stable internet connection is required for accessing the OJS platform.
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4.3. System Security

4.4. System roles and Human resource requirement

- Admin
 - Teachers
 - Students
 - Category
 - Upload System
 - From file and
 - Direct
3. Institutional Email

4.5. Projects Architectures

Online examination systems are replacing old-style methods of writing examinations. A lot of progress has been made in administering objective examinations online with a high rate of success.

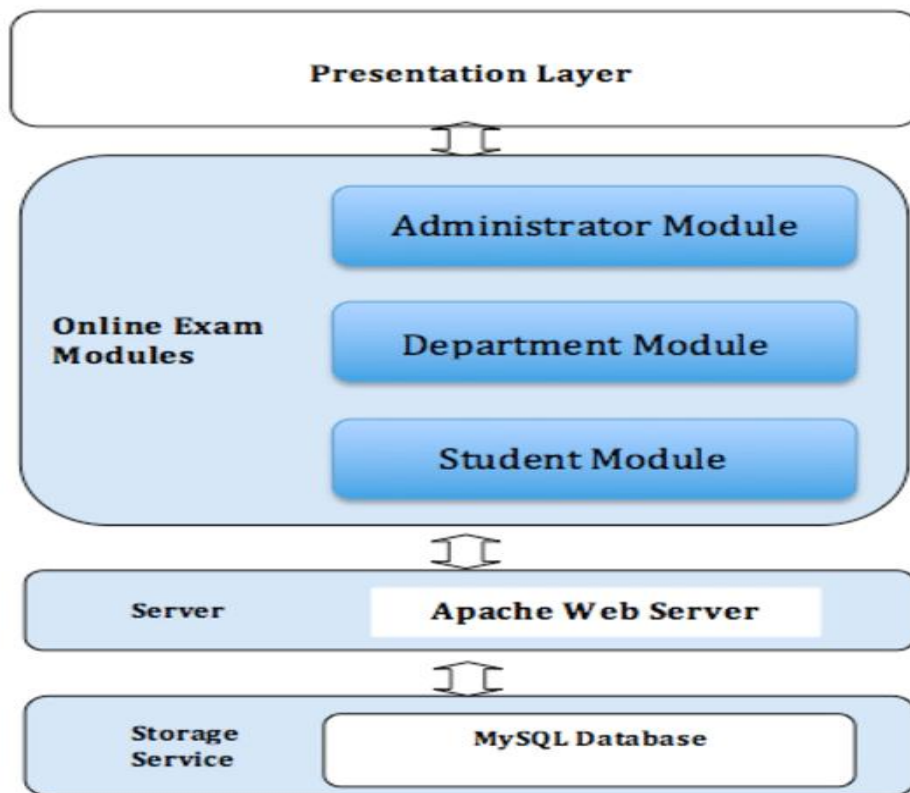


Fig: Architecture of the Online Examination System.

4.6. Project running cost

Woldia University e-Examination Software Cost and participant List

No	Work Type	No of Participant	Participant Name	Cost	Remark
1.	e-Examination Project facilitates & Leader	1	Dr. Kasahun (Academic V/President)	80,000.00	
2.	e-Examination Software Project Create, Development, Customization & Implementation facilitates	2	Mr. Getachew Worku (ICT Executive) Mr. Solomon Adane (Software Team Leader)	720,000.00	
3.	e-Examination SW Server Configuration, Deployment, Facilitates, Manage & Administration	2	Mr. Elias Belete (Software Programmer) Mr..... (System Administrator) Mr Simenew Asrat University Exam Admin	95,000.00	
4.	e-Examination Software Security Facilitates Work, Manage & Administration	1	Mr. Henok Degu (Infrastructure & Security Team Leader)	55,000.00	
	Network & Hardware Security Implementation				
	Software Security Tester		Mr. _____ System Tester	33,5000	
5.	Training Academic Staff (Teachers & Students) Include Module	2	Mr. Getachew Worku (ICT Executive) Mr. Solomon Adane (Software Team Leader)	70,000.00	Training Manual Page
Total Cost				1,060,000.00	

5. Recommendations

6. Conclusions

7. Required Materials for Lab

Technical Requirements

LAN Devices

Access switch PoE-24 port (Quantity =10)

Feature	Description of minimum requirement
Total 10/100/1000 or Multi gigabit copper ports	24 POE+
Default AC power supply	715W AC
Available PoE power	445W
Default power supply	PWR-C1-715WAC
Switching capacity	208 Gbps on 24-port Gigabit Ethernet model
Stacking bandwidth	480 Gbps
Total number of MAC addresses	32,000
Total number of IPv4 routes (ARP plus learned routes)	32,000 (24,000 direct routes and 8000 indirect routes)
IPv4 routing entries	32,000
IPv6 routing entries	16,000
Multicast routing scale	8000
QoS scale entries	5120
ACL scale entries	5120
Packet buffer per SKU	16 MB buffer for 24- or 48-port Gigabit Ethernet models
DRAM	8 GB
Flash	16 GB
VLAN IDs	4000
Total Switched Virtual Interfaces (SVIs)	2000
Wireless bandwidth per switch	Up to 48 Gbps on 24-port Gigabit Ethernet model
Forwarding rate	154.76 Mpps

Access switch PoE-48 port (Quantity =25)

Feature	Description of minimum requirement
Total 10/100/1000 or Multigigabit copper ports	48 POE+
Default AC power supply	715W AC
Available PoE power	437W
Cisco StackWise-480	Yes
Cisco Stack Power	Yes
Default power supply	PWR-C1-715WAC
Switching capacity	256 Gbps on 48-port Gigabit Ethernet model
Stacking bandwidth	480 Gbps
Total number of MAC addresses	32,000
Total number of IPv4 routes (ARP plus learned routes)	32,000 (24,000 direct routes and 8000 indirect routes)
IPv4 routing entries	32,000
IPv6 routing entries	16,000
Multicast routing scale	8000
QoS scale entries	5120
ACL scale entries	5120
Packet buffer per SKU	16 MB buffer for 24- or 48-port Gigabit Ethernet models

FNF entries	64,000 flow on 24- and 48-port Gigabit Ethernet models
DRAM	8 GB
Flash	16 GB
VLAN IDs	4000
Total Switched Virtual Interfaces (SVIs)	2000
Jumbo frames	9198 bytes
Total routed ports per 9300 Series stack	208
Wireless bandwidth per switch	Up to 96 Gbps on 48-port Gigabit Ethernet model
Forwarding rate	154.76 Mpps

Server Computer

Device Name	Server Specifications	Required Quantity
	<p>HPE Proliant DL560 G10 5218 2P 64G P408i-a 8SFF 1600W PS server</p> <p>Processor Intel Xeon 5218 (16 core 22M Cache, 2.30 GHz)</p> <p>Number of Processors 2</p> <p>Memory 64G</p> <p>Power Supply 2 x 1600W NOTE: 1600W Power supplies only support high line voltage (200VAC to 240VAC).</p> <p>PCI-Express Slots 3 PCIe 3.0 slots available NOTE: 8 PCIe 3.0 slots available with the secondary and tertiary riser installed.</p> <p>Hard drive 8*1Tb as Standard</p> <p>Internal Storage 8 SFF Drive Bays</p> <p>Optical Drive Bay Optional via Universal Media Bay</p> <p>Fans 6 hot plug fans, redundant</p> <p>Management HPE iLO Standard with Intelligent Provisioning (embedded), HPE OneView Standard (requires download); HPE iLO Advanced and HPE OneView Advanced (require licenses)</p> <p>Form Factor RACK (2U), HPE Easy Install Rails with CMA</p>	02

Switch Cabinet and Patch panel

Features	Minimum Requirement
Brand	Known brand
Size	9U
Feature	Lockable front door and functional Wall Mountable
Quantity	
Accessories	1 Power distribution units with each having minimum 5 sockets, 16amp current rate 2U 19" cable manager, quantity 2 for each cabinet Rack should be strong enough to carry the UPS to be mounted to supply regulated power to the switch

Switch Cabinet - Rack 9U

Features	Minimum Requirement
Brand	Known brand for the Trunk
Trunk & Accessories	Appropriate size PVC trunks should be proposed and clearly quantified Fittings and trunk accessories should be clearly quantified The firm should supply all the necessary accessories associated with the trunk installation (both the Conduit & Connectors).
Quality	The firm should supply document confirming the cable type and quality
Length and Quantity	The firm is responsible for the measurement of the trunk as per the provided node list

Network cable and Accessories

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Network cable CAT6E (Quantity =30)

Feature	Description of Minimum Requirement
Conductor	Stranded Bare Copper (7 x 32 AWG)
Insulation	HDPE (CMI-75E) Nominal Wall Thickness: 0.178mm Min. Thickness: 0.153mm
Color Code	Pair 1: Blue & White/Blue Pair 2: Orange & White/Orange Pair 3: Green & White/Green Pair 4: Brown & White/Brown
Size	Roll of 305m
Maximum Transmission Speed	1 Gbps/10 Gbps
Connector Type	RJ45

Accessories: Network wall outlet with full accessories

Features	Minimum Requirement
Quantity	Single wall outlets (Total number of user/network node =800)
Brand	Known brand
Connector Type	RJ-45 and modular
Type	Modular and dual outlet with back box
Compatibility	Compatible with category 6E cable
Quality	The firm should supply Manufacturer datasheet confirming the type and quality of the product.

Power distribution unit (PDU Quantity=20)

Features	Minimum Requirement
Quantity	45
Brand	Known brand
Connector Type	Space saving - 1U rack mount design
Type	IEC or NEMA outlet models
Compatibility	Aluminum material
Quality	The firm should supply Manufacturer datasheet confirming the type and quality of the product.

1. Bill of Materials

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				Birr	Ce	Birr	Price	
1	Access switch PoE-24 port	10	Number	120000	.00	1,200,000	.00	
2	Access switch PoE-48 port	25	Number	150000	.00	3,750,000	.00	
3.	Rack 9U	20	Number	10000	.00	200000	.00	
4.	RJ-45	10	Packet	10000	.00	100000	.00	
5.	RJ 45 NetLAN Cat6 1 port faceplate	800	Pics	500	.00	400000	.00	
6.	UTP cable	30	Roll	15000	.00	450,000	00	
7	Cable Trunk	1000	Meter	500	.00	500,000	00	
8	Fisher (size = 8)	20	Packet	500	.00	10,000	00	
9	Bite (size = 8)	20	Packet	500	.00	10,000	00	
10	Building drilled machine	2	Number	15000	.00	30,000	00	
11	Screw drive drill	2	Number	10000	.55	20,000	50	
12	Colorful Cable tie	10	Packet	1000	.00	10,000	.00	
13	Anker bolt	10	Packet	2000	.00	20,000	.00	
14	Network Crimper	8	Pcs	7000	.00	56,000	.00	
15	Server computer	2	Number	1000000	.00	2000000	.00	
Bill of material Total						8,754,000 Birr		
16	Professional fee & labor cost for Main Campus	280	Per node	800	.00	224,000	.00	
17	Professional fee & labor cost for Mersa campus	40	Per node	800	.00	32000	.00	
Professional fee and Labor cost Total						256,000 Birr	.00	

