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ONLINE FIELD TRAINNING APPLIACTION SYSTEM

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**CHAPTER ONE**

INTRODUCTION

Field application systems are designed to manage the process of students applying for and participating in field training programs, which are often mandatory part of their academic curriculum. Field training programs were invited so as to make sure the students get full experience of the particular study or carrier their entitled to.

* 1. BACKGROUND OF FIELD APPLICATION SYSTEMS

1.2.1 EARLY FIELD TRAINING SYSTEMS

* Manual processes: in the past, field training systems were handled manually. Students would submit physical forms to their departments or training coordinators, and the selection process was often time-consuming and prone to errors.
* Limited opportunities: Field training opportunities were scarce, and the application process was nor standardized. This led to disparities in access to training placements especially for students in remote areas.
* Paper- Based Tracking: Institutions relied on paper-based records to track performance during field training. This made it difficult to maintain accurate and up-to-date information.

1.2.1 INTRODUCTION OF DIGITAL FIELD TRAINING APPLICATION SYSTEMS

* Adoption of ICT in Education: With the global shift towards digitalization, Tanzanian universities and colleges began adopting Information and Communication Technologies (ICT) streamline into existing e-learning platform, allowing student to apply online and receive updates electronically. *(Tanzania Ministry of Education, 2020)*
* Government Initiatives: The Tanzanian government, through the ministry of Education, Science, and Technology, encouraged the use of digital system to improve efficiency and transparency in higher education.

1.2.2 BEGINNING OF COMPULSORY FIELD APPLICATION SYSTEMS

* Standardization: To ensure fairness and efficiency, many institutions made it compulsory for students to apply for field training through centralized digital systems. This helped standardize the application process and ensure equal opportunities for all students.
* Integration with Curriculum: Field training became a mandatory component of many academic programs, and institutions developed systems to align training placements with students' areas of study.
* Monitoring and Evaluation: Digital systems allowed institutions to monitor student progress during field training and evaluate the effectiveness of the training programs.

1.2.3 REASONS OF ESTABLISHING ONLINE FIELD APPLICATION SYSTEMS

1. Efficiency: Digital systems streamline the application process, reducing paperwork and administrative burden.

2. Transparency: Online systems ensure a fair and transparent selection process for field training placements.

3. Accessibility: Students from remote areas can easily apply for training opportunities without needing to be physically present on campus.

4. Tracking and Reporting: Institutions can track student applications, placements, and performance in real-time, making it easier to generate reports and improve training programs.

5. Compliance: Field training is often a mandatory requirement for graduation, and digital systems help ensure compliance with academic regulations*. (Nyerere, 1967)*

6. Improved Communication: Online platforms facilitate better communication between students, institutions, and host organizations.

1.3 STATEMENT OF THE PROBLEM

Field training is a critical component of academic programs in Tanzania, providing students with practical skills and real-world experience. However, the current systems for managing field training applications face significant challenges:

* Inefficiency: Manual application processes are time-consuming and prone to errors, leading to delays in placements.
* Lack of Transparency: Students often report unfairness in the selection process due to a lack of clear criteria and oversight.
* Limited Accessibility: Students in remote areas struggle to access field training opportunities due to poor infrastructure and communication gaps.
* Inadequate Monitoring: Institutions face difficulties in tracking student progress and evaluating the effectiveness of field training programs.
* Digital Divide: While some institutions have adopted digital systems, many still rely on outdated methods, creating disparities in access and efficiency.

1.3.1 WEAKNES EXISTING IN THE SYSTEMS

* Manual Processes: Reliance on paper-based applications and record-keeping leads to inefficiencies and errors.
* Lack of Standardization: Inconsistent application procedures across institutions create confusion and inequities.
* Poor Communication: Limited interaction between students, institutions, and host organizations results in missed deadlines and unclear expectations.
* Inadequate Infrastructure: Many institutions lack the ICT infrastructure needed to support digital systems.
* Limited Data Analytics: Institutions cannot effectively analyze field training data to improve programs or make informed decisions.

These issues hinder the overall quality of field training programs, affecting students’ preparedness for the workforce and limiting the impact of academic institutions on national development. *(Bank, 2019)*

1.4 MOTIVATION

The motivation for this project stems from the need to:

* Enhance Efficiency: Streamline the field training application process to save time and resources for students, institutions, and host organizations.
* Promote Fairness: Ensure equal access to field training opportunities for all students, regardless of their location or background.
* Improve Quality: Strengthen the quality of field training programs by enabling better monitoring and evaluation.
* Support National Development: Equip students with the practical skills needed to contribute to Tanzania’s socio-economic development.
* Leverage Technology: Utilize digital tools to modernize education systems and align with global trends.

**CHAPTER TWO**

2. OBJECTIVES

The primary objectives of this project are:

1. To assess the current field training application systems in Tanzanian institutions.

2. To identify the challenges and weaknesses in existing systems.

3. To design and propose a digital field training application system that addresses these challenges.

4. To evaluate the potential impact of the proposed system on students, institutions, and host organizations.

2.1 MAIN OBJECTIVES

The project will adopt a “mixed-methods approach”, combining qualitative and quantitative research techniques:

* Literature Review: Analyze existing studies and reports on field training systems in Tanzania and other countries.
* Surveys and Interviews: Collect data from students, academic staff, and host organizations to understand their experiences and needs.
* System Design: Develop a prototype digital field training application system based on the findings.
* Pilot Testing: Implement the system in a selected institution to evaluate its effectiveness.
* Data Analysis: Use statistical tools and qualitative analysis to interpret the results and make recommendations.

2.3 SPECIFIC OBJECTIVES

1. To evaluate the efficiency and transparency of current field training application systems in Tanzanian institutions.

2. To identify the key challenges faced by students, institutions, and host organizations in the field training process.

3. To design a user-friendly digital platform for field training applications that addresses identified challenges.

4. To assess the feasibility and potential impact of the proposed system on improving field training outcomes.

5. To provide recommendations for scaling up the system across Tanzanian institutions.

2.3 RESEARCH QUESTIONS

1. What are the current processes for field training applications in Tanzanian institutions, and what are their strengths and weaknesses?

2. What challenges do students face when applying for and participating in field training programs?

3. How do existing systems impact the efficiency, transparency, and accessibility of field training opportunities?

4. What features should a digital field training application system include to address the identified challenges?

5. What is the potential impact of a digital field training application system on students, institutions, and host organizations?

6. What are the barriers to implementing digital field training application systems in Tanzanian institutions, and how can they be overcome?

**CHAPTER THREE**

1. PROJECT APPROACH

3.1 THE SOLUTION FOR EXSTING SYSTEMS

To address the weaknesses in the current field training application systems, the following solutions are proposed:

* Digital Platform Development: Create a centralized online platform for field training applications, accessible to students, institutions, and host organizations.
* Automated Processes: Use automation to streamline application submission, placement matching, and progress tracking.
* Standardized Criteria: Implement clear and transparent criteria for selecting students for field training placements.
* Mobile Accessibility: Ensure the platform is mobile-friendly to cater to students in remote areas with limited access to computers.
* Training and Support: Provide training sessions for students and staff to improve digital literacy and ensure effective use of the system.
* Data Analytics Integration: Incorporate tools for data analysis to help institutions monitor and evaluate field training programs. *(UNESCO, 2020)*

3.2 ADVANTAGES OF THE NEW PROPOSED SYSTEM

The proposed digital field training application system offers several advantages:

1. Efficiency: Reduces paperwork and administrative workload, speeding up the application and placement process.

2. Transparency: Ensures a fair and transparent selection process with clear criteria and real-time updates.

3. Accessibility: Allows students from remote areas to apply for field training opportunities without being physically present on campus.

4. Real-Time Tracking: Enables students, institutions, and host organizations to track application status and progress in real-time.

5. Improved Communication: Facilitates better communication between all stakeholders through notifications and messaging features.

6. Data-Driven Decisions: Provides institutions with data analytics tools to evaluate and improve field training programs.

7. Scalability: Can be easily scaled to accommodate more students and institutions as needed.

3.4 MODULE DESCRIPTION

The proposed system will consist of the following modules:

1. Student Module:

- Allows students to create profiles, submit applications, upload documents, and track their application status.

- Provides access to field training opportunities and guidelines.

2. Institution Module:

- Enables academic staff to review applications, match students with placements, and monitor progress.

- Generates reports and analytics on field training outcomes.

3. Host Organization Module:

- Allows host organizations to post field training opportunities, review student applications, and submit evaluations.

4. Admin Module:

- Manages user accounts, system settings, and overall platform functionality.

- Ensures data security and system maintenance.

3.5 SYSTEM FLOW

* USER REGISTRATION

1.User visits the registration page.

2.user fills out the registration form.

3.System validates the input.

4. System registers the user.

5. User is redirected to the login page.

* USER LOGIN

1.User visits the login page.

2.user fills out the login form.

3.System validates the credentials.

4. System logs in the user.

5. User is redirected to the dashboard (based on their role).

* ADMIN DASHBOARD

1.Admin views the dashboard.

2.Admin can manage fields and applications.

3.Admin can update the status and provide feedback on applications.

* STUDENT DASHBOARD

1.Student views the dashboard.

2.Student can apply for fields.

3.Student can view their application status and feedback.

* FIELD APPLICATION

1.Student selects field.

2.Student fills out an application form.

3.System validates the input.

4. System submits the application.

5. System sends an email to the field space.

6. Student is notified about the application submission.

* ADMIN REVIEW

1.Admin views the list of applications.

2.Admin updates status and provides feedback.

3.System sends an email to the student with the updated status and feedback.

* SYSTEM FEATURES
* User registration and login: Users can register and login to the system.
* Role-bases Access Control: Different view functionalities for admin and student roles.
* Field Management: Admins can add, update fields.
* Application Management: Admin can view, update the status, and provide feedback on applications.
* Application Submission: Students can apply to fields by submitting their resume and cover letter.
* Application status and feedback: Students can view the status and feedback of their submissions and status updates.
* Email Notifications: System sends email to field spaces and students for application submissions and status updates.
* SYSTEM SECURITY
* Input validation: All user inputs are sanitized to prevent SQL injection and cross-site scripting (XSS) attacks.
* Password Hashing: Passwords are hashed using “passoword\_hash” and verified using “password\_verify”
* Session Management: Sessions data is securely managed to prevent session hijacking.
* Error Handling: Errors are handled gracefully, and sensitive information is not exposed in the error messages.
* FUTURE ENHANCEMENTS
* User profiles: Allow users to create and manage their detailed profiles.
* Search and Filter: Implements search and filter functionalities for fields and applications.
* Mobile Responsiveness: Ensure the system is fully responsive and works well on mobile devices.
* API Integration: integrate with third-party API`S for additional features and services.
* Analytics: Implement analytics to track user activity and system usage.

3.5.1 DATA FLOW DIAGRAM

User Registaration login

Redirect to login page

User login

Admin dashboard

Manage fields

Manage applications

Update status

Provide feedback

Student dashboard

Apply field

Submit application

Send email

feedback

3.6 DATABASE DESIGN

Users table

* Id
* Username
* Password
* Role
* Full name

Fields table

* Id
* Name
* Description
* Location
* Email
* Created\_at

Applications table

* Id
* Field\_id
* User\_id
* Status
* Feedback
* Created\_at

3.7 CHALLENGES OF FIELD APPLICATIONS SYSTEM

Despite the proposed solutions, the following challenges may arise:

1. Limited ICT Infrastructure: Some institutions and students may lack access to reliable internet or devices. (Bank, 2019)

2. Resistance to Change: Stakeholders accustomed to manual processes may resist adopting the new system.

3. Digital Literacy: Students and staff may require training to use the system effectively.

4. Funding Constraints: Developing and maintaining the system may require significant financial resources.

5. Data Security: Ensuring the security and privacy of student and institutional data is critical.

6. Scalability Issues: The system must be designed to handle a growing number of users and data.

**CHAPTER FOUR**

4. REQUIRED RESOURCES

To develop and implement the proposed digital field training application system, the following resources are required:

- Human Resources:

- Software developers and programmers.

- System analysts and designers.

- Project managers.

- Trainers for digital literacy programs.

- Administrative staff for data entry and system management.

- Financial Resources:

- Funding for software development, hardware procurement, and system maintenance.

- Budget for training programs and stakeholder workshops.

- Technical Resources:

- Development tools and frameworks.

- Cloud hosting services or servers for system deployment.

- Testing and debugging tools.

4.1 HARDWARE REQUIREMENTS (Minimum requirements)

The minimum hardware requirements for the system are:

- For Students and Staff:

- A smartphone, tablet, or computer with internet access.

- Minimum 2GB RAM for mobile devices or 4GB RAM for computers.

- At least 10GB of free storage space for app installation and data storage.

- For Institutions and Host Organizations:

- A computer or laptop with at least 4GB RAM and 500GB storage.

- Reliable internet connection with a minimum speed of 5 Mbps.

- For Servers:

- A dedicated server or cloud hosting service with:

- Minimum 8GB RAM.

- 100GB storage.

- High-speed internet connectivity.

4.2 SOFTWARE REQUIREMENTS (Minimum requirements)

The minimum software requirements for the system are:

- Web Browser: Google Chrome or Mozilla Firefox (latest versions).

- For Development and Deployment:

- Programming Languages: JavaScript, Python, or PHP.

- Frameworks: React.js, Node.js, or Django.

- Database: MySQL, PostgreSQL, or MongoDB.

- Hosting: AWS, Google Cloud, or Microsoft Azure.

- Version Control: Git/GitHub.

CHAPTER FIVE

5. DERIVERABLE

5.1 DERIVALABLE

The key deliverables for the project include:

1. Functional Digital Platform:

- A fully operational online field training application system.

2. User Documentation:

- User manuals for students, institutions, and host organizations.

3. Training Materials:

- Guides and tutorials for using the system.

4. Pilot Test Report:

- A report on the pilot implementation, including feedback and recommendations.

5. Final Project Report:

- A comprehensive report detailing the system design, implementation, and evaluation.

5.2 SYSTEM MAINTAINANCE

To ensure the system remains functional and up-to-date, the following maintenance activities are required:

Regular Updates:

- Update software components, libraries, and frameworks to ensure compatibility and security.

Bug Fixes:

- Address any issues or bugs reported by users.

CHAPTER SIX

6. TIME PLAN

|  |  |  |
| --- | --- | --- |
| Phase | Duration | Activities |
| Requirement Analysis | 2 weeks | Gather requirements from stakeholders. |
| System Design | 3 weeks | Design system architecture, modules and user interfaces. |
| Development | 6 weeks | Develop the system, including frontend, backend and database integrations. |
| Testing | 2 weeks | Conduct unit testing, integration testing, and user acceptance testing. |
| Pilot implementation | 2 weeks | Deploy the system in a selected institution and collect feedback, |
| Final Deployment | 2 weeks | Roll out the system to all institutions and host organizations. |
| Training | 2 weeks | Conduct training sessions for students, staff, and host organizations. |
| Evaluation | 1 weeks | Evaluate system performance and user satisfaction. |

6.1 CONCLUSION

The proposed digital field training application system aims to address the inefficiencies and challenges of the existing manual processes. By leveraging technology, the system will improve efficiency, transparency, and accessibility, ensuring that students gain valuable practical experience. While challenges such as limited ICT infrastructure and resistance to change may arise, these can be mitigated through proper planning, training, and stakeholder engagement. The successful implementation of this system will not only benefit students but also contribute to the overall development of Tanzania’s education sector.

CHAPTER SEVEN

7. REFERENCES

Here are some references to support your project proposal:

*1. Tanzania Ministry of Education, Science, and Technology. (2020). National Education Policy.*

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