Eastern Visayas State University

Project Proposal

Systems Analysis and Design

Team Lead: Dr. Ma. Windie C. Velarde

Project Title
Automation and Archiving of School Form 10)

Project Overview

The project titled **"Automation and Archiving of School Form 10"** aims to modernize the management of student permanent records through a **web and mobile application**. This system will automate the recording, storage, and retrieval of **School Form 10**—the official student permanent record.

The system will be implemented initially at **San Fernando Central School**, which was founded in **1935** and currently caters to **kindergarten to Grade 6** and **SPED classes** with around **1,300 enrolled students annually**.

Preliminary Investigation

Problem description: The school currently manages Form 10 documents manually. This process is time-consuming, prone to misplaced files, and slows down access to student information. Teachers and record officers experience delays in retrieving needed records, which impacts overall workflow efficiency.

Proposed solution: Develop a digital system that automates the storage and retrieval of Form 10 documents. The system will allow faster access to student records, reduce the risk of lost files, and streamline document handling. It will operate on both web and mobile platforms and integrate with a database capable of digitizing records using OCR technology.

Scope (what's included/excluded):

Included:

- Digitization of Form 10 documents
- Storage and retrieval of student records
- Web and mobile access for authorized users
- Basic user training for teachers and record officers

Excluded:

- On-site inspections or physical document management improvements
- Advanced analytics beyond basic search and retrieval
- Integration with other school management systems beyond Form 10 records

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Feasibility Study

Introduction: This feasibility study assesses the practicality of developing the *Automation and Archiving of School Form 10* system. The study evaluates whether the project can be successfully developed and implemented within the available time, resources, and technical capacity of the development team. It also aims to determine if the proposed system will effectively address the identified problems in managing and retrieving students' permanent academic records.

Operational Feasibility: The system is designed to replace the manual process of storing and retrieving Form 10 documents. It aims to automate record handling, provide faster access to student information, and reduce the risk of misplaced files. Given that the school currently relies on manual filing and lacks a digital database, the proposed system represents a notable improvement in workflow efficiency. User acceptance is expected to be positive, particularly among teachers and record officers who face delays with manual searches, though some training may be required to ensure a smooth transition. Overall, the system is operationally feasible.

Technical Feasibility: The project will utilize web and mobile platforms, integrated with a database system capable of OCR (Optical Character Recognition) to digitize handwritten records. Current school hardware and internet connectivity are expected to support the system, with only minor limitations in processing speed and bandwidth. By leveraging open-source technologies, the team can minimize software costs and system dependencies. Considering these factors, the system is technically feasible within the existing hardware and software environment.

Economic Feasibility: The project's main costs are expected to come from development tools, web hosting, and data storage. By using free or open-source platforms, the overall expense is minimized, while long-term savings from reducing paper use and manual labor are significant. With these considerations, the system is economically feasible and offers a high potential return on investment over time.

Schedule Feasibility: The system must be developed, tested, and presented within one semester. Although the timeline is tight, careful division of tasks and milestone scheduling make the development achievable. With the collaborative effort of the whole class and disciplined project management, the project is considered feasible.

Project Objectives

The main goal of this project is to develop a computerized system for the Automation and Archiving of School Form 10. The system aims to simplify and digitalize the process of recording, storing, and retrieving student academic records, ensuring accuracy, efficiency, and long-term accessibility for school administrators and staff.

Specific Objectives:

1. To design and develop a user-friendly system that allows authorized users to securely store and manage student Form 10 records.

2. To automate the manual process of filing, searching, and updating records to reduce time and human error.
3. To implement a database that ensures proper organization and backup of all student data.
4. To provide features for generating and printing Form 10 reports when needed.
5. To enhance data security and minimize the risk of record loss due to physical damage or misplacement.
6. To promote paperless transactions and improve the efficiency of school record management.

Project Benefits

The proposed system entitled **"Automation and Archiving of School Form 10"** is expected to bring significant improvements in the management and retrieval of student records at **San Fernando Central School**. The following benefits highlight its relevance and contribution to the institution and its stakeholders.

1. Operational Efficiency
The automation of School Form 10 processes will streamline record retrieval and documentation, minimizing manual effort and delays in providing requested records. This improvement will allow school personnel to focus more on administrative and academic responsibilities rather than repetitive clerical tasks.

2. Data Accuracy and Reliability
By integrating Optical Character Recognition (OCR) and data validation features, the proposed system ensures higher accuracy in digitizing handwritten or printed forms. This reduces human error and maintains the integrity of student records across multiple school years.

3. Security and Data Protection
The system provides secure access through user authentication, audit trails, and backup mechanisms. These features safeguard sensitive student data against loss, unauthorized access, or alteration, ensuring compliance with data privacy standards.

4. Transparency and Accountability
An integrated logging feature records all user actions, promoting accountability in the management and release of student records. This level of transparency helps build trust between the administration and stakeholders.

5. Accessibility and Convenience
Through web and mobile platforms, authorized users can conveniently search, retrieve, and generate student reports anytime and anywhere. This accessibility enhances service delivery and improves overall user satisfaction.

6. Cost-Effectiveness and Sustainability
The system reduces reliance on paper-based records and physical storage spaces, resulting

in cost savings for the school. Over time, this transition to digital documentation promotes sustainability and environmental responsibility.

7. Scalability and Institutional Advancement
Designed for adaptability, the system can be extended to other schools or integrated with future institutional databases. This scalability makes it a forward-looking solution aligned with the digital transformation initiatives of the education sector.

Project Constraints

The development of the **Automation and Archiving of School Form 10** is subject to several constraints that may affect its implementation and overall performance. These constraints are acknowledged to ensure realistic project planning and management throughout the development process.

1. Time Constraint
The project must be accomplished within the duration of the current semester. This limited timeframe restricts the amount of time available for system development, testing, evaluation, and user training, which may impact the completeness of the system features upon initial release.

2. Budget Constraint
Due to financial limitations, the project team may not have sufficient resources to acquire advanced hardware components, licensed software tools, or additional cloud storage services. This constraint requires the team to utilize open-source technologies and existing school resources to minimize expenses.

3. Technical Constraint
The proposed system must function within the school's existing technological infrastructure. Since the available computers and internet connection may have limited processing capacity and bandwidth, optimization and lightweight system design are essential to ensure stable performance.

4. Human Resource Constraint
The development team consists of a limited number of members, and the intended users — particularly teachers and record officers — possess varying levels of technical proficiency. This may affect the speed of training, feedback gathering, and system adoption.

5. Data Constraint
Some historical student records are handwritten, incomplete, or physically damaged. These conditions may affect the accuracy and efficiency of the digitization process, especially when applying Optical Character Recognition (OCR) for data conversion.

6. Security Constraint
The system must strictly comply with data privacy and security standards to protect sensitive student information. This includes implementing secure authentication, encrypted data storage, and controlled access to authorized personnel only.

7. Operational Constraint

During the development and testing phases, the system must coexist with the school's existing manual record-handling process. Disruptions to ongoing operations must be minimized to avoid delays in administrative tasks and ensure a smooth transition to the automated system.

Project Development Plan / Timeline

The project development plan outlines the sequence of activities and expected deliverables for each phase of the Automation and Archiving of School Form 10 system. It follows the structured approach of the System Development Life Cycle (SDLC) to ensure systematic progress from planning to evaluation.

Phase	**Tasks / Activities**	**Duration**	**Expected Output/ Deliverables**
Planning & Initiation	- Define project objectives and scope - Identify stakeholders (teachers, registrar, admin) - Conduct initial study of current manual process - Draft proposal and seek approval	Week 1	Approved Project Proposal
System Analysis	- Gather system requirements (interviews, surveys, document analysis) - Analyze the existing School Form 10 process - Identify problems and areas for improvement - Develop Data Flow Diagram (DFD), Use Case Diagram, and Entity Relationship Diagram (ERD)	Week 2	System Requirements Specification (SRS), Process Models
System Design	- Design database schema for School Form 10 records - Design user interface mockups - Create system architecture diagram - Develop navigation and process flow	Week 3	System Design Document (SDD), Prototype Layouts

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System Development (Implementation)	- Develop database and backend logic - Code modules for form input, updating, archiving, and retrieval - Implement authentication and user roles (admin, registrar, teacher) - Integrate all modules	Week 4-5	Working System Prototype
Testing Phase	- Conduct unit testing and integration testing - Perform User Acceptance Testing (UAT) - Fix errors and refine system features	Week 6	Test Results, Bug Fix Reports
Deployment & Documentation	- Deploy system in a test environment (school or local server) - Conduct training for users - Prepare user manual and technical documentation	Week 7	Deployed System, User Manual
Evaluation & Maintenance	- Evaluate system performance and user feedback - Make necessary adjustments or improvements - Finalize project report and presentation	Week 8	Final System, Evaluation Report, Project Presentation

System Requirement Specification (SRS) Draft

This document presents the preliminary list of **functional** and **non-functional requirements** for the proposed **Automated School Form 10 Archiving and Retrieval System**. These requirements are subject to refinement and validation during the System Analysis Phase.

1. Functional Requirements

1.1 User Authentication and Roles

- The system shall allow secure login for administrators, records officers, and other authorized users.
- The administrator shall have the capability to add, edit, and remove user accounts.
- Different access privileges shall be implemented based on user roles to ensure data confidentiality and accountability.

1.2 Form 10 Record Management

- The system shall allow the uploading, digitization, and archiving of School Form 10 records.
- The system shall support editing and updating of student information and academic records.
- Each Form 10 record shall be stored in a structured database for easy retrieval and management.

1.3 Search and Retrieval

- The system shall enable quick and efficient search of student records using parameters such as name, grade level, school year, or Learner Reference Number (LRN).
- Search results shall display relevant information with options for viewing, downloading, or printing.

1.4 Request and Approval Process

- The system shall allow teachers or authorized personnel to request access to a student's Form 10.
- The records officer shall have the authority to review, approve, or deny the request before releasing the digital copy.

1.5 Audit Trail and Logging

- The system shall maintain a log of user activities, including login sessions, record updates, and data retrievals, to ensure transparency and accountability.

1.6 Report Generation

- The system shall generate printable and downloadable reports containing student academic history and transaction logs.

1.7 Backup and Recovery

- The system shall perform automated and scheduled backups of stored records to ensure data preservation in case of system failure or data corruption.

2. Non-Functional Requirements

2.1 Performance

- The system shall retrieve and display student records within **three (3) seconds** under normal network conditions.

2.2 Security

- The system shall implement encryption for sensitive data and require authentication before granting access.
- User passwords shall be hashed and stored securely in the database.

2.3 Usability

- The user interface shall be intuitive and easy to navigate, ensuring accessibility even for users with limited technical experience.

2.4 Reliability

- The system shall ensure data integrity and maintain a minimum of **99% uptime** under standard operating conditions.

2.5 Compatibility

- The web-based system shall operate smoothly on commonly used browsers such as **Google Chrome, Microsoft Edge, and Mozilla Firefox**.
- A responsive mobile version shall be compatible with **Android** devices.

2.6 Maintainability

- The system architecture shall follow a modular design to facilitate code updates, debugging, and feature enhancements.

2.7 Scalability

- The system shall be capable of accommodating additional users, records, and integration with other school systems in future expansions.

Project Team and Responsibilities

The successful development of the Automated School Form 10 Archiving and Retrieval System relies on a collaborative effort among designated team leaders, each responsible for a specific phase of the System Development Life Cycle (SDLC). The following outlines the roles and responsibilities of each project leader:

Names	Roles	Resposibility
Daculo, Ralph Barry	Leader in System Planning	Responsible for identifying the problem, defining objectives, and determining the project's feasibility.
Dulnuan, Apollo Travis	Leader in System Analysis	Responsible for gathering data, analyzing user requirements, and defining system functions.
Abanid, Angela Mae	Leader in System Design	Responsible for creating the system's architecture, database, and interface designs based on analysis results.

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Lazarte, David	Leader in System Implementation	Responsible for supervising coding, testing, installation, and user training.
Claridad, Allen Lemuel	Leader in System Security	Responsible for monitoring system performance, fixing issues, and applying necessary updates after deployment.