

**UNIVERSITY OF MINDANAO DIGOS COLLEGE**  
**BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY**



**“UM Digos College Community Extension Center Management System  
(UMDC-CECMS)”**

**In Fulfillment of the Final Project for IT12/L  
(Systems Integration & Architecture)**

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# **CHAPTER 1**

## **INTRODUCTION**

### **1.1 Background of the Study**

The Community Extension Center (CEC) in University of Mindanao serves as an important link between the institution and the partner communities they serve. The overarching purpose of the Community Extension Center is to assist in the development of communities involving local individuals and groups through the institution's various banner programs and services [1].

In the Community Extension Center (CEC) in UM Digos College, there is an absence of a unified platform for managing the banner program's activities which has led to some significant challenges. The current reliance on manual processing like creating year end management reports from the analysis of documents and archiving using online storages and physical cabinets, slows down efficiency and consistency. By adopting a system for document management, organizations can enhance the speed and accuracy of their reporting processes, thus addressing the inefficiencies associated with manual methods [2]. The methods the Community Extension Center (CEC) in UM Digos College currently uses not only increase the risk of mismanagement of data but also make it difficult to monitor the conducted activities.

Given these gaps, the UM Digos College Community Extension Center Management System (UMDC-CECMS) will be developed to enhance management for the Community Extension Center in UM Digos College. By integrating profiling and proposal submission functionalities, the UMDC-CECMS aims to address the inefficiencies in managing activities and reduce manual workload conducted by each banner program. According to [3], institutions using a management information system for such documents would outperform traditional methods in terms of speed and ease of business processes. Through these improvements, the UMDC-CECMS seeks to improve the efficiency and impact of these activities in UM Digos College.

## **1.2 Statement of Objectives**

### **1.2.1 General Objectives**

The general objective of the UMDC-CECMS is to develop a web based platform/Management Information System for the Community Extension Center (CEC) in UM Digos College.

### **1.2.2 Specific Objectives**

The specific objectives of the UMDC-CECMS are to develop a module that profiles the Departments, Academic Programs, Banner Programs, Partner Communities and Partnerships & Linkages, detailing their information. To create a module that enables the Focal Persons of each Department of Banner Program to submit, view, and monitor their project proposals efficiently. And lastly to automate the integration of the approved activities into the events calendar for a more optimized scheduling and monitoring of future and ongoing activities.

## **1.3 Significance of the Study**

The development of the UMDC-CECMS holds significance in enhancing the efficiency of the Community Extension Center (CEC) in UM Digos College. Through the integration of the proposal submissions for every activity by each banner program and integration of an events calendar, the system will simplify and make operations significantly easier, ensuring better coordination between the CEC and Focal Persons of each Banner Program. This will result in a more organized and transparent management of activities, ultimately supporting the institution's goal of fostering community development and engagement.

## **1.4 Scope and Limitation of the Study**

### **1.4.1 Scope**

The scope of the UMDC-CECMS facilitates the profiling of Departments, Academic Programs, Banner Programs, Partner Communities, and Partnerships & Linkages, providing detailed demographic information. This simplifies the submission, viewing, and monitoring of activity proposals by each banner program, ensuring efficient proposal management. Approved activities are automatically integrated into a centralized Events Calendar, enabling seamless scheduling and monitoring of banner program activities. Additionally, the system provides role-based access controls, ensuring that user roles, including Admin (CEC Head, CEC Coordinator), CEC Office Assistant, Focal Persons, VP Director and Dean are assigned specific permissions and responsibilities.

### **1.4.2 Limitation**

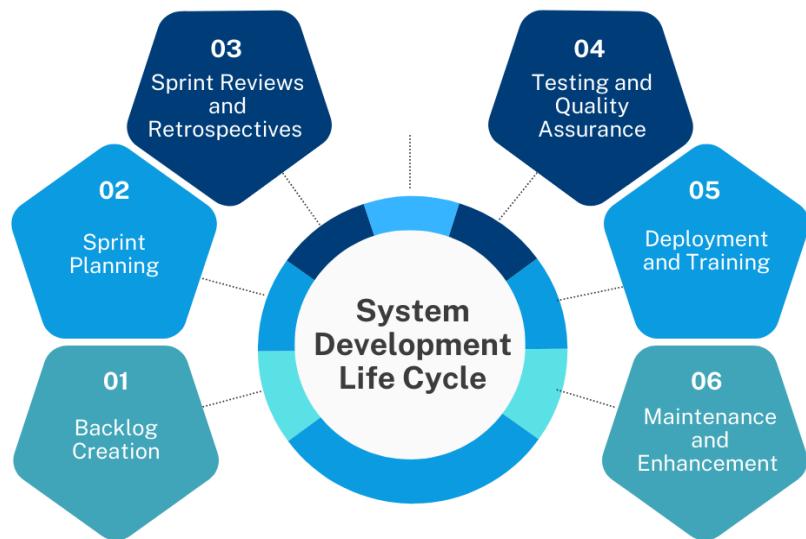
The development of UMDC-CECMS is confined to only addressing the operational needs of the Community Extension Center (CEC) in UM Digos College and may not be applicable to other institutions' extension programs. Along with this, the system does not provide basic and advanced document editing capabilities. And lastly, the system does not conduct or handle direct evaluations of the impact of the extension programs on partner communities.

## CHAPTER 2

### METHODOLOGY OF THE STUDY

#### 2.1 System Development Life Cycle

The development of UMDC-CECMS will utilize Scrum, a framework within Agile, as the SDLC methodology. Scrum's iterative and incremental approach will enable the team to adapt to changing requirements and deliver functional components of the system in prioritized sprints.



**Figure 1:** System Development Life Cycle of the UMDC-CECMS

#### Backlog Creation

The backlog will be created during this phase, prioritizing the features and functionalities of the UMDC-CECMS.

Features Backlog	
1	Development of the integral user interfaces
2	Development of the profiling of each department, academic programs and banner programs

<b>3</b>	Development of the profiling of each partner community and Partnerships & Linkages
<b>4</b>	Development of program proposal submissions
<b>5</b>	Development of the foundational user roles
<b>6</b>	Development of the approval workflows

*Table 1: Product Backlog of the prioritized list of features for the system*

### Sprint Planning

The team will collaboratively plan and conduct sprints, selecting high-priority items from the backlog to be developed in each sprint cycle.

Sprints	
Sprint	Description
<b>1</b>	<b>Development of the integral user interfaces</b>
	Develop the responsive UI layout of the website for the key pages
	Implement a navigation bar
	Design wireframes for key pages (Signup/Login, Home/Dashboard, Departments, Academic Programs, Partner Communities, Partnerships & Linkages)
	Integrate static placeholder data for the key pages
<b>2</b>	<b>Development of the profiling of each department, academic programs and banner programs</b>
	Develop the entire database model and entity relationship diagram for storing information
	Define data fields and structure for the profiles
	Create the UI for viewing, adding and editing details
	Implement CRUD (Create, Read, Update, Delete) operations
<b>3</b>	<b>Development of the profiling of each partner community and Partnerships &amp; Linkages</b>
	Define the data structure and key attributes for partner community and Partnerships & Linkages profiles
	Define data fields and structure for the profiles

	Create the UI for viewing, adding and editing details
	Implement CRUD (Create, Read, Update, Delete) operations
<b>4</b>	<b>Development of activity proposal submissions</b>
	Define data fields and structure for activity proposal submissions
	Create the form UI for submitting activity proposals
	Implement the backend logic for storing and managing proposal submissions
	Create the UI for viewing, adding and editing details
	Implement CRUD (Create, Read, Update, Delete) operations
<b>5</b>	<b>Development of the foundational user roles</b>
	Create a user management interface for assigning and managing roles
	Develop the role based access control for user roles (super admin, admin, staff)
<b>6</b>	<b>Development of the approval workflows</b>
	Define the approval workflow steps (proposal review, approval, rejection)
	Create the UI for reviewing and approving proposals (buttons for approval and rejection)
	Develop role based permissions for approval workflows
	Implement backend logic for approval flow (status updates)

**Table 2:** Sprint Backlog of the more specific tasks from the Product Backlog

### Sprint Reviews and Retrospectives

At the end of each sprint, the team will review the completed work and gather feedback to improve the next iterations. Retrospectives will focus on refining team processes and addressing challenges encountered during development.

## **Testing and Quality Assurance**

Comprehensive testing will be conducted throughout and after sprint cycles. This phase will involve unit testing and integration testing to ensure system reliability and usability.

## **Deployment and Training**

The system will be deployed in a live environment. Training sessions will be conducted to familiarize users, such as the UMDC CEC Staff and Focal Persons.

## **Maintenance and Enhancement**

After deployment, constant maintenance and iterative improvements will be employed based on the feedback from users who will guide future updates, ensuring that the system will remain relevant and effective.

The Scrum-Agile framework emphasizes adaptability and incremental delivery, enabling the team to respond promptly to the feedback from the UMDC CEC staff and evolving requirements. This approach ensures that the UMDC-CECMS evolves to meet the needs of the UMDC CEC.

## **2.2 System Architecture**

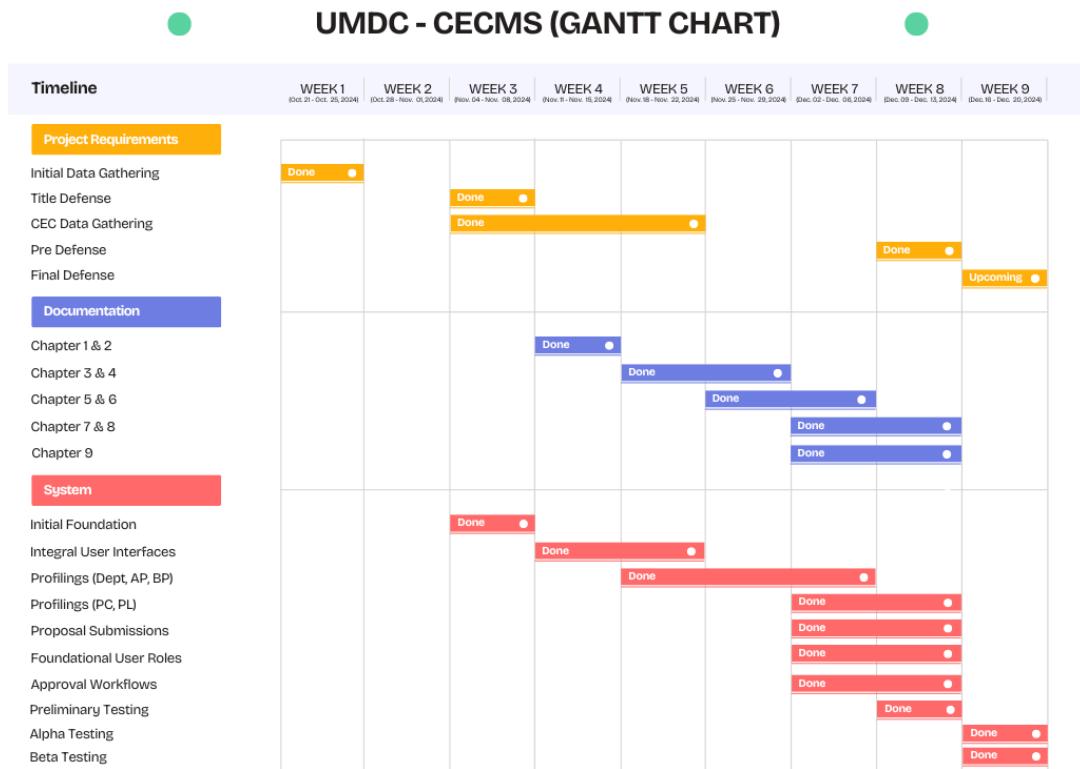
The architecture of UMDC-CECMS will follow a three-tier structure:



***Figure 2: System Architecture for the UMDC-CECMS***

- **Presentation Layer:** This layer will provide a responsive user interface for the different user types which includes the Super Admin, Admin and Staff. This allows for easy navigation of features like the profiling, activity proposal submissions and event tracking using the events calendar, while also ensuring compatibility across different browsers and devices.
- **Application Layer:** This layer will house the logic responsible for processing data and managing tasks such as proposal submissions, approval workflows, and event calendar integration. It processes data that are related to Banner Programs.
- **Data Layer:** This layer will manage the system's data, including the records of the outreach program activities, the different profiles and the activity proposals.

## 2.3 Gantt Chart



*Figure 3: Gantt Chart of the tasks made for the UMDC-CECMS*

## **CHAPTER 3**

### **DATA GATHERING PROCEDURES AND OUTPUT**

#### **3.1 Research Design**

The study will follow a Qualitative Research Design to conduct the data gathering and will use descriptive methods to collect insights from the UM Digos College (UMDC) Community Extension Center (CEC) Staff. This design will emphasize understanding the operational challenges of the UMDC CEC and addressing these challenges. This approach also enables the collection of detailed information on the workflows and documents or papers involved.

#### **3.2 Data Collection Methods**

The primary data collection methods include:

##### **1. Document Analysis**

- a. Current forms/papers and templates used
- b. Previously conducted outreach program documentations
- c. Year End Management Review presentation

##### **2. Interviews**

- a. Key respondents were selected based on their roles and involvement in UMDC CEC's operations
- b. Respondents include:
  - i. UMDC CEC Coordinator
  - ii. UMDC CEC Office Assistant

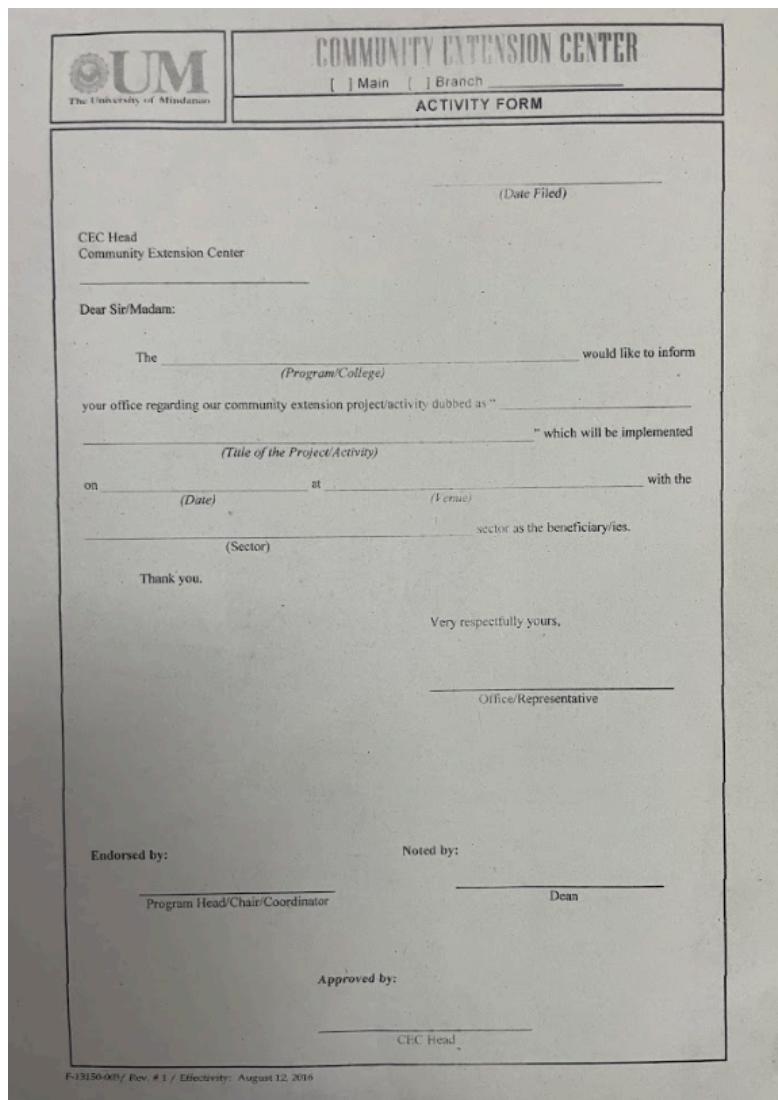
##### **3. Observations**

- a. Current workflow
- b. Year End Management Review generating process
- c. Activity Submission and Approval Processes

### 3.3 Data Collection Details

#### 3.3.1 Documents

These documents were shared during and after the interviews with the CEC Staff (CEC Office Assistant and CEC Coordinator). These will help in the creation of the system to better fit with the UMDC CEC.



The image shows a scanned copy of an 'ACTIVITY FORM' for the Community Extension Center (CEC) of The University of Mindanao (UM). The form is dated August 12, 2016. It includes fields for the CEC Head, project details, dates, venue, beneficiary sector, and signatures from various staff members.

**Community Extension Center**  
[ ] Main [ ] Branch \_\_\_\_\_  
**ACTIVITY FORM**

(Date Filed)

CEC Head  
Community Extension Center

Dear Sir/Madam:

The \_\_\_\_\_ would like to inform  
(Program/College)

your office regarding our community extension project/activity dubbed as "  
(Title of the Project/Activity)

on \_\_\_\_\_ at \_\_\_\_\_ with the  
(Date) (Venue)

sector as the beneficiary/ies.  
(Sector)

Thank you.

Very respectfully yours,

\_\_\_\_\_  
Office/Representative

Endorsed by: \_\_\_\_\_ Noted by: \_\_\_\_\_  
Program Head/Chair/Coordinator \_\_\_\_\_ Dean \_\_\_\_\_

Approved by:  
\_\_\_\_\_  
CBC Head \_\_\_\_\_

F-13150-005 / Rev. # 1 / Effectivity: August 12, 2016

**Figure 4:** Activity Form template used for the UMDC CEC

*Department of Teacher Education  
Roxas Extension, Digos City  
Telefax: (082)553-2914*

**PROJECT PROPOSAL**

Project Title	GALAW BARANGAY (Project Wellness)
Project Site	Ruparan National High School
Proponent	Department of Teacher Education ( <i>Bachelor of Physical Education</i> )
Project Duration/Date	5 years/April – June 2024 – 2nd Semester
Amount Requested	P11,900.00
SDG Alignment	Goal 3 – Good Health and Well-being

**RATIONALE / APPROACH**

The sedentary lifestyles that are prevalent in today's culture are the root cause of many of the prevalent health issues that people face. Because of this, one of the primary goals of physical education is to foster holistic development through the participation in many types of physical activity. In addition, a healthy populace is directly proportional to a healthy nation; for this reason, it is essential for communities to support and encourage activities that involve physical activity. This can be helped by participating in a variety of activities such as sports, dance, aerobics, and others which will be facilitated by the Bachelor of Physical Education under the Department of Teacher Education. This activity can also be a support on the pursuant to the DepEd Order No. 060 s. 2021 entitled Galaw Pilipinas - the DepEd Calisthenics Exercise Program.

**OBJECTIVES**

At the end of the project, the participants shall be able to:

- Inculcate the value of physical activity engagement towards one's life
- Promote physical activity as a way to combat vices and even illegal drugs
- Improved the mind setting and practices of the participant when it comes to physical activity
- Increased engagement in any forms of physical activity
- Promote active participation on the Galaw Pilipinas Program of the Department of Education.

**PROJECT DESCRIPTION/DEPLOYMENT**

The project will be spearheaded by the Bachelor of Physical Education Program. This program will allow their field experts to share their knowledge with the participants, the faculty, staff and students of Ruparan National High School. There will be two speakers for different topics: one (1) will discuss importance of physical activity and the second speaker will talk and at the same time facilitate some physical activities like exercise, sports and dance. The entire activity will last for 3 hours maximum. There will be eight (8) working committees that will be working on this project and thirty (30) participants from the Ruparan National High School. Below are the names of the speakers and committee members:

**Figure 5: Banner Program Project Proposal of Project Wellness**

**NUMBER OF BANNER PROGRAMS PER DEPARTMENT**

COMMUNITY EXTENSION CENTER  
SY 2023 - 2024



**Analysis:**

Table shows varying success in implementing banner programs of the different departments. DASE stands out with a 400% implementation rate exceeding its target of 2 projects by implementing 4. DTE also shows strong performance with 8 implemented projects achieving 100% of its target. Other departments such as DAE, DBA, and DCJE meet their targets with 100% banner project implementation. DTP falls short achieving only 50% of its target with 1 project instead of the expected 2. The total implementation across departments shows a high level of banner project execution with 14 out of 16 planned projects successfully completed.

Dept.	Number of Academic Programs			Number of Banner Programs	Number of Banner Projects Implemented		Remarks
	Total	Active	Inactive		Target	Actual	
DAE	2	2	0	1	1	1 (100%)	
DASE	5	4	1	2	1	4 (400%)	
DBA	2	2	0	2	1	2 (200%)	
DCJE	1	1	0	1	1	1 (100%)	
DTE	5	4	1	4	8	8 (100%)	
DTP	2	2	0	2	2	1 (50%)	
SHS				1			
NTP				1			
Institution				1			
Alumni				1			
<b>TOTAL</b>	<b>17</b>	<b>15</b>	<b>2</b>	<b>16</b>	<b>14</b>	<b>16</b>	

**Accreditation Logos:**

- Autonomous Status
- Roxas 2 Model Program of Accredited Programs
- Accredited
- ISO 9001:2015 Certified
- PICAB Quality Affordable Open Education

**Figure 6: A page from the UMDC CEC Year End Management Review**



## COMMUNITY EXTENSION CENTER

Roxas Extension, Digos City

### PROJECT PROPOSAL

#### I. GENERAL INFORMATION

a) Title of the Activity	: Computer Literacy Enhancement Program (CLEP)
b) Department/Program	: Department of Technical Programs/Information technology
c) Banner Program Impormasyon	: BUMATI KA - [Barangay at UM Magkaagapay sa Tamang para sa Kaunlaran]
d) Target Beneficiaries	: ALS (Alternative Learning System) Students and Coordinators with SoITS Organization and 4 <sup>th</sup> YEAR IT students
e) Target Area	: Brgy. Aplaya, Digos City
f) Target Date of Activity	: 2 <sup>nd</sup> week of April, 2021
g) Activity Venue	: UMDC Campus - Computer Laboratory
h) Budget Proposal	: 15, 890.00

#### II. PROJECT DESCRIPTION (Approach)

The "Barangay at UM Magka-agapay sa Tamang Impormasyon para sa Kaunlaran" (BUMATI KA) is the banner program of the Department of Technical Programs/Information Technology where the priority services are on trainings of basic Computer Operations and MS Word under Computer Literacy for Alternative Learning System (ALS) students with the assistance of the Society of Information Technology Students (SoITS) organization and the 4<sup>th</sup> year IT students in which the training aims with the following objectives of the two (2) training programs.

The ALS students will be able to;

- To enhance the literacy level of ALS students in basic Computer Operation.
- To increase the learning capability of ALS student in using MS Word.

The project expects to spend P 15, 890.00 for the series of activities. This amount includes the, food expenses, snacks, documentation, certificates, Facemask, Face shield and other vital materials for the conduct of the said program. (Please see attached budget).

#### III. DEPLOYMENT

The Department of Technical Programs will implement the project in cooperation with the local government of Barangay Aplaya. The said activity will be facilitated by seven (7) DTP faculty members with the help of eight (8) Members of the SoITS organization and sixteen (16) 4Th Year IT students. And will be participated by forty-five (45) ALS Students of DepEd Digos City District.

The DTP-Information Technology provides services on trainings of basic Computer Operations and MS Word under Computer Literacy for Alternative Learning System (ALS) students to enhance their literacy skills specifically to;

Page 1 of 4

**Figure 7: Previous BUMATI KA Project Proposal**

### 3.3.2 Interviews

#### Interview Format

The interviews were semi-structured, allowing respondents to freely discuss their experiences while providing us with opportunities to delve deeper into specific topics. Each interview lasted approximately 30-60 minutes.

## Interview Participants

Name	Position	Date of Interview
Mrs. Gelli Mae N. Gallera	CEC Office Assistant	November 5, 2024
Mrs. Gelli Mae N. Gallera	CEC Office Assistant	November 11, 2024
Mr. Eduard L. Pulvera, MSIS	CEC Coordinator	November 16, 2024
Mr. Eduard L. Pulvera, MSIS	CEC Coordinator	November 19, 2024

*Table 3: Participants interviewed*

## Interview Manuscript

Below are the important excerpts or key points taken from the interviews conducted with Mrs. Gelli Mae N. Gallera (CEC Office Assistant) and Mr. Eduard L. Pulvera, MSIS (CEC Coordinator):

### **Interview 1:**

**Mrs. Gelli Mae N. Gallera (CEC Office Assistant)**

November 5, 2024

**Interviewer:** What are the processes here in CEC?

**Respondent:** It's about the management of community activities in UM Digos College.

**Interviewer:** Regarding paperwork, do you want it to be processed faster?

**Respondent:** Yes, since we manually tally the data collected from the community before summarizing it.

**Interviewer:** These papers you process, are they mostly proposals?

**Respondent:** Yes, proposals, such as letters to partner barangays for conducting activities.

**Interviewer:** Regarding these papers, what processes or inputs do you put in your computers?

**Respondent:** We save summaries or generate reports per departments and banner programs.

**Interview 2:**

Mrs. Gelli Mae N. Gallera (CEC Office Assistant)

November 11, 2024

**Respondent:** Sir Ed (CEC Coordinator) wants a system to be created with the report presentation I sent you. I think he wants it automated, where we can just input the information, and graphs are generated automatically. For example, this year, 50% of participants in DTE attended.

**Interviewer:** Ah, yes, the executed outreach activities. But another important problem for the CEC is the attendance and evaluation, right?

**Respondent:** Yes, but you can create it later. Just focus on what Sir Ed mentioned for now.

**Respondent:** Focus on the suggestion first because I sent you a lot of information and resources.

**Interview 3:**

Mr. Eduard L. Pulvera, MSIS (CEC Coordinator)

November 16, 2024

**Respondent:** Regarding the impact assessment, after three years, the system should send a notification to the focal person of the department's program. For example, if a program has a banner program like "BUMATI KA," which is long-term (five years), there are activities under that program like Microsoft, Java Programming, and Design. After three years, a formative evaluation should be conducted. For IT, the focal person is Ma'am Nesley. The system should notify her account, reminding her to conduct a formative evaluation of the program after three years. Was the program effective? After five years, an impact assessment should be conducted to determine its overall effect.

**Interviewer:** So each program's outreach will have its own evaluation, sir?

**Respondent:** Yes, each program, like the “BUMATI KA” program, will need an impact assessment. The system should notify the focal person and even lock their account until they submit the impact assessment. They must submit the assessment.

**Interview 4:**

Mr. Eduard L. Pulvera, MSIS (CEC Coordinator)

November 19, 2024

**Interviewer:** Sir, what's the difference between outreach and banner programs?

**Respondent:** A banner program is long-term, typically lasting five years. Outreach, on the other hand, is short-term and usually done in one day. For example, an outreach activity could be visiting a community to distribute rice.

**Respondent:** I also generate reports on sources of funding, and these must be consolidated. My report includes contributions from senior high school, non-teaching personnel, and others. I've already given you a copy of it. Our partner communities include Barangay San Miguel, Dawis, and Ruparan—three in total. These should be documented by the school year, noting when the partnership started. Additionally, if I click on a barangay, I should be able to see what services have been provided to them, including their profile and the history of services availed from UM.

**Interviewer:** That view would be for the focal person, right, sir?

**Respondent:** Yes, for the focal person and the admin.

**Respondent:** There are also privileges in some areas that the focal person shouldn't see, which is why we have limitations.

**Interviewer:** Sir, regarding the number of banner programs, will they also be clickable?

**Respondent:** Yes, you can reverse the setup. For example, if you highlight the banner program, it can be clickable alphabetically. You should be able to see which department and who hosted the program.

But consider this scenario: there are four programs, but only two are implemented. We have 16 banner programs to monitor, and we should be able to see those here. Banner programs are separate from proposals, okay?

**Interviewer:** Yes, sir.

### **Interview Summary**

The interviews highlighted the need for integrating a system in managing the CEC in UM Digos College. Currently, processes like tallying data, generation of report and management of activity documentations are manual, leading to inefficiencies. Key requirements include report generation being easily made through the system's analytics capability, notifying focal persons and categorizing the outreach program activities by status.

The system must support centralized data management, including the partner community profiles and banner program histories, while incorporating a role based access control for the system. Additionally, features like clickable dashboards and file management will enhance monitoring and facilitate easier report generation.

#### **3.3.3 Observations**

From what the team has observed in the CEC in UM Digos College, the CEC currently runs all their operations manually. They store all their files in labelled filing cabinets. They also utilize platforms such as MS Excel and MS Word to store all the information of the activities of each banner program. Some templates and papers are stored in the UMDC CEC Office Assistant's computer. Lastly, the UMDC CEC Coordinator manually calculates the data and creates the Year End Management Review, in which he is responsible for presenting at each Academic Year.

## **CHAPTER 4**

### **THE EXISTING SYSTEM**

#### **4.1 Company Background**

The Community Extension Center (CEC) in UM Digos College serves as a vital link between the institution and its partner communities, aiming to foster empowerment and self-reliance among marginalized groups. Guided by its vision of creating communities living a quality life, the CEC implements relevant programs addressing identified needs through active participation from faculty, staff, students, and administrators.

#### **Vision:**

Empowered and self-reliant communities living a quality life.

#### **Mission:**

To provide appropriate and relevant community extension programs and services to meet identified needs and problems of the people for the development of self-reliant communities through the maximum participation of the administration officials, teachers, non-teaching personnel and students.

#### **Goals:**

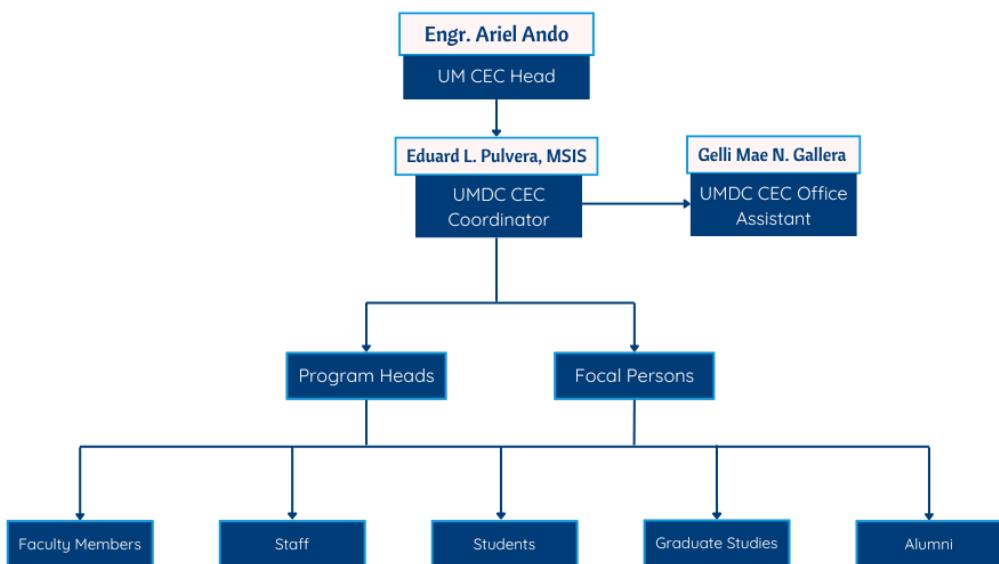
- To assist in the development of communities through various extension programs and services involving local individuals and groups.
- To promote productive and self-reliant communities through sustainable programs.

#### **Objectives:**

- To pursue development support programs for at least two (2) partner communities every five (5) years.
- To promote community involvement among the different sectors of the UM academic community through policy formulation, community awareness programs and capability building.

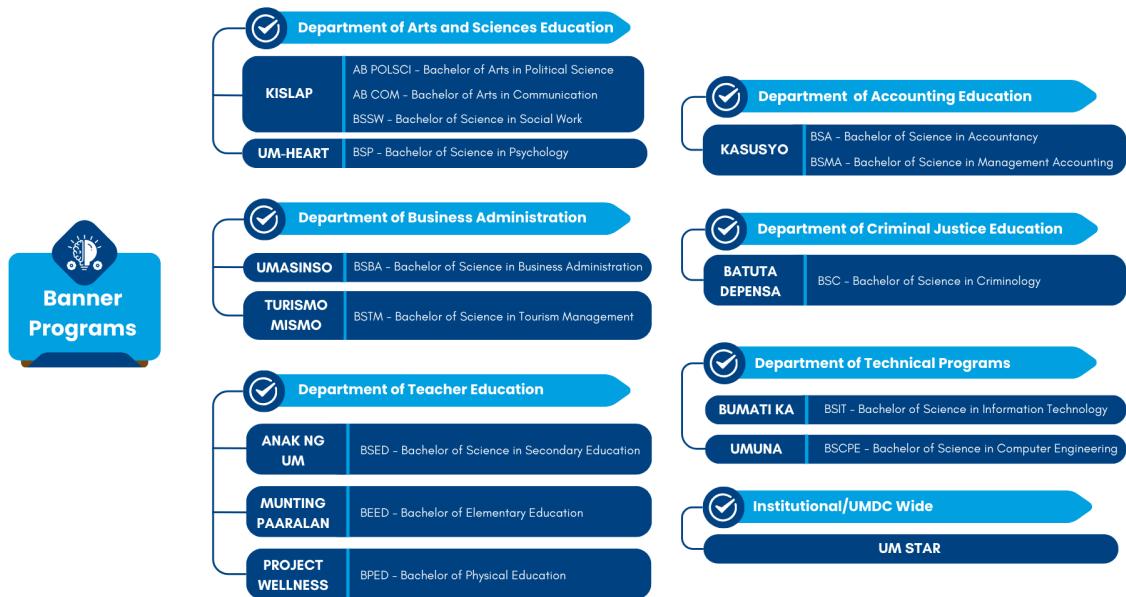
- To establish and maintain advocacy and networking efforts concerning issues confronting the underprivileged segments of the community.
- To enhance people's capability in responding to their own needs and problems thereby making them empowered and self-reliant.
- To undertake research and documentation activities to gain in depth knowledge that could be shared to the community and other institutions.
- To help generate and mobilize resources to finance livelihood projects that would increase people's productivity towards sustainable existence.

### **CEC Functional Chart:**



**Figure 8: Functional Chart of the UMDC CEC**

## Banner Programs:



**Figure 9: Banner Programs of each Department in UM Digos College**

### 4.2 Description of the System

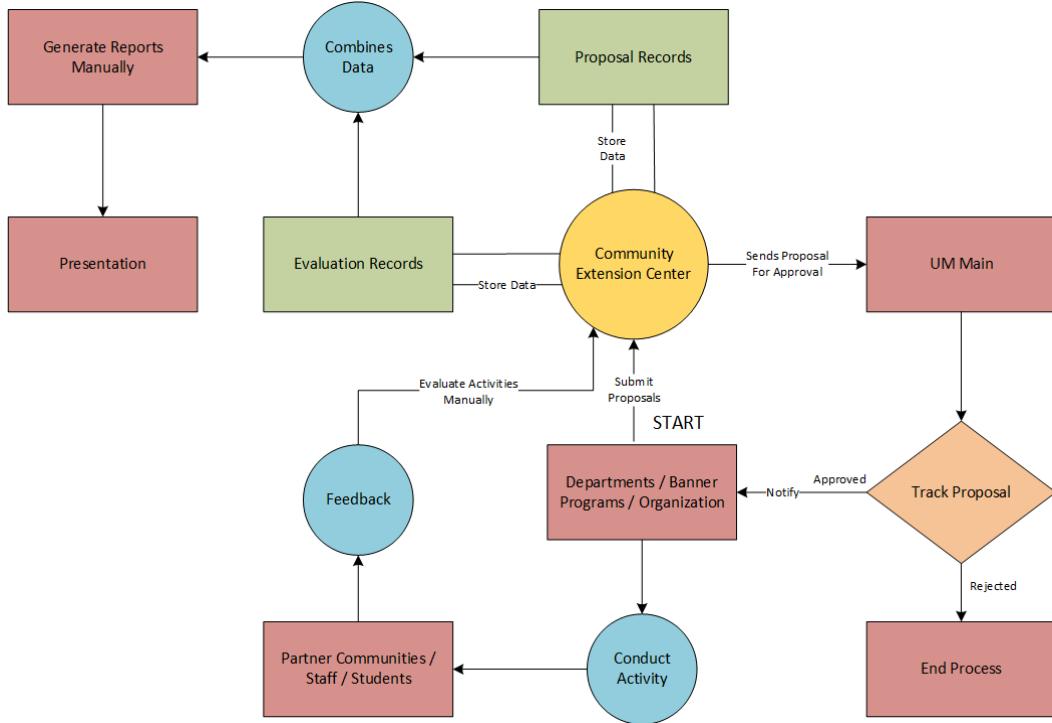
The UMDC CEC currently operates manually for managing their community extension activities. When Banner Programs plan to conduct their outreach programs, they submit physical activity proposals to the CEC for review and approval. These activity proposals, along with supporting documents like letters are stored in filing cabinets organized by Department and Academic Year.

During the implementation of activities, the Banner Programs collect attendance sheets, take photos, and gather the evaluations from the beneficiaries. These documents are then submitted physically to the UMDC CEC office, where they maintain several Excel files to track participation of the said activities.

For the records of the partnerships with the UMDC CEC, they maintain files containing profiles, activity histories and the MOAs. For year end reporting, they are submitted the activity documentations from each banner program. Using these submissions, the UMDC CEC Coordinator manually compiles all the data into a Powerpoint presentation, creating charts and tables to visualize participation rates, evaluations and program outcomes.

All of these physical files are stored in filing cabinets within the CEC office, with some softcopies saved on the UMDC CEC office computers.

### 4.3 Data Flow Diagram



**Figure 10:** Data Flow Diagram of the Existing System of the UMDC CEC

### 4.4 Data Dictionary

Department		
Column	Description	Examples
Name	name of the department	Department of Technical Programs
Description	description of the department	The Department of Technical Programs empowers students to become skilled technology professionals.
Status	status of the department if it is active or inactive	ACTIVE

**Table 4:** Department Data Dictionary Table of the Existing System

Department Programs		
Column	Description	Examples
Name	name of the department program	Bachelor of Science in Information Technology
Description	description of the department program	The BSIT program equips students with the skills to design, develop, and manage information systems.

Status	status of the department program if it is active or inactive	ACTIVE
--------	--	--------

**Table 5:** Department Programs Data Dictionary Table of the Existing System

Banner Program		
Column	Description	Examples
Name	name of the banner program	BUMATI KA
Description	description of the banner program	Barangay at UM Magka-agapay sa Tamang Impormasyon para sa Kaunlaran
Year Started	the year the banner program started	2012
Academic Year	the current academic year of the banner program	2023 - 2024
Target Faculty	target faculty participation for the banner program	7
Actual Faculty	actual faculty participation for the banner program	7
Target Students	target student participation for the banner program	15
Actual Students	actual student participation for the banner program	21
Formative Evaluation Studies	formative evaluation studies conducted	1
Impact Studies	impact studies conducted	1

**Table 6:** Banner Program Data Dictionary Table of the Existing System

Outreach Program / Activity		
Column	Description	Examples
Department Name	name of the department	Department of Technical Programs
Banner Program Name	name of the banner program	BUMATI KA
Partner Community Name	name of the partner community	Brgy. Ruparan
Activity Facilitators	the facilitators for the activity	Society of Information Technology Students (SoITS) organization and the 4th year IT students
Activity Beneficiaries	the target beneficiaries for the activity	ALS (Alternative Learning System) Students
Activity Title	title of the activity	ISDOGE
Activity Description	description of the activity	ICT Skills Development of Government Employees

Activity Date	target date of the activity	May 3, 2024
Activity Venue	target venue of the activity	Brgy. Aplaya, Digos City
Activity Budget Proposal	budget proposal of the activity	15, 890

**Table 7: Outreach Program Data Dictionary Table of the Existing System**

Partner Community		
Column	Description	Example
Name	name of the partner community	Barangay Ruparan
Description	description of the partner community	Ruparan is a barangay in the city of Digos, in the province of Davao del Sur.
Partner Community Type	the type of community partnered with the CEC	i.e. Barangay, Organization, etc
Island Group	island group of the partner community	Mindanao
Region	region of the partner community	Region XI - Davao Region
Province	province of the partner community	Davao del Sur
City	city of the partner community	Digos
Postal Code	postal code of the partner community	8002
Coordinates	coordinates of the partner community	6.7902, 125.3229 (6° 47' North, 125° 19' East)
Elevation Level	estimated elevation above sea level of the partner community	73.1 meters (239.8 feet)
Number of residents	number of residents of the partner community	4,278
History	brief history of the partner community	The population grew from 2,458 in 1990 to 4,278 in 2020, an increase of 1,820 people over the course of 30 years.
Services offered by UMDC	services offered to the partner community	The center implemented new initiatives to engage residents and build positive relationships.
Adoption Date (Start)	adoption date started	AY 2022 - 2023
Adoption Date (End)	adoption date ended	ONGOING
Contact Person Name	name of the contact person	John G. Smith
Contact Person's Contact Information	the contact information of the contact person	johnsmith@gmail.com
Status	the status of the partner community	ACTIVE

**Table 8: Partner Community Data Dictionary Table of the Existing System**

Partnerships & Linkages		
Column	Description	Example
Name	name of the partnerships & linkages	DILG Region XI
Description	description of the partnerships & linkages	The Department of the Interior and Local Government (DILG) promotes peace and order, ensures public safety, and strengthens local government
Partnerships & Linkages Type	the type of organization partnered with the CEC	i.e. LGU, GO, NGO, NPO, etc
Partnered Date (Start)	partnered date started	2019
Partnered Date (End)	partnered date ended	ONGOING
Status	the status of the partnerships & linkages	ACTIVE

**Table 9: Partnerships & Linkages Data Dictionary Table of the Existing System**

#### 4.5 Problem Areas

The main problem area for the CEC in UM Digos College is that they currently operate manually and rely heavily on physical documentation and storage, making file retrieval time consuming and risking document loss or damage. The files which include the Activity proposals, evaluations and reports are processed manually, which is time consuming for the UMDC CEC Office to retrieve and compile data from various Banner Programs.

Furthermore, the creation of Year End Management Review presentation is even more time consuming due to the UMDC CEC Coordinator having to manually gather then process the statistics from all the documents and Excel files. The lack of a centralized system makes it difficult to track Banner Program effectiveness for improving the overall Community Extension Programs.

## CHAPTER 5

### THE PROPOSED SYSTEM

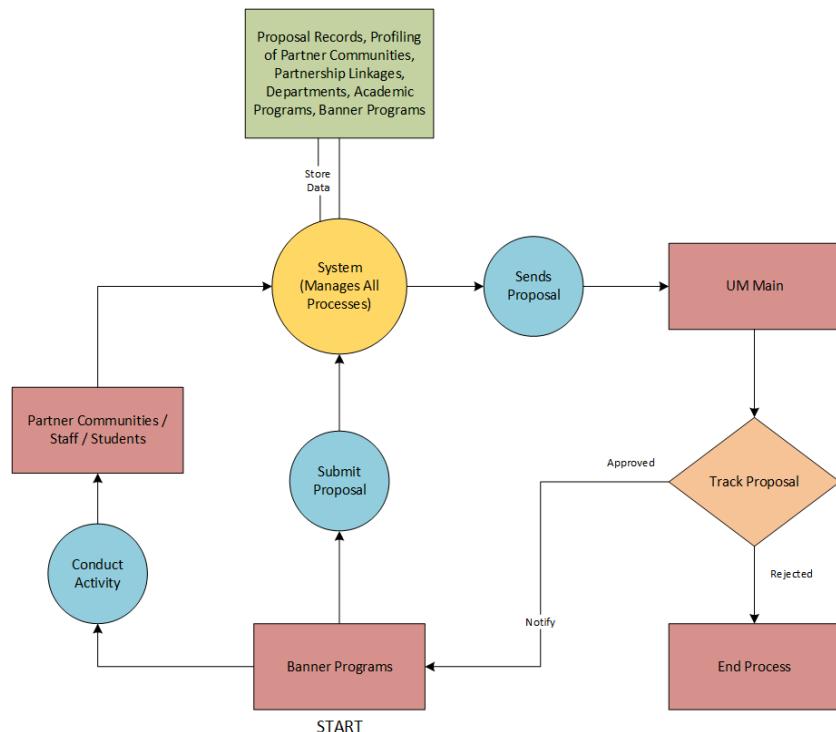
#### 5.1 System Overview

The UMDC-CECMS or the UM Digos College Community Extension Center Management System is a web based platform designed to improve the operations and management of the Community Extension Center in UM Digos College. The following are the key features of the system:

- **Profiling Modules:** Allows the detailed profiling of Departments, Academic Programs, Banner Programs, Partner Communities and Partnerships & Linkages.
- **Proposal Submission and Monitoring:** Allows Focal Persons of each Banner Program to submit, view, and monitor their outreach program activity proposals efficiently.
- **Events Calendar Integration:** Integrates approved activities into a centralized events calendar for effective scheduling and monitoring.

#### 5.2 Process Specification

##### 5.2.1 Data Flow Diagram



**Figure 11:** Data Flow Diagram of the Proposed System UMDC-CECMS

### 5.2.2 Data Dictionary

Users					
Table Name	Index	Column	Data Type	Description	Remarks
users	PK	id	INT	id number of user	
	FK	departmentID	INT	id number of the department	relates to the departments table
	FK	bannerProgramID	INT	id number of the banner program	relates to the banner programs table
		email	STRING	username of user	
		hashedPassword	STRING	password of user	Hashed Password
		firstName	STRING	first name of the user	
		lastName	STRING	last name of the user	
		role	INT	role of user	0 - Super Admin
					1 - Admin
					2 - Staff
		position	INT	position of the user	1 - CEC Head
					2 - CEC Office Assistant
					3 - CEC Coordinator
					4 - VP Director
					5 - Dean
					6 - Program Head
					7 - Focal Person
		contactNumber	STRING	contact number of the user	
		resetPasswordToken	STRING		
		resetTokenExpiry	DATETIME		
		status	STRING	status of system user	Inactive
					Active
		createdAt	DATETIME	timestamp the account was created in the system	
		updatedAt	DATETIME	timestamp the account was updated in the system	

**Table 10:** Users Data Dictionary Table of the Proposed System

Departments					
Table Name	Index	Column	Data Type	Description	Remarks
departments	PK	id	INT	id number of departments	
		name	STRING	name of the departments	None
					DAE
					DASE
					DBA
					DCJE
					DTE
					DTP
					SHS
		abbreviation	STRING	abbreviation of the department	ex: DTP
		description	STRING	description of the department	
		logoURL	STRING	url location of the logo	
		status	STRING	status of the department	Inactive
					Active
		createdAt	DATETIME	timestamp the department was created in the system	
		updatedAt	DATETIME	timestamp the department was updated in the system	

**Table 11:** Department Data Dictionary Table of the Proposed System

Academic Programs					
Table Name	Index	Column	Data Type	Description	Remarks
academic_programs	PK	id	INT	id number of the academic program	
	FK	departmentID	INT	id number of the department	relates to the departments table
	FK	bannerProgramID	INT	id number of the banner program	relates to the banner programs table
		name	STRING	name of the academic program	None
					BSA
					BSMA
					AB POLSCI
					AB COM
					BSSW
					BSP

					BSBA
					BSTM
					BSC
					BSED
					BEED
					BPED
					BTVTED
					BSNED
					BSIT
					BSCPE
	abbreviation	STRING	abbreviation of the academic program	Ex: BSIT	
	description	STRING	description of the academic program		
	totalStudents	INT	total students in the academic program		
	status	STRING	status of the academic program	Inactive	
				Active	
	createdAt	DATETIME	timestamp the academic program was created in the system		
	updatedAt	DATETIME	timestamp the academic program was updated in the system		

*Table 12: Academic Program Data Dictionary Table of the Proposed System*

Partner Communities					
Table Name	Index	Column	Data Type	Description	Remarks
partner_communities	PK	id	INT	id number of the partner community	
		name	STRING	name of the partner community	
		communityType	STRING	type of community partnered with the CEC	None
		description	STRING	description of the partner community	Barangay
		address	STRING	address of the partner community	
		adoptionStart	DATETIME	the adoption start date the cec partnered	
		adoptionEnd	DATETIME	the adoption end	

			date the cec partnered	
	contactPerson	STRING	name of the contact person	
	contactEmail	STRING	email of the contact person	
	contactNumber	STRING	number of the contact person	
	islandGroup	STRING	island group of the partner community	None Luzon Visayas Mindanao
	region	STRING	region of the partner community	None Region I Region II Region III Region IV-A Region IV-B Region V Region VI Region VII Region VIII Region IX Region X Region XI Region XII Region XIII NCR CAR BARMM
	province	STRING	province of the partner community	
	city	STRING	city of the partner community	
	postalCode	STRING	postal code of the partner community	
	coordinates	STRING	exact coordinates of the partner community	
	elevationLevel	FLOAT	estimated elevation above sea level of the partner community	
	population	INT	population of the partner community	
	povertyPopulation	INT	population of the partner community who are in poverty	

	history	STRING	history of the partner community	
	status	STRING	status of the partner community	Inactive
				Active
	createdAt	DATETIME	timestamp the partner community was created in the system	
	updatedAt	DATETIME	timestamp the partner community was updated in the system	

**Table 13: Partner Community Data Dictionary Table of the Proposed System**

Partnerships Linkages					
Table Name	Index	Column	Data Type	Description	Remarks
partnerships_linkages	PK	id	INT	id number of the partnerships linkages	
		name		name of the partnerships linkages	
		type		the type of organization partnered with the CEC	None
					LGU (Local Government Unit)
					GO (Government Organizations)
					NGO (Non Government Organization)
					NPO (Non Profit Organizations)
					INGO (International Non Government Organization)
					School (Institution)
		adoptionStart	DATE	the adoption start date the cec partnered	
		adoptionEnd	DATE	the adoption end date the cec partnered	
		description	STRING	description about the partnerships and linkages	
		contactPerson	STRING	name of the contact person	
		contactEmail	STRING	email of the contact person	

	contactNumber	STRING	number of the contact person	
	status	STRING	status of the partnership linkages	Inactive
				Active
	createdAt	DATETIME	timestamp the partnership linkages was created in the system	
	updatedAt	DATETIME	timestamp the partnership linkages was updated in the system	

**Table 14: Partner Linkages Data Dictionary Table of the Proposed System**

Banner Programs					
Table Name	Index	Column	Data Type	Description	Remarks
banner_programs	PK	id	INT	id number of the banner program	
	FK	departmentID	INT	id number of the department	relates to the departments table
		name	STRING		None
					KASUSYO
					KISLAP
					UM-HEART
					UMASINSO
					TURISMO MISMO
					BATUTA DEPENSA
					ANAK NG UM
					MUNTING PAARALAN
					PROJECT WELLNESS
					BUMATI KA
					UMUNA
		abbreviation	STRING	abbreviation of the banner program	Ex: BUMATI KA

	description	STRING	the description of the banner program	
	yearStarted	INT	the year this banner program started	
status	STRING		status of the banner program	Inactive
				Active
	createdAt	DATETIME	timestamp the banner program was created in the system	
	updatedAt	DATETIME	timestamp the banner program was updated in the system	

**Table 15:** Banner Program Data Dictionary Table of the Proposed System

Project Proposals					
Table Name	Index	Column	Date Type	Description	Remarks
project_proposals	PK	id	INT	id number of the project proposal	
	FK	userID	INT	id number of the user	relates to the users table
	FK	bannerProgramID	INT	id number of the banner program	relates to the banner program table
	FK	departmentID	INT	id number of the department	relates to the departments table
	FK	programID	INT	id number of the academic program	relates to the academic programs table
	FK	communityID	INT	id number of the partner community	relates to the partner communities table; the recipient of the activity
		title	STRING	title of the project proposal	
		description	STRING	description of the project proposal	
		targetBeneficiaries	STRING	target beneficiaries of the project proposal	
		targetDate	DATETIME	target date of the project proposal	
		venue	STRING	venue of the project proposal	
		budget	NUM	budget of the project proposal	
		status	STRING	status of the project proposal	Inactive

				Active
	createdAt	DATETIME	timestamp the project proposal was created in the system	
	updatedAt	DATETIME	timestamp the project proposal was updated in the system	

**Table 16:** Project Proposals Data Dictionary Table of the Proposed System

Project Attachments					
Table Name	Index	Column	Date Type	Description	Remarks
project_attachments	PK	id	INT	id number of the project attachment	
	FK	proposalID	INT	id number of the project proposal	relates to the project proposals table
		fileName	STRING	name of the project attachment file	
		fileURL	STRING	url location of the project attachment file	
		fileSize	INT	size of the project attachment file	
		fileType	STRING	type of the project attachment file	
		uploadedAt	DATETIME	timestamp the project attachment was updated in the system	

**Table 17:** Project Attachments Data Dictionary Table of the Proposed System

Activities					
Table Name	Index	Column	Date Type	Description	Remarks
activities	PK	uc_act_id	INT	id number of the activity	
	FK	proposalID	INT	id number of the project proposal	
	FK	bannerProgramID	INT	id number of the banner program	relates to the banner program table
	FK	departmentID	INT	id number of the department	relates to the departments table
	FK	partnerCommunityID	INT	id number of the partner community	relates to the partner communities table; the recipient of the activity
		title	STRING	title of the activity	

	description	STRING	description of the activity	
	targetDate	DATETIME	target date of the activity	
status	status	STRING	status of the activity	Upcoming
				Ongoing
				Completed
				Cancelled
	createdAt	DATETIME	timestamp the activity was created in the system	
	updatedAt	DATETIME	timestamp the activity was updated in the system	

**Table 18:** Activities Data Dictionary Table of the Proposed System

Activity Documents					
Table Name	Index	Column	Date Type	Description	Remarks
activity_documents	PK	id	INT	id number of the activity document	
	FK	activityID	INT	id number of the project proposal	relates to the project proposals table
		fileName	STRING	name of the activity document file	
		fileURL	STRING	url location of the activity document file	
		fileSize	INT	size of the activity document file	
		fileType	STRING	type of the activity document file	
		category	STRING	category of the activity document file	
		description	STRING	description of the activity document file	
		uploadedAt	DATETIME	timestamp the activity document was updated in the system	

**Table 19:** Activity Documents Data Dictionary Table of the Proposed System

Project Approvals					
Table Name	Index	Column	Date Type	Description	Remarks
project_approvals	PK	id	INT	id number of the project approvals	
	FK	proposalID	INT	id number of the project proposal	relates to the project proposals table
	FK	approverUserID	INT	id number of the approver	relates to the users table
		approverPosition	INT	position of the approver	
		comment	STRING	comment for the project approvals	
		approvedAt	DATETIME	timestamp the project was approved in the system	
		status	STRING	status of the activity	Upcoming
		createdAt	DATETIME		Ongoing
		updatedAt	DATETIME		Completed
					Cancelled

**Table 20:** Project Approvals Data Dictionary Table of the Proposed System

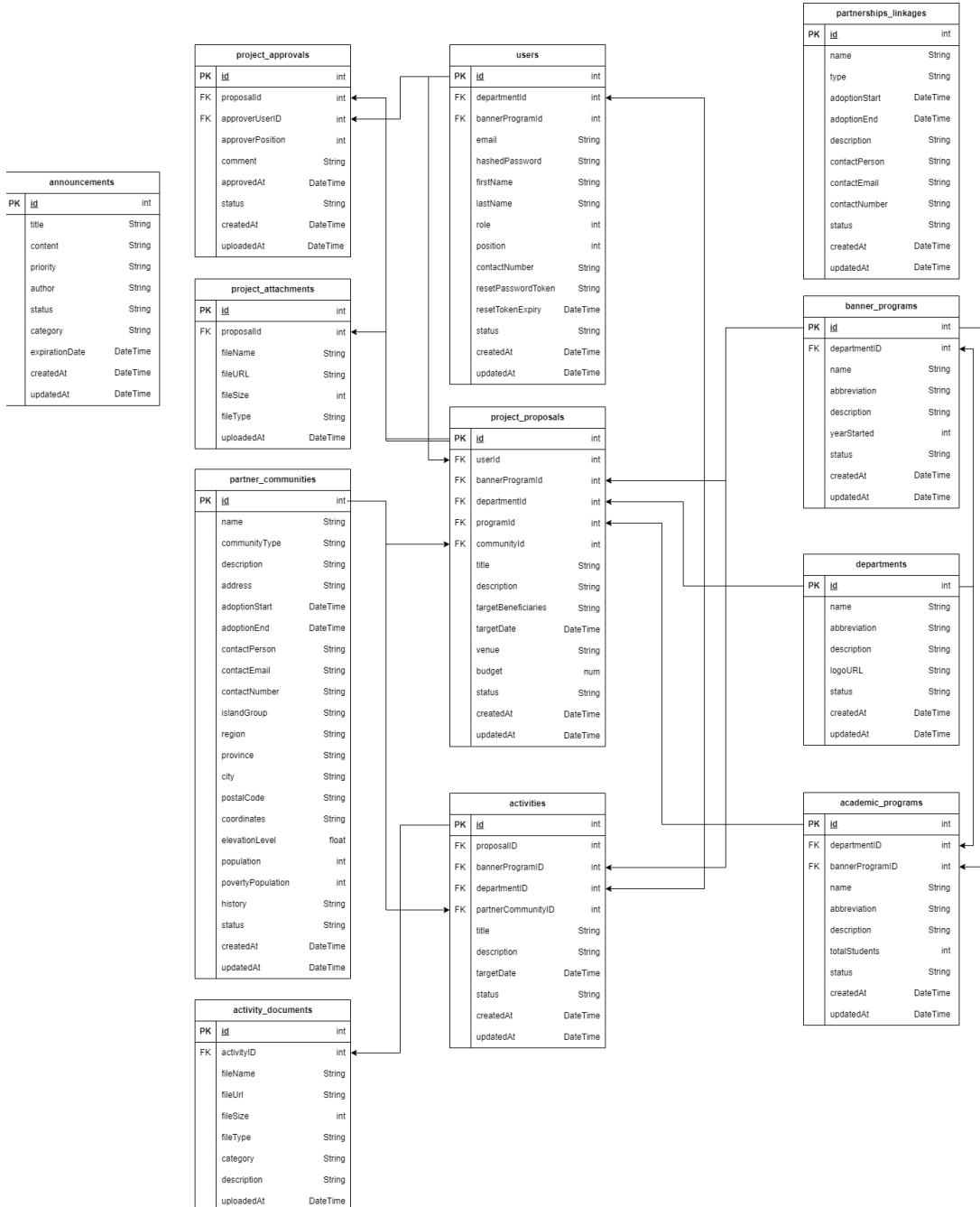
Announcements					
Table Name	Index	Column	Date Type	Description	Remarks
announcements	PK	id	INT	id number of the announcement	
		title	STRING	title of the announcement	
		content	STRING	content of the announcement	
		priority	INT	priority of the announcement	
		author	STRING	author of the announcement	
		status	STRING	status of the announcement	
		category	STRING	category of the announcement	
		expirationDate	DATETIME	timestamp the announcement will expire	

	createdAt	DATETIME	timestamp the announcement was created in the system	
	updatedAt	DATETIME	timestamp the announcement was updated in the system	

**Table 21: Announcements Data Dictionary Table of the Proposed System**

## 5.3 Data Specifications

### 5.3.1 Entity Relationship Diagram



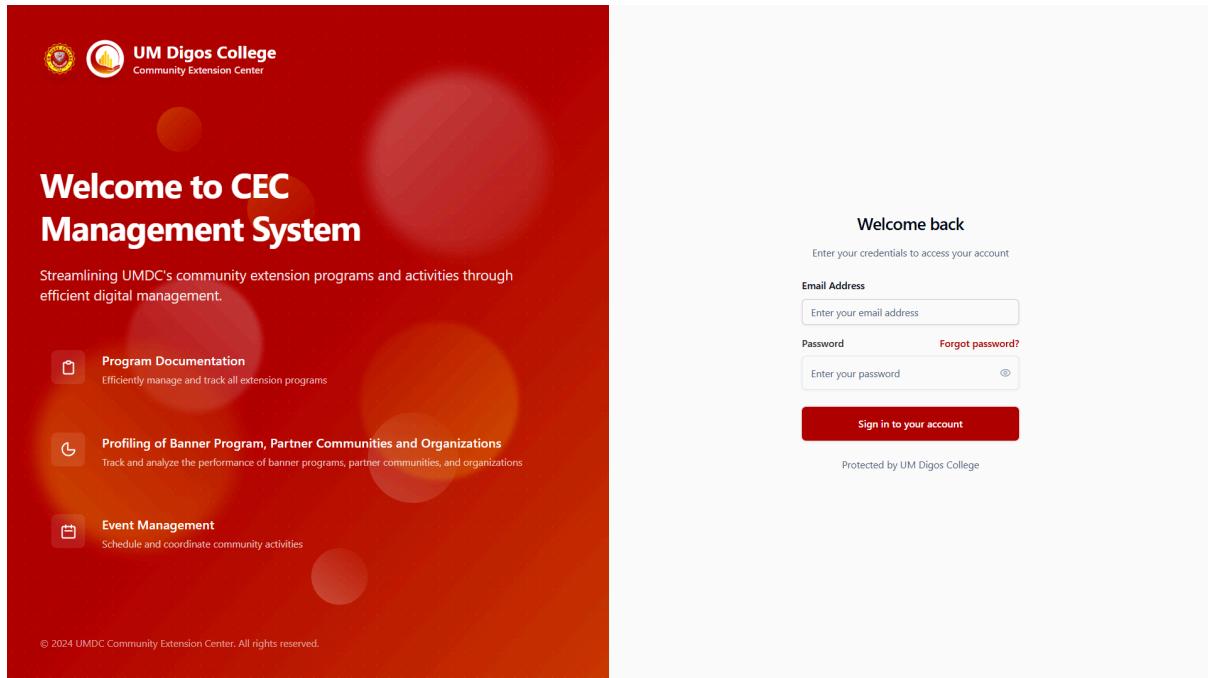
**Figure 12: Entity Relationship Diagram of the Proposed System**

### 5.3.2 Tables / Files Layout

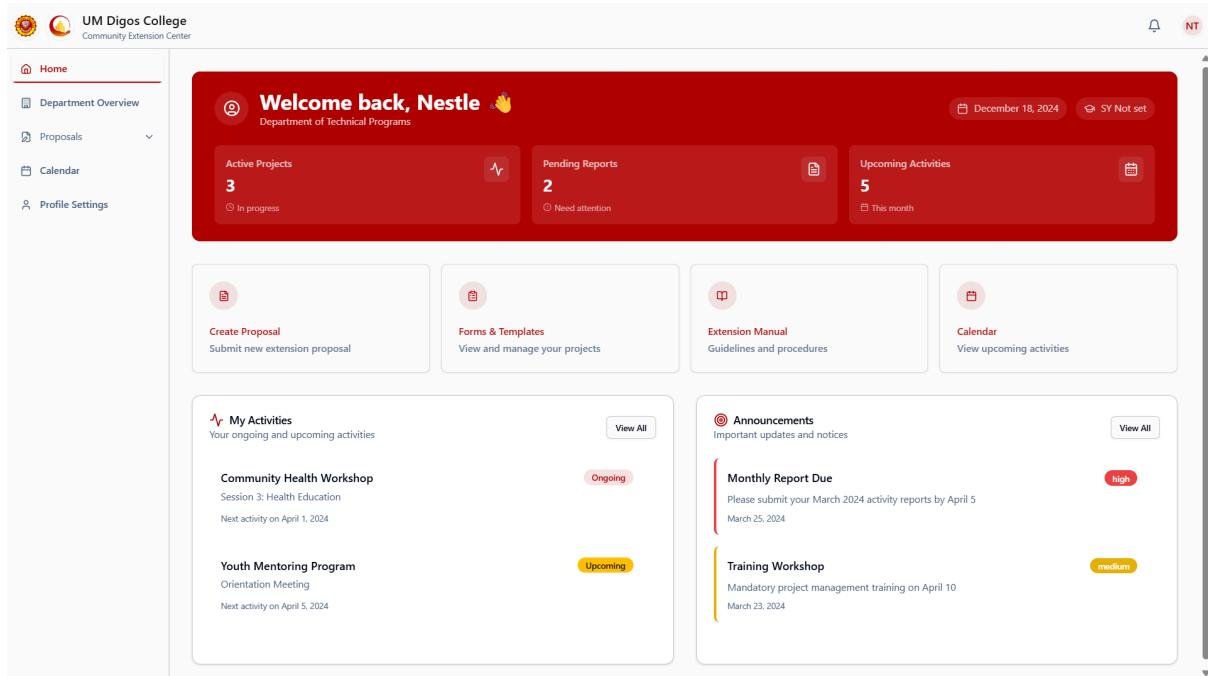
Name	Description	Rows (Estimated)	Size (Estimated)	Realtime Enabled	8 columns	⋮
_prisma_migrations	No description	5	32 kB	×	8 columns	⋮
academic_programs	No description	17	96 kB	×	10 columns	⋮
activities	No description	1	96 kB	×	11 columns	⋮
activity_documents	No description	0	32 kB	×	9 columns	⋮
announcements	No description	0	40 kB	×	10 columns	⋮
banner_programs	No description	11	96 kB	×	9 columns	⋮
departments	No description	7	64 kB	×	8 columns	⋮
partner_communities	No description	3	64 kB	×	23 columns	⋮
project_approvals	No description	15	80 kB	×	9 columns	⋮
project_attachments	No description	6	48 kB	×	7 columns	⋮
project_proposals	No description	6	144 kB	×	17 columns	⋮
users	No description	6	80 kB	×	14 columns	⋮

**Figure 13:** Table Layout of the Proposed System

### 5.4 Screen Layout/ Form Specifications



**Figure 14:** Sign In Page of the UMDC-CECMS



**Figure 15:** Home Page of the UMDC-CECMS

**Figure 16:** Adding a new Academic Department

**Create New Proposal**

Fill out the form below to submit a new extension program proposal.

**Proposal Details**  
All fields marked with an asterisk (\*) are required.

**Title \***

**Description \***

**Department \***  
 Department of Technical Programs

**Banner Program \***  
 BUMATI KA

**Partner Community \***  
 Select a partner community

**Target Beneficiaries \***  
Specify who will benefit from this activity.  
 e.g., Students, Community Members

**Target Area**  
Specify the target area for the activity.

**Target Date of Activity \***  
Select the target date for the activity.  
 Pick a date

**Activity Venue \***  
 Specify the specific location of the activity

**Budget Proposal \***

**Figure 17:** Creating a New Proposal Page of the UMDC-CECMS

**Events Calendar**

Manage and track all community extension activities

5 Mon	6 Tue	7 Wed	8 Thu	9 Fri	10 Sat	4 Sun
25	26	27	28	29	30	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	1	2	3	4	5

Legend: ● Regular Events   ● Important Events   ○ Available Slots

**Figure 18:** Events Calendar Page of the UMDC-CECMS

**Add New User**

Create a new user account. They will receive an email to set their password.

First Name	Last Name
Email	
Default Password	.....
Contact Number	
Department	None
Role	Staff
Position	None
Banner Program	None

Only available for Focal Persons

**Create User**

**Figure 19: Adding a New User Page**

## 5.5 Report / Form Specifications

**Banner Programs per Department Report**

School Year 2023-2024 | Generated on 12/19/2024, 7:19:19 AM

**Print Report** **Download PDF**

**Overview**

Dept.	Number of Academic Programs			Number of Banner Programs		Remarks
	Total	Active	Inactive	Target	Actual	
DAE	2	2	0	1	0	-
DASE	5	4	1	2	0	-
DBA	2	2	0	2	0	-
DCJE	1	1	0	1	0	-
DTE	5	4	1	3	0	-
DTP	2	2	0	2	0	-
SHS	0	0	0	0	0	-
<b>TOTAL</b>	<b>17</b>	<b>15</b>	<b>2</b>	<b>11</b>	<b>0</b>	<b>-</b>

**Department of Accounting Education  
DAE**

**Figure 20: Banner Programs per Department Report of the UMDC-CECMS**

## **5.6 Program / Module Specifications**

The UMDC-CECMS is composed of different modules designed to simplify and digitize the operations of the CEC in UM Digos College. Each module fulfills specific functions, when combined, support the CEC's activities and data management needs. The modules are:

### **Profilens Module**

This module serves as the repository for managing the records, detailed information and demographic data. The profilings are:

1. Academic Departments
2. Banner Programs
3. Partner Communities
4. Partnerships & Linkages

### **Project Proposal Module**

This module allows for the digital submission and management of project proposals from the different Banner Programs. This enables the Focal Persons to submit proposals along with the necessary document attached.

### **Events Calendar Module**

This module allows for a centralized visual interface for monitoring all approved outreach program activities. It shows the ongoing, upcoming and completed activities in a calendar format.

### **User Management Module**

This module controls the system access and security through role based permissions, managing user accounts for the Super Admin, Admin and Staff. Along with maintaining user profiles.

## CHAPTER 6

### SYSTEM CODING (PROTOTYPE)

#### 6.1 Programming Language

##### 6.1.1 Frontend

- **React** - React was selected for its component based architecture, powerful ecosystem, and will ensure that the UMDC-CECMS have an excellent performance in its dynamic and responsive user interfaces.
- **TypeScript** - TypeScript for the frontend was chosen to add static typing to Javascript, catching errors early in the development and to improve the maintainability of the code, which is incredibly important for UMDC-CECMS.
- **Tailwind CSS** - Tailwind CSS was implemented for its utility first approach, allowing for fast UI development with highly customizable styles while maintaining the design patterns consistent across the web application.

##### 6.1.2 Backend

- **Node.js** - Node.js was chosen for the efficiency of asynchronous operations and extensive package ecosystem, making it ideal for making the UMDC-CECMS a scalable web application.
- **Express.js** - Express.js was selected for its minimal and flexible framework structure that provides robust features for web and mobile applications equipped with simple routing and easy to manage middleware.
- **TypeScript** - TypeScript for the backend was chosen for its type safety and improved developer experience, keeping the front end and back end in sync.
- **PostgreSQL** - PostgreSQL was used as the primary database for its excellent support for complex queries and ability to handle structured data efficiently, which is perfect for structured data of the CEC in UM Digos College.

## 6.2 Special Purpose Language Tools

### 6.2.1 Development Tools

- **Vite** - Vite was chosen as a tool for offering an extremely fast development server startup and hot module replacement, a feature that automatically updates the page when code changes, which significantly improves development speed and efficiency.
- **Postman** - Postman was selected for its ability to test and document APIs during development, providing a user friendly interface for sending requests, inspecting responses, and ensuring API endpoints correctly work.

### 6.2.2 Frameworks and Libraries

- **Shadcn UI** - Shadcn UI was selected for its customizable React components that provide a consistent and professional look for the UMDC-CECMS while maintaining accessibility standards.
- **Zustand (State Management)** - Zustand was chosen for its handy state management tool for managing state in React apps, offering a minimal API that's easier to learn and use compared to alternatives.
- **TanStack React Query (Server State Management)** - TanStack React Query was used for its efficient server state management, cache handling, synchronization, and updates of server data in a declarative manner.
- **Axios (HTTP Client)** - Axios was chosen for its concise and intuitive way to send asynchronous HTTP requests to web servers, enabling the team to avoid having to write hundreds of lines of code to accomplish the same thing.
- **React Router DOM** - React Router DOM was used for its client-side routing, enabling the navigation between different components without the need for page refreshes.

### 6.2.3 Database Management

- **Prisma ORM** - Prisma ORM was selected for simplifying database interactions with code, powerful migrations, and intuitive data modeling that works seamlessly with TypeScript.
- **Supabase** - Supabase was chosen for its powerful PostgreSQL database hosting, easy to use interface and its powerful database management features, which provides a reliable infrastructure without managing servers.

#### **6.2.4 Hosting and Deployment**

- **Vercel** - Vercel was chosen for its smooth and simple deployment process, automatic SSL, and excellent performance optimizations, which is particularly suited for our React based web application UMDC-CECMS.
- **Supabase** - Supabase was selected for hosting the PostgreSQL database and file storage, offering real-time capabilities and a reliable infrastructure.

## CHAPTER 7

### SYSTEM TESTING PLAN

#### 7.1 Testing Stages

##### 7.1.1 Preliminary Testing

Preliminary Testing will involve the Development Team to guarantee that the system's basic functionality meets the design requirements before proceeding to the Alpha Testing. This stage checks if the core features are functional, identifying bugs, and making initial corrections. Specific tasks include:

- **Profiling Module:** Verifying accurate data entry, editing, and retrieval of Departments, Academic Programs, Banner Programs and Partner Communities.
- **Proposal Submission Module:** Verifying the submission, viewing, and monitoring of project proposals.
- **Events Calendar Integration:** Testing the automatic addition of approved activities to the Events Calendar.
- **System Navigation and UI Responsiveness:** Ensuring all interfaces are user-friendly and responsive.

##### 7.1.2 Alpha Testing

Alpha testing will involve the IT consultant to evaluate the system in a controlled environment. This stage will be primarily focused on identifying potential issues from an expert perspective and testing the system's effectiveness on the agreed objectives. Specific tasks include:

- **Process Testing:** Verifying the full workflow of project proposal submissions and approvals.
- **Error Handling and Validation:** Ensuring the system properly handles invalid inputs and errors.
- **Performance Assessment:** Observing the speed and reliability of the system under everyday use cases.

### **7.1.3 Beta Testing**

Beta testing will involve the CEC at UM Digos College. The purpose is to evaluate the system under everyday scenarios, gathering feedback for final adjustments. Specific tasks include:

- **User Experience Evaluation:** Gathering feedback on ease of use and interface design.
- **Proposal Submission Workflow:** Observing the users' ability to submit and monitor proposals effectively.
- **Calendar Utilization:** Ensuring users can view and manage approved activities in the events calendar.

## **7.2 Testing Schedules**

The Preliminary Testing will take place before the Pre-Defense, where the development team will properly test each feature of the system. This allows for finding and fixing bugs or issues ensuring every part of the system is stable and functional before testing externally. The Alpha Testing will take place after the Pre-Defense. This testing will involve our IT Consultant, by providing an expert perspective of the system, helping to uncover technical and usability issues.. And lastly the Beta Testing will take place after the Alpha Testing. This testing will involve the CEC Staff in UM Digos College, gathering user feedback to review the system's workflow and ensure it meets their needs.

## CHAPTER 8

### SYSTEM IMPLEMENTATION PLAN

#### 8.1 Resource Requirements

##### 8.1.1 Hardware Requirements

The CEC in UM Digos College already has two (2) fully working Desktop Computers, therefore the system will be deployed on at least one (1) of the Desktop Computers.

Hardware Specifications	Quantity	Price
Desktop Computer	1	Available
<b>Total Cost</b>		<b>None</b>

*Table 22: Hardware requirements for the UMDC-CECMS*

##### 8.1.2 Software Requirements

Software Specifications	Price
Operating System	Available
Database Management	
Browser	
<b>Total Cost</b>	<b>None</b>

*Table 23: Software requirements for the UMDC-CECMS*

##### 8.1.3 Human Resource Requirements

Name of User	Description
Super Admin	The Super Admin role is assigned to the Dev Team. They have entire control over the UMDC-CECMS system, including managing users, overseeing configurations and resolving technical issues.
Admin	The Admin role is assigned to the CEC Head and UMDC CEC Coordinator. Admins manage system operations and manage system wide settings.

<p><b>Staff</b></p>	<p>The Staff role is assigned to the UMDC CEC Office Assistant, Focal Persons, VP Director and Chief Operating Officer.</p> <p>The UMDC CEC Office Assistant manages the profiles of each Department, Academic Programs, Banner Programs, Partner Communities and Partnerships &amp; Linkages. Along with managing the outreach program activities.</p> <p>The Focal Person has the capability to Submit, View, Update and Delete outreach program activity proposals.</p> <p>The UMDC CEC Coordinator, VP Branch Operations and the Chief Operating Officer can approve or disapprove all the outreach program activity proposals.</p>
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**Table 24: Human Resource Requirements for the UMDC-CECMS**

## 8.2 Implementation Plan

### 8.2.1 Site Preparation

Before deploying the UMDC-CECMS, the hardware and software requirements necessary must be set up. This would include configuring Supabase for database hosting, and ensuring that the Desktop Computer used for the Community Extension Center (CEC) office in UM Digos College is set in place. A fast and reliable internet connection along with backup systems in place are also important to support system accessibility and data integrity.

### 8.2.2 Personnel Training

All the personnel which includes the UMDC CEC staff (Coordinator, Office Assistant), Focal Persons of each Banner Program, Program Heads, VP Director and the Dean of College will go through intensive training. This training will cover system navigation, module functionalities such as the Profilings, activity proposal submissions and approvals of those activities, and lastly the use of the events calendar. Training sessions will be conducted through workshops, instructional guides or user manuals, and system simulations to ensure users are confident in utilizing the platform.

### **8.2.3 System Conversion**

The transition to the new system will involve a simultaneous operation strategy to minimize disruptions or risks. Both the existing manual processes of the CEC in UM Digos College and the UMDC-CECMS will run at the same time during an initial trial period, helping users be familiar with the system while ensuring no loss of critical operations. Once the system is stable and shows consistent performance along with users being confident using the system, the manual process will then be phased out.

### **8.2.4 Data Conversion**

Existing data from the CEC in UM Digos College, including the profilings and records of Departments, Academic Programs, partner communities, and prior program proposals, will be digitized and imported into the system. Data validation will ensure accuracy, consistency, and completeness during the migration process. The use of tools like Prisma ORM will facilitate a seamless and secure data transfer to the Supabase database.

### **8.2.5 Implementation Schedule**

The implementation of the UMDC-CECMS will occur after the Final Defense, in which feedback from the CEC staff in UM Digos College and the panelists will be thoroughly reviewed to ensure the system's readiness and functionality. Before the deployment, a formal approval from the CEC in UM Digos College will be needed.

## **CHAPTER 9**

### **SYSTEM MAINTENANCE PLAN**

The maintenance plan for the UMDC-CECMS ensures that the system remains functional, secure, and aligned with the needs of the CEC staff. It involves two (2) main elements:

- **System Updates:** Regular updates will include bug fixes and enhancements to the system based on the needs of the CEC staff.
- **System Monitoring:** Regular monitoring will be performed to identify some potential issues and maintain system uptime.

The goal of these steps is to ensure that the system remains reliable and easy to use, ensuring long term success in supporting the operations of the CEC in UM Digos College.

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