ADNU Employee Research System: An Online Research Showcase for ADNU Employees

Frederick Jehan Daluro
Bachelor of Science in Information Technology

Ryan Christian Y.Imperial
Bachelor of Science in Information Technology

Kyle Jhon Nolan
Bachelor of Science in Information Technology

Senior project submitted to the faculty of the
Department of Computer Science
College of Computer Studies, Ateneo de Naga University
in partial fulfillment of the requirements for their respective
Bachelor of Science degrees

Project Advisor: Jelly P. Aureus, MS
Marianne P. Ang, MS
Frederick D. Olaño, MS
John Sixto Santo

June 13, 2019
Naga City, Philippines

Keywords: online repository, archive, Research Paper

The Senior Project entitled

ADNU Employee Research System: An Online Research Showcase for ADNU Employees

developed by

Frederick Jehan Daluro
Bachelor of Science in Information Technology

Ryan Christian Y.Imperial
Bachelor of Science in Information Technology

Kyle Jhon Nolan
Bachelor of Science in Information Technology

and submitted in partial fulfillment of the requirements of their respective Bachelor of Science degrees has been rigorously examined and recommended for approval and acceptance.

Marianne P. Ang, MS
Panel Member
Date signed: _____

Frederick D. Olaño, MS
Panel Member
Date signed: _____

John Sixto Santo
Panel Member
Date signed: _____

Jelly P. Aureus, MS
Project Advisor
Date signed: _____

The Senior Project entitled

ADNU Employee Research System: An Online Research Showcase for ADNU Employees

developed by

Frederick Jehan Daluro
Bachelor of Science in Information Technology

Ryan Christian Y.Imperial
Bachelor of Science in Information Technology

Kyle Jhon Nolan
Bachelor of Science in Information Technology

and submitted in partial fulfillment of the requirements of their respective Bachelor of Science degrees is hereby approved and accepted by the Department of Computer Science, College of Computer Studies, Ateneo de Naga University.

Marianne P. Ang, MS
Chair, Department of Computer Science
Date signed: _____

Marlinda S. Regondola, PhD
Dean, College of Computer Studies
Date signed: _____

Declaration of Original Work

We declare that the Senior Project entitled

ADNU Employee Research System: An Online Research Showcase for ADNU Employees

which we submitted to the faculty of the

Department of Computer Science, Ateneo de Naga University

is our own work. To the best of our knowledge, it does not contain materials published or written by another person, except where due citation and acknowledgement is made in our senior project documentation. The contributions of other people whom we worked with to complete this senior project are explicitly cited and acknowledged in our senior project documentation.

We also declare that the intellectual content of this senior project is the product of our own work. We conceptualized, designed, encoded, and debugged the source code of the core programs in our senior project. The source code of third party APIs and library functions used in my program are explicitly cited and acknowledged in our senior project documentation. Also duly acknowledged are the assistance of others in minor details of editing and reproduction of the documentation.

In our honor, we declare that we did not pass off as our own the work done by another person. We are the only persons who encoded the source code of our software. We understand that we may get a failing mark if the source code of our program is in fact the work of another person.

Frederick Jehan Daluro
4 - Bachelor of Science in Information Technology

Ryan Christian Y.Imperial
4 - Bachelor of Science in Information Technology

Kyle Jhon Nolan
4 - Bachelor of Science in Information Technology

This declaration is witnessed by:

Jelly P. Aureus, MS
Project Advisor

ADNU Employee Research System: An Online Research Showcase for ADNU Employees

by

Frederick Jehan Daluro, Ryan Christian Y.Imperial, and Kyle Jhon Nolan

Project Advisor: Jelly P. Aureus, MS

Department of Computer Science

EXECUTIVE SUMMARY

The AdNU Employee Research System is a web based online showcase of research paper for the employees of Ateneo de Naga University (AdNU).The web application is for employees of AdNU to show and store their research papers digitally. Using the languages PHP and Bootstrap the system features a search and sorting function that lets users find various research with ease. For users to upload their own research they would be an employee of AdNU and login with their gbox account. The uploaded content would be saved in MySQL database.

We dedicate this project to our family for their support, love, and encouragement. Also, we would like to thank our adviser, Ms. Marianne P. Ang for her guidance and support throughout the development of our senior project.

We express our heartfelt gratitude to our God above all.

ACKNOWLEDGEMENTS

We would like to thank God for giving us determination, strength, knowledge, and guidance to finish this project.

Also, thanks to our family for the undying support throughout our college years; We would like to express our gratitude to our friends for motivating us during the development of our project;

For the trust, accommodation, and for the given the opportunity to work with them, gratefulness is extended to Sir Marlon M. Decillo, Compensation and Benefits Officer, Ma'am Leanne Gemelly B. Briones, Systems Administration Specialist, Jon-Jon S. Elicay, Checker;

Special thanks to Ma'am Myllan B. Toledana, the HRMO Director, for approving our request regarding the data we need for our senior project.

To our adviser, Ms. Marianne P. Ang, to our panelist, Mr. Frederick D. Olan˜o, Ms. Jelly P. Aureus, and Mr. Rey Herman R. Vidallo, thank you for giving us guidance, pieces of advice, constructive comments, and suggestions for our project. Without them, this project would not have been possible. Also, to our proofreader Ms. Vanessa M. Abay for looking into our study to allow our research information flow smoothly.

We thank everyone who helped us finish this research.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

Chapter 1

Introduction

1.1 Project Context

The Ateneo de Naga University has employees that are partaking in research but without an online repository website to store and showcase their research.The rise in digital services where the information can be stored through digital devices with the use of internet is efficient.The the traditional way of searching information is too time consuming.The need of digital libraries are needed so that there is an easy access to research.[1] .

1.2 Purpose and Description

The purpose of the proposed project is to create a web application that showcases the research paper made by the researchers of all the different departments and colleges of Ateneo de Naga University. The employees of Adnu will be able to upload their research papers through the system to make a digital copy of their work for other users to see.

The AdNU Employee Research System will collect and store research paper of employees of the Ateneo de Naga University.The search function is not only limited to the title of projects but can also be used to search other projects by an author while also be able to sort by category such as research type, date published, title, etc.

1.3 Objectives

1.3.1 General Objectives

The goal of the project is to develop a web-based repository of research papers for the employees of all department and colleges of the Ateneo de Naga University and will be managed by the URC as the admin.

1.3.2 Specific Objectives

- Admin will be able to create accounts for verified employees.
- Employees of Ateneo de Naga University to be able to upload their research paper using the system
- All users to be able to view a dashboard that contains all research paper made by the employees of AdNU
- Create Notification System
- To export backup data and report summaries.
- To create an filter search function.
- Create database to store the data
- To conduct a user testing and provide an evaluation
- To fully develop the proposed system and deploy to URC

1.4 Scope and Limitations

The System will be develop as a web-based online repository of research papers of the employees of all departments and colleges in Ateneo de Naga University.

- Guest users to be restricted to viewing only abstract paper
- Faculty can input details regarding their completed research, presented research and published research.

- The inputted details can be summarized into citations(based on APA 6th edition format)
- The URC can sort the inputted information based on:
    1. year of completion, year of presentation, year of publication
    2. type of publication (e.g. book, journal, etc.)
    3. faculty name
    4. type of research work (e.g. completed, presented, published)
    5. department / unit
- Employees and Admin to manage their research papers (edit,delete)
- The URC can unsubmit and email faculty if details provided are not appropriate

This System is limited that only employees of Ateneo de Naga University can upload research projects and users that are not employees can only view the projects. The research projects will be following the APA format as the standard and PDF as the file standard.

Chapter 2

Review of Related Systems and Related Literature

This chapter consists of studies and systems that are related and will be helpful to how the project will be developed. The related systems and studies would help the users get a grasp on the perspective of the authors on how these studies and systems were developed and an opportunity for the reader to appreciate the related readings and systems that were gathered.

2.1 The Impact of Digital Technologies on Academic Libraries - a study in Greece

The introduction of technology in libraries has exponential changed due to their duties and roles.[1] The traditional system before was a person would go to the library and read books but now because of technology libraries are now able to provide digital copies of academic materials found in the library.[1] Academic libraries are now adapting to the digital era and are pursuing to digitize themselves due to the automation system that digital libraries have compared to the old.[1]The library automation systems has helped libraries to provide easy access to their storage of academic materials. The role of a library is the dissemination of knowledge and having a digital library improves the library's role as an access of academic information.

2.2 Digitization of Library Resources: Challenges and Implications

The manual way of searching for information and materials inside the library is difficult since it is time consuming and there are instances that the sources gathered are identical. [2] has mentioned that the traditional way of gathering articles and research would be inefficient and time consuming. Though the use of digital library is widely used nowadays, it will be very helpful to solving such as issues.Then again digitization of library resources is easier said than done. However there are a lot of challenges. Creating a digital library is a very expensive venture which requires adequate planning and monitoring. The major problem is lack of technical-know-how; hence most digitization projects often run into problems.In addition, the interface should be user friendly, so that users can search for information with ease[2].

2.3 The Case for Institutional Repositories

In the paper, its been discussed by Crow, R about the importance of having a repositories to preserve an intellectual output made by the Colleges and Universities communities and how it will impact the communication process of the Institute. The Institutional Repositories displays as an academic quality of the institution hence, its provides in increase of quality of work, visibility and public value. It will improve the interest of the College and University communities as availability of digital networking while keeping the existing traditional journal publishing system.[3]

2.4 A Secure Repository Design for Digital Libraries

The purpose of digital repositories is to store collections of data and are responsible for securing their data.[6] As more research are being published digitally repositories that establish intellectual property rights using a website's terms and conditions are needed to provide security. A digital repository should have a protocol or policy that shields research papers from being plagiarized.[6]

2.5 Institutional Repositories and Digital Preservation: Assessing Current Practices at Research Libraries

Digital preservation is problem concerning libraries as digital information is being easily produced.[7] Developing a repository system would need policies to keep them in check. The results of [7]'s survey showed that some libraries are using some features of their repository to support digital preservation while others use external systems. By implementing policies the library could improve their preservation and overall improve the repository system.

2.6 Digital Repositories - Making Africa's Intelligentsia Visible

In this era, digital collections of research material, published or unpublished has spread widely. Few academics are going to the library to read articles in hard copy more and more individuals are now reading research materials online while some libraries are suffering from from storage space are now looking for alternatives to store research materials.[12] Using digital repositories fellow scholars can find topics of research similar to them and their peers. It also helps them to get in touch with each other by displaying the authors contact information on their research.[12] With a digital repository scholar's morale will increase due to them having a global audience and work having public recognition.[12]

2.7 Digital Repository of Scientific Institutes - RCIN

Storing researches in libraries were inefficient before since librarians were using a hands-on system where books and research were being stored in bookshelves and sometimes misplaced. This led to students and researchers being not able to find the material they were searching for.Libraries are having a difficult time showcasing their research materials. In many cases libraries would implement a digital research repository but in some cases they would abandon plans for digitization due to fear of problems they might encounter.[5]

Chapter 3

Technical Background

These are the preferred technologies, languages and tools to be used in developing the application

3.1 Architectural Framework

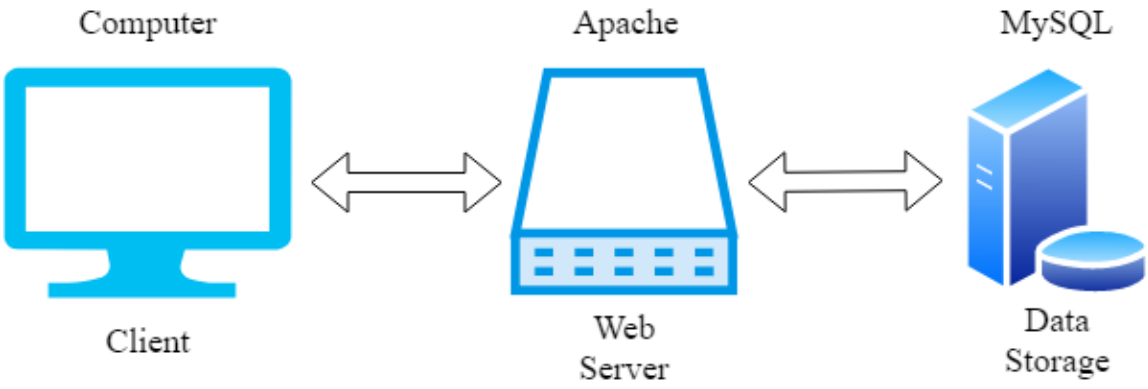


Figure 3.1: Three Tier System Architecture

The system will be using the three-tier that contains the presentation layer that will be handling the client side for the users through a web browser. The application logic that handles the web server which will be using the Apache from XAMPP. The Data tier that handles the database using MySQL which where the data will be stored.

3.2 Programming Language/Scripting Language

PHP

PHP: Hypertext Preprocessor is an open-source scripting language that is usually utilized in web development. This will be used for the backend of the web application.

Javascript

JavaScript —-a scripting language enabled the developers to create a dynamically changing content. This was used to create complex web pages along with HTML and CSS.

HTML

Hypertext Markup Language 5, a standardized system for tagging text files to achieve font, coor, graphic, and hyperlink effects served as the tool in creating views of the system.

CSS

Cascading Style Sheets controlled the layout of multiple web pages all at once. By using an external style sheets, the appearance of the website could be modified by changing just one file.

MYSQL

MySQL is a database management system that allows users to create and manage databases. It is used to organize and store data of user inputs. MySQL is easy to setup and in not difficult to master compared to other databases. It is also free and compatible with different operating system platforms.

Codeigniter

CodeIgniter is a PHP framework for developing applications. This framework has built-in features that act independently and is well documented for learning.

Bootstrap

Bootstrap is a HTML,CSS, and JavaScript framework for developing web pages. Bootstrap is the most popular front-end framework and is supported by other web languages such as HTML. It is

used to build user interface components and is most suited at creating web pages on mobile phones.

3.3 Sofware Engineering tools

Overleaf

An online, LaTeX based plain text and rich text writing system.The purpose of this online writing environment is to help the document to be well formatted.

Visual Studio Code

Visual Studio Code is a cross platform code editor. It is used to debug and edit codes of different languages. This code editor is used to edit and organize the user's files which makes it one of the best code editor as it supports various code languages with a feature that organizes files with ease.

CodeIgniter

This framework helped us develop our web application. With this, we used the MVC model. We used this framework because we, the proponents, are familiar with the use of this one.

XAMPP

XAMPP web server that will handle the communication between the database and the user's request. An important component when creating systems, it handles connection.

3.4 Modelling tools

3.4.1 Draw.io

The researchers designed our models using draw.io because elements within the models are already available on their website. All created diagrams can be saved in google drive and this makes it easier to compile all the diagrams.

Chapter 4

Methodology

4.1 Software Development Model

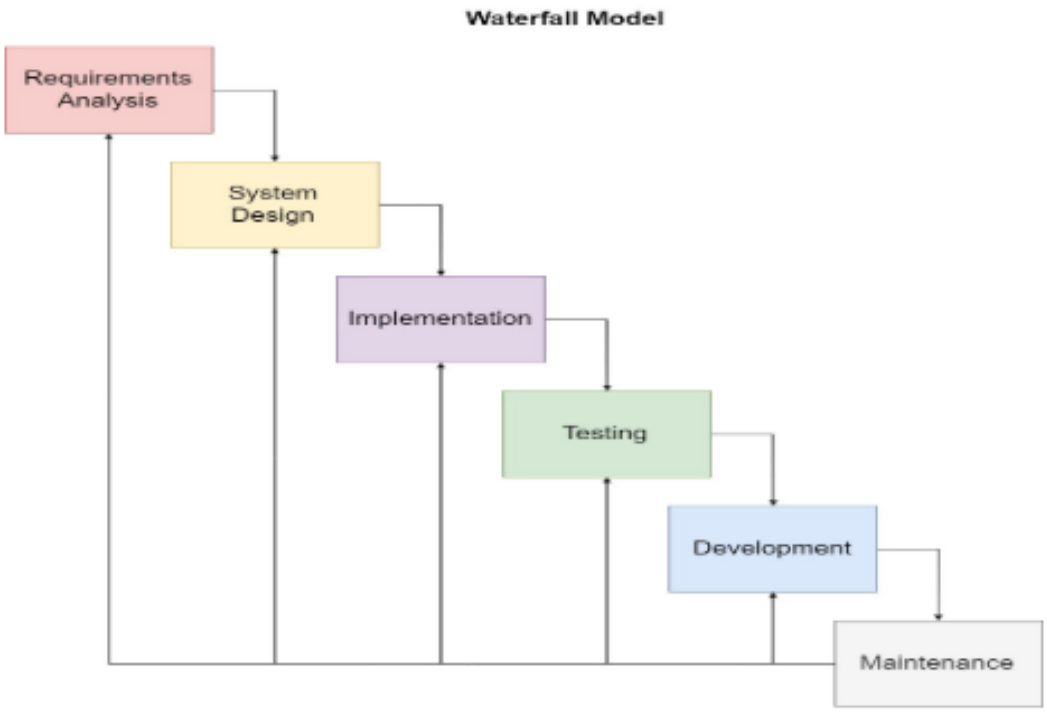


Figure 4.1: Waterfall Model for AERS

The waterfall process model will be used as a development life cycle of the project.
In the first phase, Requirement Analysis, The requirements of the project were gathered and analyzed as the foundation of the proposal. An interview will be conducted to the URC and All Departments of the Ateneo de Naga University in order to gain information about the current existing processes of the Information System of the Research Papers and analyze the scope of the project that are going to be developed.
In the Second phase, Design, The initial start of the software architecture in which to create the essential diagrams and models that will be used in the project. The design functions and features are described with the inital user interface.

In the Third phase, Development. In the Chapter 3 in which the technical background listed are going to be used in this phase. The coding for each module that are described in the objectives will begin.
In the Fourth phase, Testing. After the development of the System, A testing will be conducted to the users to be able to test the application to look for faults and receive feedback. The debugging will commence based on the results from testing.
Lastly, Deployment. The system are expected to be fully functional and met the requirements of the project then it will be deployed to the URC.

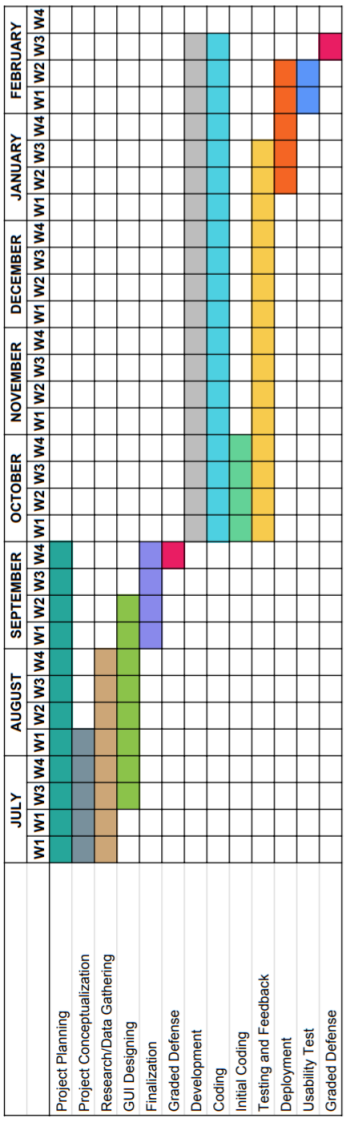


Figure 4.2: Gannt Chart

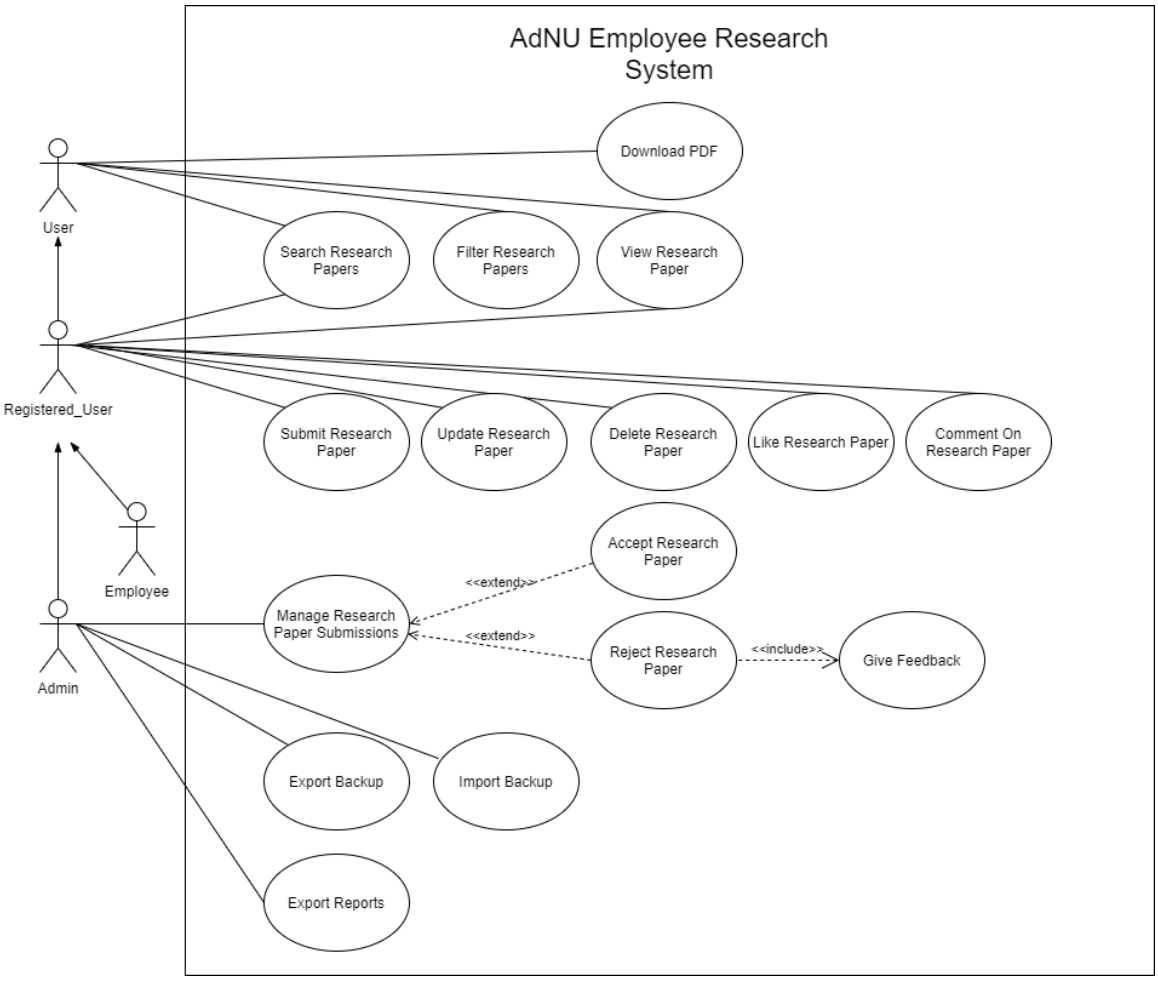


Figure 4.3: Use-Case Diagram of ADNU Employee Research System

In Figure 2.3, it shows tha ADNU Employee Research System Use-Case Diagram. The User can search for research papers or filter them. They can also view the research paper to see more details of said research and download it depending if pdf file is available. The Registered User has two types, the Employee and Admin. Both Employee and Admin can submit, update, and delete their own research. They can also like and comment other research papers including their own. The Admin has features that are not accessible for Employee. Admin can manage research submissions and accept or reject research. If admin rejects the research submitted, admin would have to give a feedback. Admin can also export reports in pdf or excel format. Lastly Admin is able to export and import the research papers in json format.

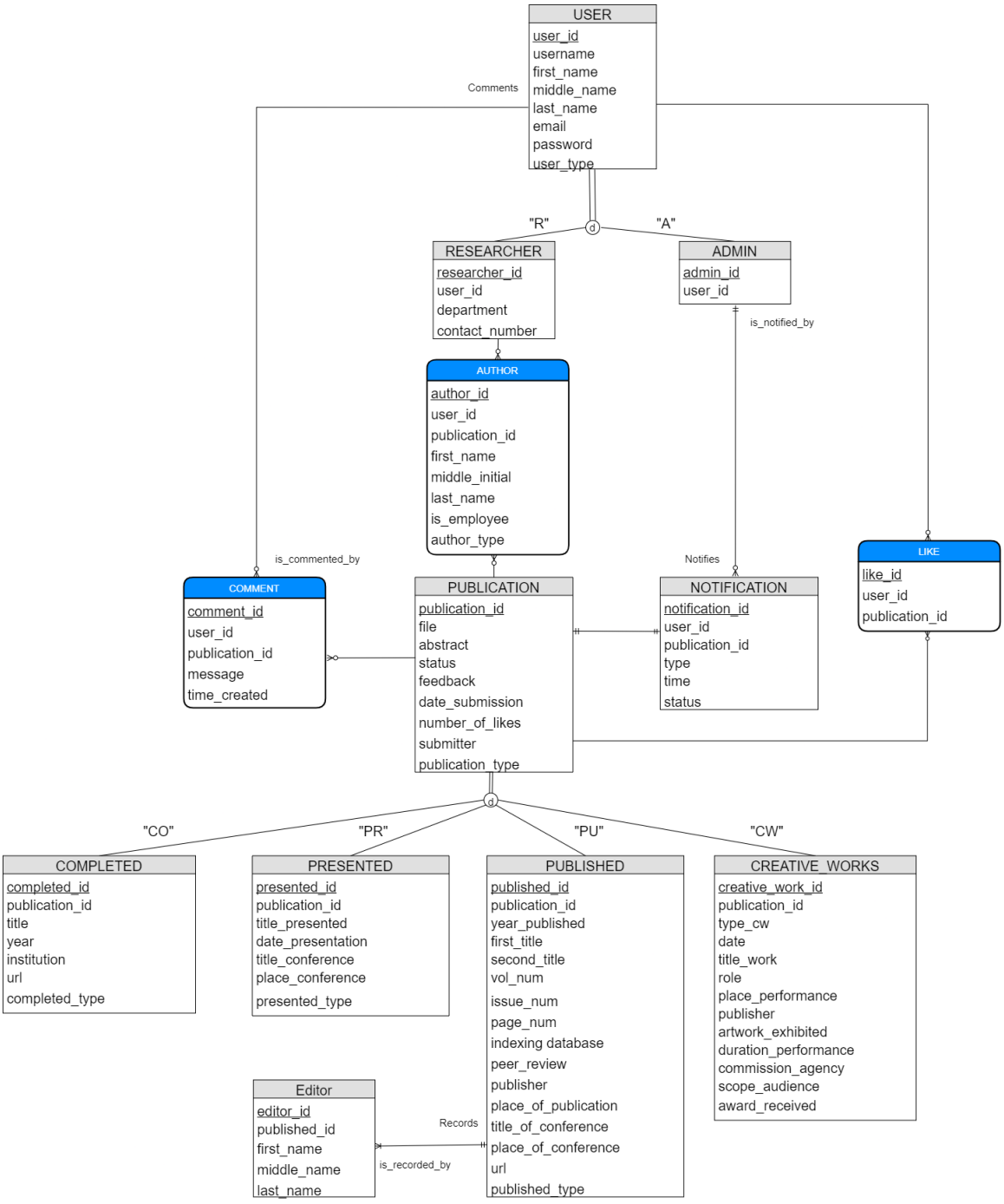


Figure 4.4: Entity Relational Diagram of Adnu Employee Research System

In figure 2.4, it shows the Entity Relationship Diagram (ERD) of the ADNU Employee Research System. The ERD is used to analyze data and show each data's relationship to one another.

- A User has a sub-types of Research and Admin
- A User has user_id, username, first_name, middle_name, last_name, email, password, and user_type
- A Researcher has a researcher_id, user_id, department, and contact_number
- A Researcher can add, update, and delete his/her own publication
- A Admin has admin_id and user_id
- A Admin can create both Researcher and Admin User
- A Admin can add, update, and delete all publications
- A Admin can export reports on pdf and excel format
- A Admin can export and import json text file
- A Admin can accept or reject and give feedback to publication
- A Author has author_id, user_id, publication_id, first_name, middle_initial, last_name, is_employee, and author_type
- A Author may or may not have one or many user and publication
- A Comment has comment_id, user_id, publication_id, message, and time_created
- A Comment may or may not have one or many user and publication
- A Notification has notification_id, user_id, publication_id, type, time, and status
- A Notification may or may not have one user and publication
- A Like has like_id, user_id, and publication_id
- A Like may or may not have one or many user and publication
- A Publication has sub-types of completed, presented, published, and creative_works

- A Publication has publication_id, file, abstract, status, feedback, date_submission, number_of_likes, submitter, and publication_type
- A Published records information of research types
- A Completed has completed_id, publication_id, title, year, institution, url, and completed_type
- A Completed records all completed research
- A Presented has presented_id, publication_id, title_presented, date_presentation, title_conference, place_conference, and presented_type
- A Presented records all presented research
- A Published has published_id, publicatio_id, year_published, first_title, second_title, vol_num, issue_num, page_num, indexing_database, peer_review, publisher, place_of_publication, title_of_conference, place_of_conference, url, and published_type
- A Published records all published research
- A Published may or may not have a editor
- A Editor has editor_id, published_id, first_name, middle_name, and last_name
- A Editor must have at least one published
- A Creative_works has creative_work_id, publication_id, type_cw, date, title_work, role, place_performance, publisher, artwork_exhibited, duration_performance, commission_agency, scope_audience, and award_received
- A Creative_works records all creative works

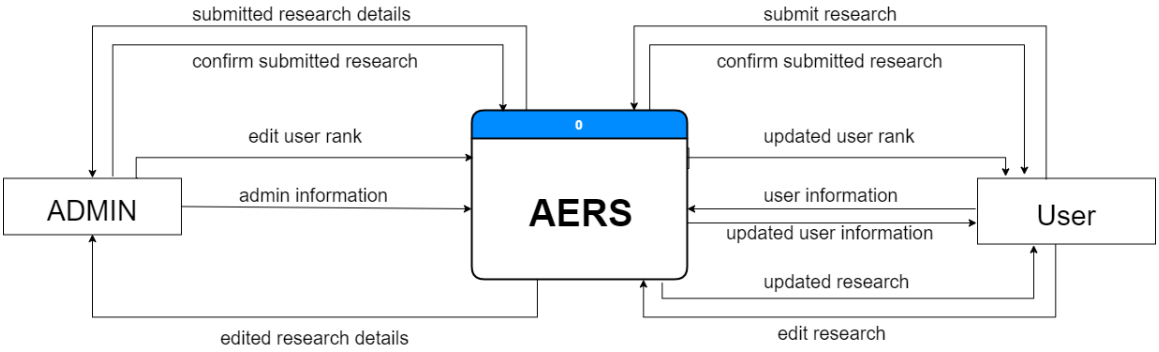


Figure 4.5: Context Level Data Flow Diagram

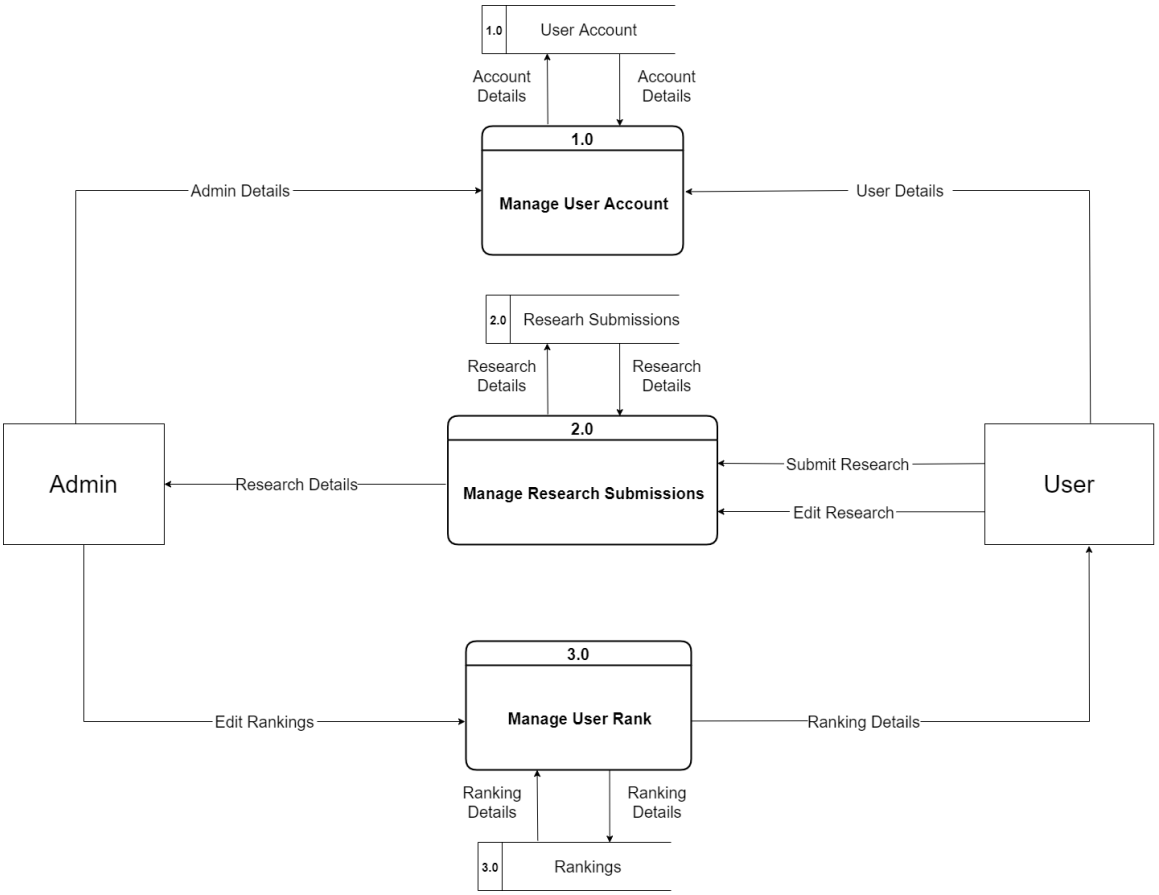


Figure 4.6: Level 1 Data Flow Diagram

4.1.1 Data Dictionary

AUTHOR					
Attribute Name	Data Type	Constraint	Size	Nullable	Description
author_id	INT	PRIMARY	9	No	id of the author
user_id	INT	FOREIGN	11	No	Foreign key from USER table
publication_id	INT	FOREIGN	11	No	Foreign key from PUBLICATION table
first_Name	VARCHAR		64	No	First Name of the Author
middle_initial	VARCHAR		24	No	Middle inital of the author
last_name	VARCHAR		64	No	Last name of the author
is_employee	VARCHAR		11	No	
author_type	INT		64	No	type of author

Table 4.1: Author Table

USER					
Attribute Name	Data Type	Constraints	Size	Nullable	Description
user_id	INT	PRIMARY	11	No	id of the user
username	VARCHAR		255	Yes	username of the user
First_Name	VARCHAR		255	No	First name of the user
Middle_Name	VARCHAR		255	No	Middle Name of the user
email	VARCHAR		255	No	email of the user
Password	VARCHAR		255	No	Password of the user
department	VARCHAR		255	Yes	department where the user is designated
$\text{contact}_n umber$	INT		11	Yes	contact number of the user
user_type	VARCHAR		11	No	type of user

Table 4.2: User table

COMMENT					
Attribute Name	Data Type	Constraints	Size	Nullable	Description
comment_id	INT	PRIMARY	9	No	
publication_id	INT	FOREIGN	11	No	foreign key from PUBLICATION table
user_id	INT		11	No	foreign key from USER table
message	VARCHAR		255	No	message of the comment
time_created	Timestamp		32	No	time when comment was posted

Table 4.3: Comment table

COMPLETED					
Attribute Name	Data Type	Constraints	Size	Nullable	Description
completed_id	INT	PRIMARY	11	No	Id of the completed work
publication_id	INT	FOREIGN	11	No	foreign key from publication table
title	VARCHAR		255	No	Title of the completed work
year	INT		11	No	year completed
institution	VARCHAR		255	No	institution completed
location	VARCHAR		255	No	location completed
url	VARCHAR		255	Yes	url of completed work
completed_type	VARCHAR		255	No	type completed

Table 4.4: Completed table

CREATIVE_WORKS					
Attribute Name	Data Type	Constraints	Size	Nullable	Description
cw_id	INT	PRIMARY	11	No	ID of the form
publication_ID	INT	FOREIGN	11	No	Foreign key from publication table
type_cw	VARCHAR		255	No	Room id of the form
month_year	DATE			No	Date of change
title_work	VARCHAR		255	No	Date filled
role	VARCHAR		255	No	Date approved by the admin
place_performance	VARCHAR		255	No	Link of the attachment file
publisher	VARCHAR		255	Yes	Flag of the form
artwork_exhibited	VARCHAR		255	Yes	
duration_performance	VARCHAR		255	Yes	
commission_agency	VARCHAR		255	Yes	
scope_audience	VARCHAR		255	No	
awards_received	VARCHAR		255	Yes	

Table 4.5: Creative works table

EDITOR					
Attribute Name	Data Type	Constraints	Size	Nullable	Description
editor_id	INT	PRIMARY	11	No	Id of the editor
publication_id	INT		11	No	foreign key from PUBLICATION table
editor_fn	VARCHAR		255	No	First Name of the editor
editor_mi	VARCHAR		255	No	middle initial of the editor
editor_ln	VARCHAR		255	No	last name of the editor

Table 4.6: Editor table

NOTIFICATION					
Attribute Name	Data Type	Constraints	Size	Nullable	Description
notification_id	INT	PRIMARY	11	No	notification id
user_id	INT		11	No	foreign key from USER table
publication_id	INT		11	No	foreign key from PUBLICATION table
type	VARCHAR		255	No	
time	DATETIME			No	time of the notification
status	VARCHAR		11	No	status of the notification

Table 4.7: Notification table

PRESENTED					
Attribute Name	Data Type	Constraints	Size	Nullable	Description
presented_id	INT	PRIMARY	11	No	id of the presented work
publication_id	INT		11	No	foreign key from PUBLICATION ID
title_presented	VARCHAR		255	No	Title of the presented work
date_presentation	VARCHAR		255	No	Date of the presentation
title_conference	VARCHAR		255	No	Title of conference
place_conference	VARCHAR		255	No	Place of the conference where it will be held.
presented_type	VARCHAR		255	No	type of presented work

Table 4.8: presented table

PUBLICATION					
Attribute Name	Data Type	Constraints	Size	Nullable	Description
publication_id	INT	PRIMARY	11	No	id of the presented work
file	VARCHAR		11	Yes	
abstract	VARCHAR		3000	Yes	Title of the presented work
num_views	INT		11	No	Date of the presentation
status	VARCHAR		50	No	Title of conference
feedback	VARCHAR		255	Yes	feedback of the admin.
publication_type	VARCHAR		255	No	type of publication work
date_submission	VARCHAR		255	No	date when work is submitted
submittor	INT		11	No	name of who submitted the work

Table 4.9: publication table

PUBLISHED					
Attribute Name	Data Type	Constraints	Size	Nullable	Description
published_id	INT	PRIMARY	11	No	id of the published work
publication_id	INT	FOREIGN	11	No	foreign key from PUBLICATION table
year_published	INT		11	Yes	Year of the work was published
title_atricle	VARCHAR		255	Yes	title of the article
title_journal	VARCHAR		255	Yes	title of the journal
vol_name	INT		11	Yes	volume name of the work
issue_num	INT		11	Yes	issue number of the work
page_num	VARCHAR		255	Yes	page number of the work
indexing_database	VARCHAR		255	Yes	
peer_review	VARCHAR		255	Yes	indexing database of published
title_book	VARCHAR		255	Yes	title of the book
title_chapter	VARCHAR		255	Yes	title of the chapter
publisher	VARCHAR		255	Yes	the publisher of the work
place_of_publication	VARCHAR		255	Yes	the location of the publisher
place_of_conference	VARCHAR		255	Yes	location of the conference
published_type	VARCHAR		255	No	type of published work
title_conference	VARCHAR		255	Yes	title of the conference
url	VARCHAR		255	Yes	url of the published work

Table 4.10: published table

LIKE TABLE					
Attribute Name	Data Type	Constraints	Size	Nullable	Description
like_id	INT	PRIMARY	11	No	????
user_id	INT	FOREIGN	11	No	foreign key from table USER
publication_id	INT	FOREIGN	11	No	foreign key from table PUBLICATION

Table 4.11: LIKE TABLE

4.2 Testing Plan

The testing plan is the fourth phase in the waterfall model. It is required for the developers to test the proposed system for further improvements and fix bugs along the way. The above diagrams serves as a guide to the implementation of the proposed system and to communicate with our client URC to give us ideas on how we will evaluate our system, also the data collected by the developers from the system testing will surely improve the system and its capability for the client to use.

4.2.1 Methods

This section details test roles and major activities for the testing.

Personnel

The experiment team will be composed of three people: The test monitor and 2 observers. The test monitor will be responsible for interaction with test participant. Each observer will be assigned two users that they have to observe in the duration of the test. They have to keep record of feedback and all issues encountered. During the test itself, they have to work independently, keenly observing their corresponding users.

Setup of Testing Environment

The test will take place in URC Office. The user will be provided with a seat and a laptop to use. The test monitor will be seated next to the participant. The observers will be standing or sitting at far enough from the users to not make the users uncomfortable but close enough to be able to see the users' screens and hear their comments.

Selection of Participants

The participant should be an Admin of URC and a employee of ADNU. They should be able read and use laptop.

Note: that it is necessary to filter participants even before the test itself. You should give your candidate participants a questionnaire that determines whether they fit your criteria for a test participant at all (see Sample Screening Questionnaire). If they do not fit your criteria, you should

not use them for the test. In this case, for example, anyone who is under 18 or over 40 cannot be part of the test. Anyone who has not taken any English classes could not be part of the test.

Scheduling of the Test The task monitor will set an appointment to the URC and some faculty member to conduct the testing at their convenient time.

Welcoming the Participants

When the test participants enter the test venue, the test monitor will ask them to sit in the designated area. The test monitor introduces the project team and explains the purpose of the test.

Demographic Questionnaire

The test monitor administers a demographics questionnaire (see Demographics Questionnaire) to gather some relevant facts about the users.

Task start and observation

After the demographics questionnaire, the test monitor can ask the user to begin using the service. The observers begin their observations when the timer starts (See Timing 60).

During the test, the test monitor can answer questions or provide assistance, if requested.

SUS Questionnaire

After the timer stops, the test monitor should ask the user to stop using the service. The test monitor should then administer the SUS Questionnaire (see SUS Questionnaire).

Debriefing

After the SUS Questionnaire, the test monitor interviews the users based on the questions on the Debriefing questionnaire (see Debriefing Questionnaire).

Thanking the user The test monitor thanks the users.

Summary of results

The group should compute for the SUS Score (See Computing SUS) and summarize the results based on the report template (see Summary of Results).

Chapter 5

Results and Discussion

This chapter discusses about the result of the assessment and testing of the Ateneo Employee Research Syystem. The result during the assessment of the system served as a guide to the researchers to be able to evaluate the participant's satisfaction and improvement of the system and be able to determine the things that needs further enhancement.

With the use of SUS Questionnaire, here is the summary of each item. The rating is 1 being the "Strongly Disagree" scale and 5 being the "Strong Agree" scale.

5.1 Testing Result

Tester's Information

	Tester 1	Tester 2	Tester 3	Tester 4	Tester 5	Tester 6	Tester 7	Tester 8
Age	47	40	48	50	25	25	32	38
Gender	F	F	M	M	F	F	M	F
Job Position	URC ADMIN	URC ADMIN	URC ADMIN	ADNU EMPLOYEE	ADNU EMPLOYEE	ADNU EMPLOYEE	ADNU EMPLOYEE	ADNU EMPLOYEE

Data Survey Questions

System Usability Scale

Participant id: _____

CHECK THE NUMBER THAT BEST MATCHES HOW YOU FEEL

		Strongly Disagree				**Strongly Agree**
		1	**2**	**3**	**4**	**5**
1.	I think that I would like to use this application frequently.					
2.	I found the application unnecessarily complex.					
3.	I thought the application was easy to use.					
4.	I think that I would need the support of a technical person to be able to use this application.					
5.	I found the various functions in this application were well integrated.					
6.	I thought there was too much inconsistency in this application.					
7.	I would imagine that most people would learn to use this application very quickly.					
8.	I found the application very cumbersome to use.					
9.	I felt very confident using the application.					
10.	I needed to learn a lot of things before I could begin using the application.					

What features of the system do you think standout?

What aspect of the system did you find unnecessary?

What are the things that you liked about the website?

Testers	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	SUS scores
T1	5	2	4	2	4	1	4	1	4	1	85
T2	5	2	4	4	4	2	5	2	4	5	67.5
T3	5	2	5	2	5	2	5	1	5	2	77.5
T4	5	1	5	2	5	2	5	1	5	1	95
T5	5	2	5	3	3	1	4	1	4	3	82.5
T6	5	1	4	2	4	2	4	2	4	2	80
T7	5	1	4	2	5	1	5	1	4	1	90.5
T8	5	1	5	1	5	1	4	1	5	1	29

Total Average: 81.56%

Figure 5.1: Computed SUS Scores and General SUS Average Scope

SUS Score	Grade	Adjective Rating
80.3 and above	A	Excellent
68-80.3	B	Good
68	C	Okay
51-68	D	Poor
51 and below	F	Awful

Figure 5.2: Interpreting SUS Score

Figure 5.1 Figure 5.1 shows that the average SUS score is at 81.5625% which means that the system is Good, and it can be used by URC and ADNU employees. Majority of the testers mentioned that the system will be helpful, because their work will be much easier such as collecting/storing researches from ADNU faculty and staff. They have also mentioned that they like how the system covers the ability to generate reports of the research outputs of faculty and staff. However one tester which is T3 mentioned that although the functions were really helpful it still lacks some feature like the subject search wherein when you try and search for a work you can tag a specific topic.

5.2 Summary of Debriefing

The Ateneo Employee Research System will be useful for the researchers especially when it comes to adding and submitting their works. Base on the survey the system has still rooms for

improvements so that it can be fully developed and be used by the users. The testers mentioned that the instructions on the system were very clear and they really liked the functions, but some mentioned they had some confusion on the search bar inside the homepage. They did not know that they can also search by author, year, and title of work since we only input by the title.

Chapter 6

Conclusions and Recommendations

6.1 Conclusion

Based on the results obtained, it can conclude that the system is usable for URC and the ADNU employees. The average score of the SUS of the testers clearly shows that the system is usable although it still needs some improvement. Furthermore this system will benefit both the URC admins and ADNU employee since they always needed this kind of system so that data collecting/storing researches will make their jobs easier.

6.2 Recommendations

This section composes all of the suggestions of both panel and users for further improvements of the system.

During the process of developing our system the panel has recommended that it needs to have the following feature: Notification, pending submissions, submission page, not reviewed page, add author/multiple authors and also the import/export json files

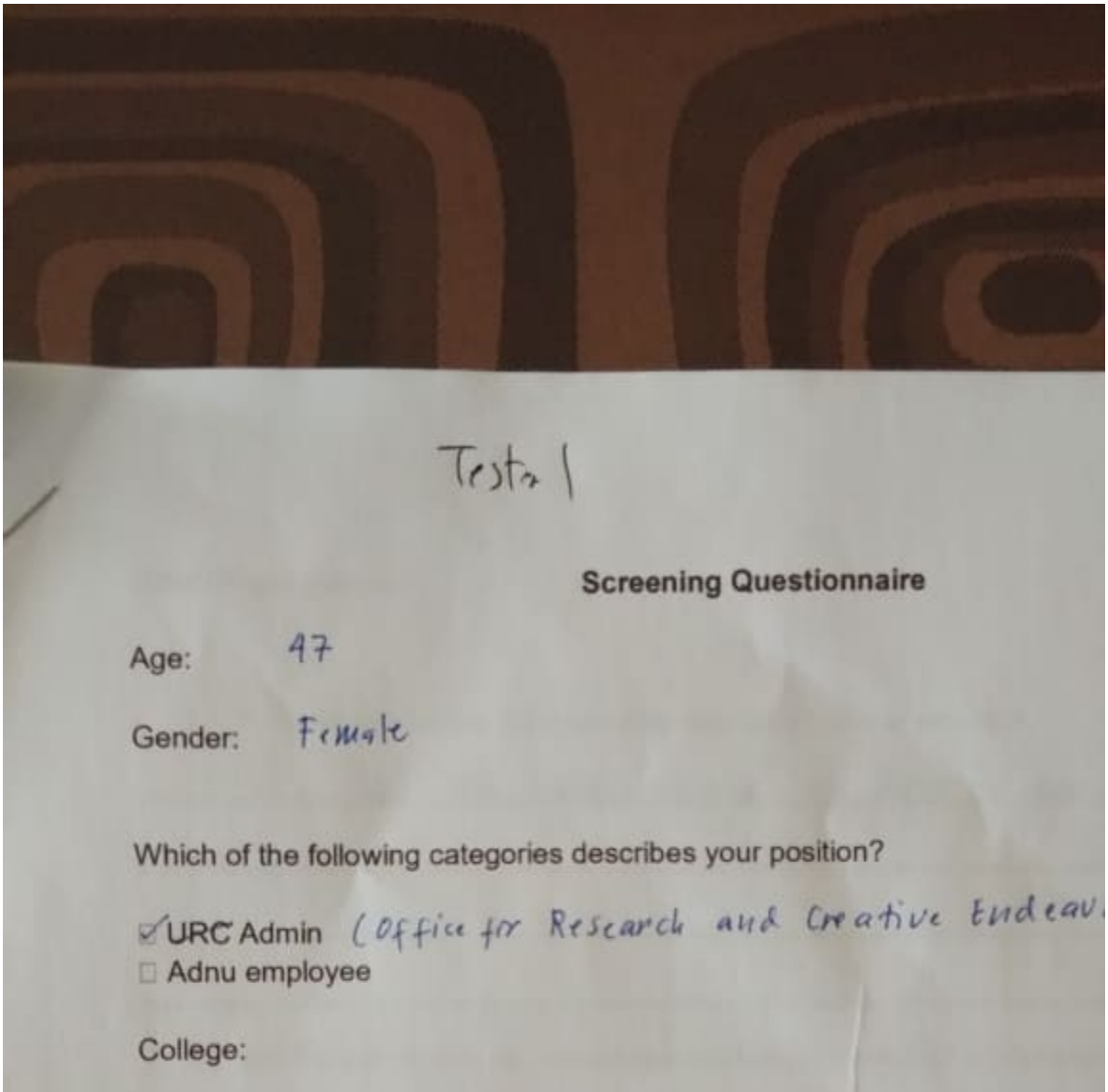
During the process of developing our system the panel has recommended that the UI/UX flow must be revised and needs to have a proper look so that users won't be confused when navigating through the system. They said that it needs to have a notification function so that the admin and user will be prompted if a work has been submitted or a work has been approved/rejected. They

also said that it needs to have a submissions page wherein all works will go there. They also added that it needs to have an not review page so that admin can know which work should be reviewed. Lastly they mentioned that it needs an add authors with multiple authors on research papers.

Appendix A

Evaluation Tool

A.1 Demographic Questionnaire



Testa 1

Screening Questionnaire

Age: 47

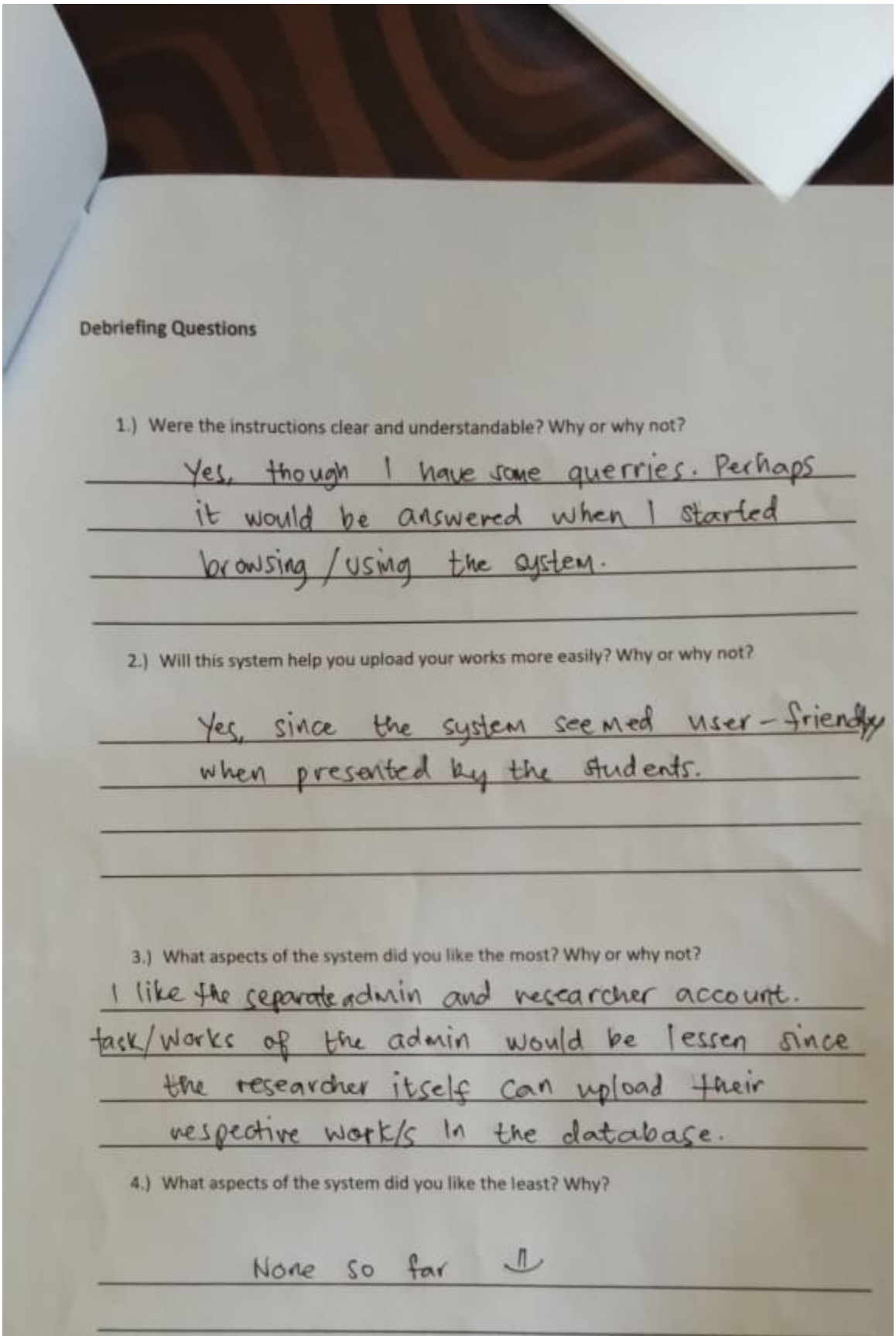
Gender: Female

Which of the following categories describes your position?

☑ URC Admin (Office for Research and Creative Endeav
☐ Adnu employee

College:

A.2 Debriefing Questions



Debriefing Questions

1.) Were the instructions clear and understandable? Why or why not?

Yes, though I have some querries. Perhaps it would be answered when I started browsing / using the system.

2.) Will this system help you upload your works more easily? Why or why not?

Yes, since the system seemed user-friendly when presented by the students.

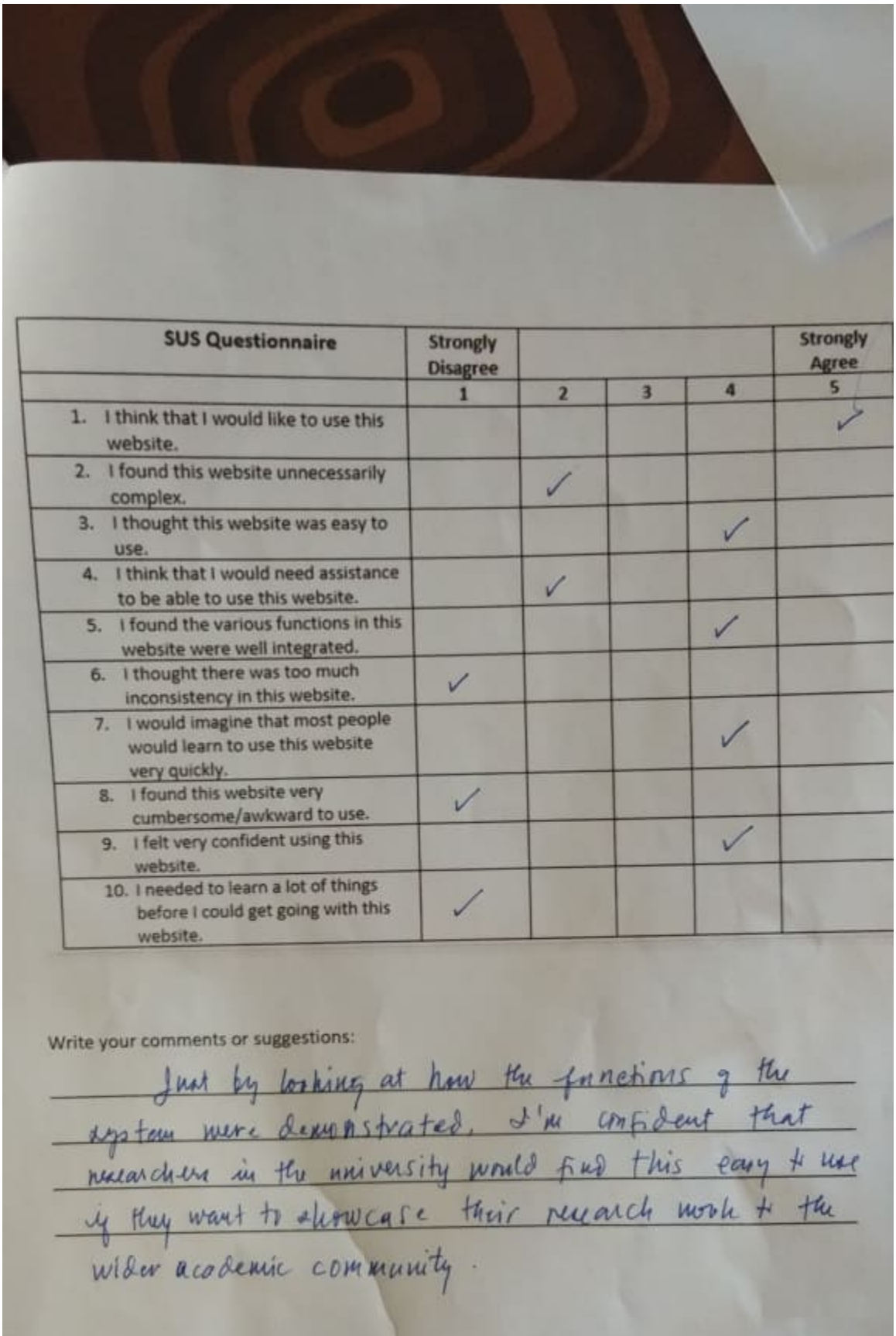
3.) What aspects of the system did you like the most? Why or why not?

I like the separate admin and researcher account. task/works of the admin would be lessen since the researcher itself can upload their respective work/s in the database.

4.) What aspects of the system did you like the least? Why?

None so far ☺

A.3 System Usability Scale



SUS Questionnaire	Strongly Disagree				Strongly Agree
	1	2	3	4	5
1. I think that I would like to use this website.					✓
2. I found this website unnecessarily complex.		✓			
3. I thought this website was easy to use.				✓	
4. I think that I would need assistance to be able to use this website.		✓			
5. I found the various functions in this website were well integrated.				✓	
6. I thought there was too much inconsistency in this website.	✓				
7. I would imagine that most people would learn to use this website very quickly.				✓	
8. I found this website very cumbersome/awkward to use.	✓				
9. I felt very confident using this website.				✓	
10. I needed to learn a lot of things before I could get going with this website.	✓				

Write your comments or suggestions:

Just by looking at how the functions of the system were demonstrated, I'm confident that researchers in the university would find this easy to use if they want to showcase their research work to the wider academic community.

REFERENCES

[1] S. Adamou and L. Ntoka, *The impact of digital technologies on academic libraries*, 2017.

[2] M. B.A. Fabunmi and M.Fabunmi, *Digitization of library resources: Challenges and implications for policy and planning*, International Journal of African African American Studies, 2.

[3] R. Crow, *The case for institutional repositories: a sparc position paper*, 2002.

[4] J. A. Hoffer, V. Ramesh, and H.Topi, *Modern database management, pearson, 12 ed.*

[5] K. Kaczynska, *Digital repositories of scientific institutes*, 2014.

[6] C. Lagoze, *A secure repository design for digital libraries*, 1995.

[7] Y. Li, *Institutional repositories and digital preservation: Assessing current practices at research libraries*, 2011.

[8] C. A. Lynch and J. Lippincott, *Institutional repository deployment in the united states as early 2005, d-lib magazine*, 2005.

[9] A. R. Mesa, *Design and development of an online repository for thesis and special problem manuscript, pp. 61-72*, 2017.

[10] W. J. Mgonzo and Z. O. Yonah, *Design and development of a web based digital repository for scholarly communication: A case of nm-aist tanzania*, 2014.

[11] ——, *Towards a web-based digital repository: Identification of needs and behavior of users, international journal of computer applications*, 2014.

[12] R. Molteno, *Digital repositories-making africa's intelligentsia visible? bulletin of the national library of south africa, pp. 167-182.*, 2015.

[13] J. M. Perrin, H. M. Winkler, and L. Yang, *Digital preservation challenges with an etd collection: a case study at texas tech university, the journal of academic librarianship*, 2015.

VITA

Rennel Jun P. Del Monte, Ralph S. Eufracio, Jaime C. Pequiras III are BS Information Technology students of the Department of Computer Science at the Ateneo de Naga University.