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

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by

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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.

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.

1.4. Specific Objectives

1.4.1 Specific Objectives

- Profile accounts for verified employees of AdNU and login using their gbox account
- Employees of Ateneo de Naga University to be able to upload their reseach 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 database to store the data
- To conduct a user testing and provide an evaluation
- To fully develop the proposed system and deploy to URC

1.5. 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. academic rank
    6. 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
- View statistics of the research paper (number of views, number of downloads)

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 digitalize 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

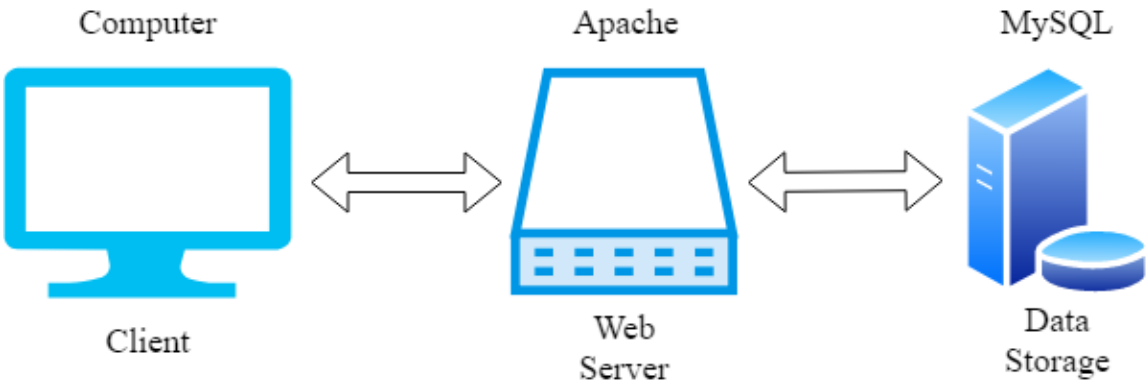

Figure 3.1: Three Tier System Architecture

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. Development Tools

PHP: Hypertext Preprocessor

PHP is programming language that is used to develop dynamic web pages or applications. It is a powerful language that is easy to understand.

HTML5

HTML5 or the HyperText Markup Language is a code language that describes web pages. HTML5 does not require payment to be used nor plugins for it to work and is a cross-platform which makes it compatible not only to personal computers but also to mobile phones.

JavaScript

JavaScript is a programming language that manipulates data in web languages. JavaScript is used to perform functions such as updating web pages, add dynamic variables, and calculate. This makes it a necessary component for making a user friendly experience.

Cascading Style Sheet

Cascading Style Sheet is a style sheet language that adjust the web page described by HTML. The CSS is used to change the setting or the appearance of the web such as color and text also it is most compatible with html for designing web pages.

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. Software 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.

XAMPP

XAMPP is a free cross-platform package. It is easily installed and is used for ease of access to web-server applications such as Apache.

Draw.io

A free online diagram editor,that will help on creating models and application designs for our application.Making diagrams such as ERD and use-case so that modelling the application will be efficient.

3.4. Hardware Development Tools

These are the proponents specifications of the hardware used in the development of the project.

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Chapter 4

Methodology

4.1. Software Development Model

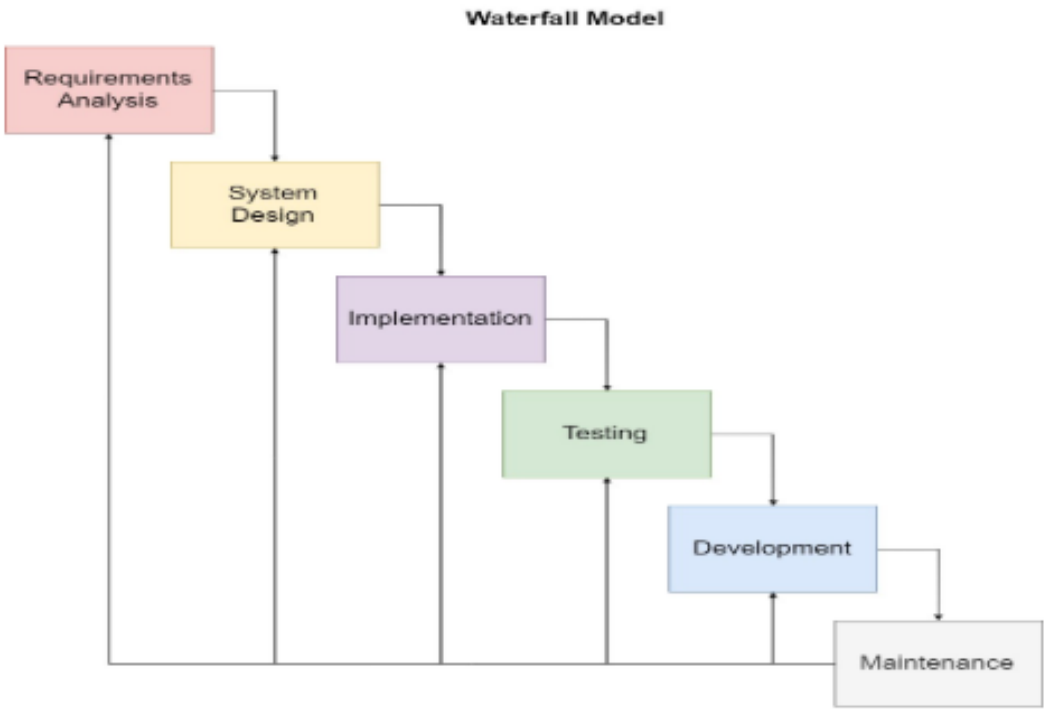

Figure 4.1: Waterfall Model for AERS

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 Reseach Papers and anaylze 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.

4.1.1. Use Case Diagram

4.1.2. Entity Relational Diagram

4.1.3. Context Level Data Flow Diagram

4.1.4. Level 1 Data Flow Diagram

4.1.5. Mock up Design

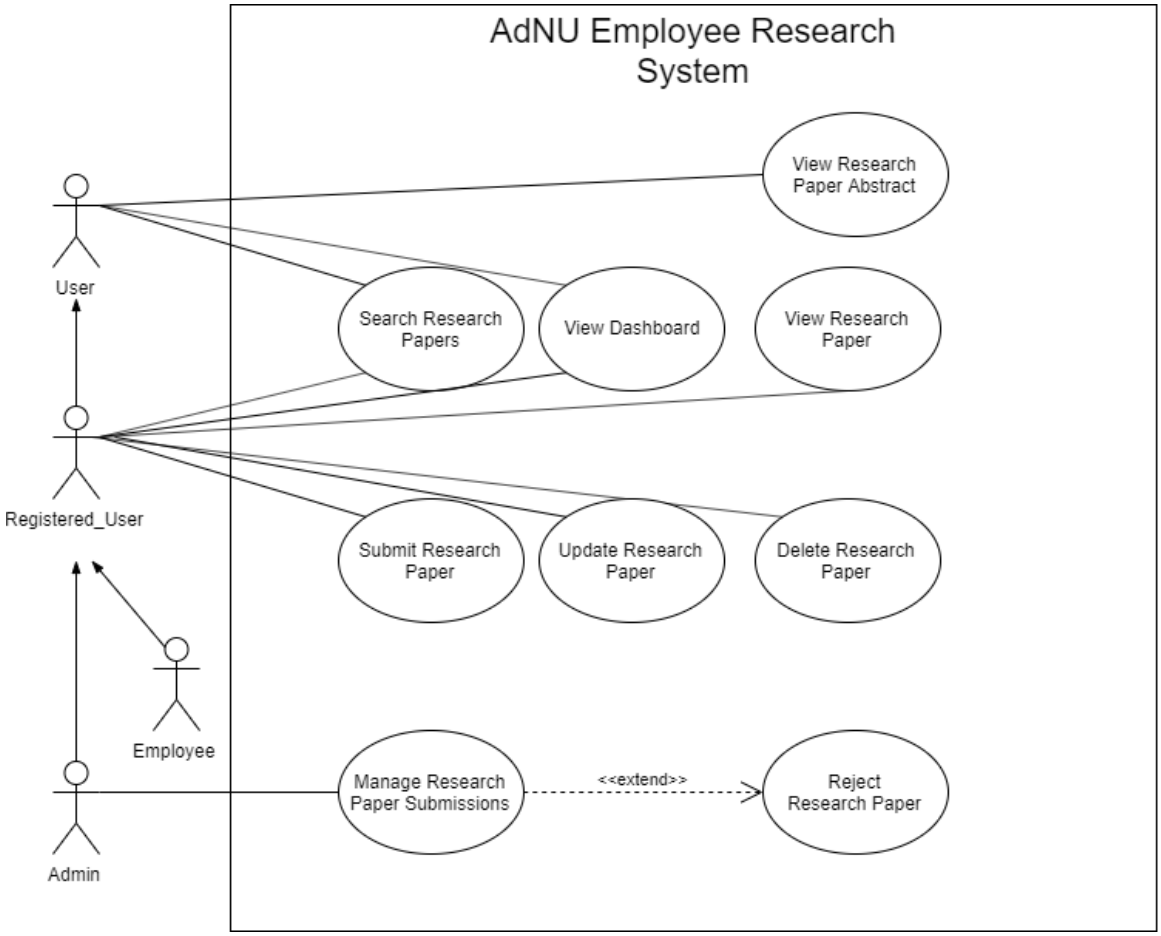

Figure 4.2: Use Case Diagram

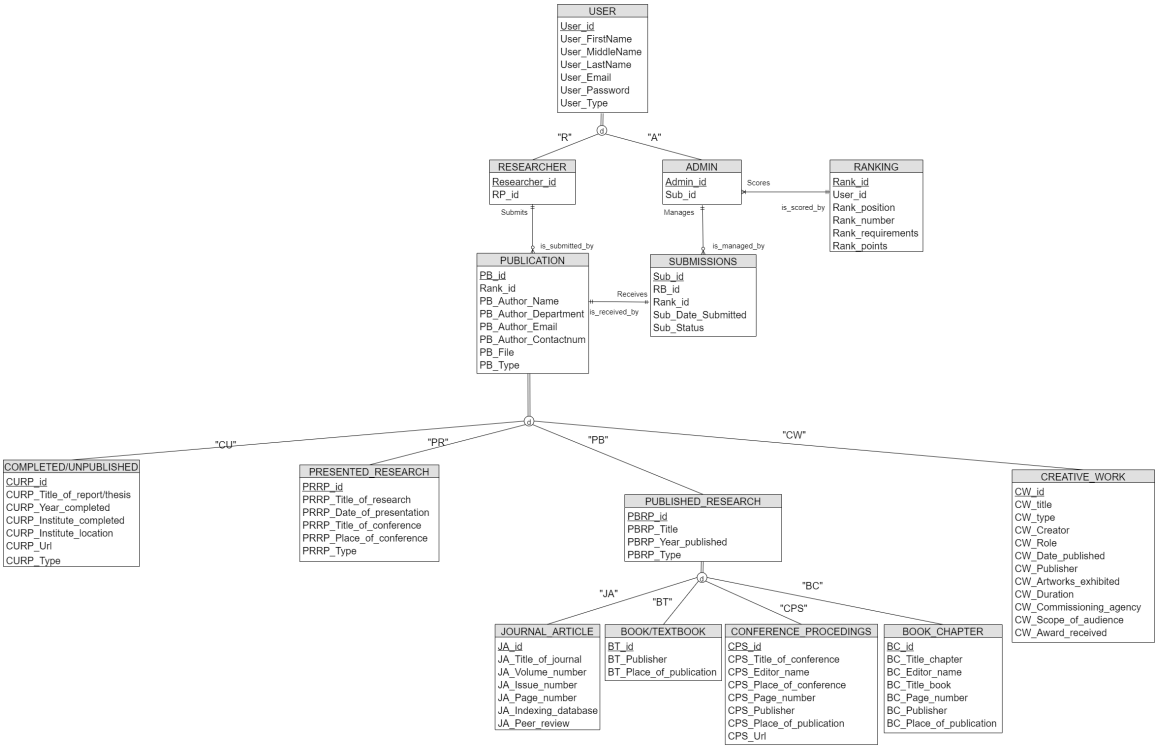

Figure 4.3: Entity Relational Diagram

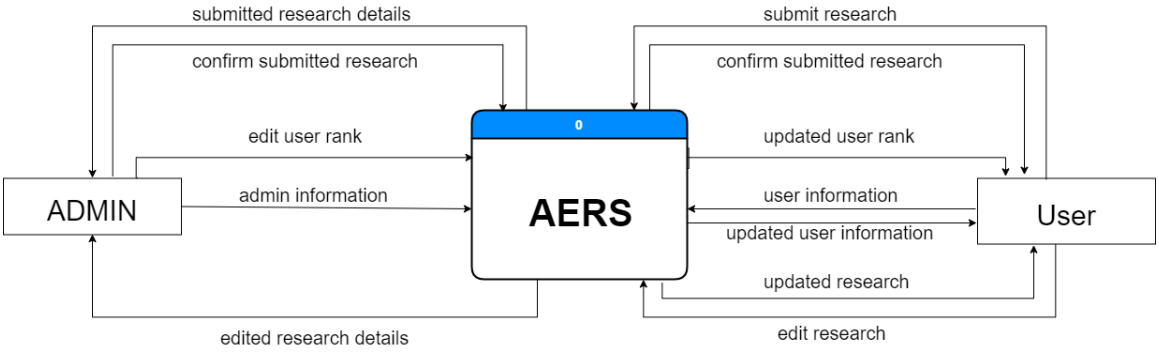

Figure 4.4: Context Level Data Flow Diagram

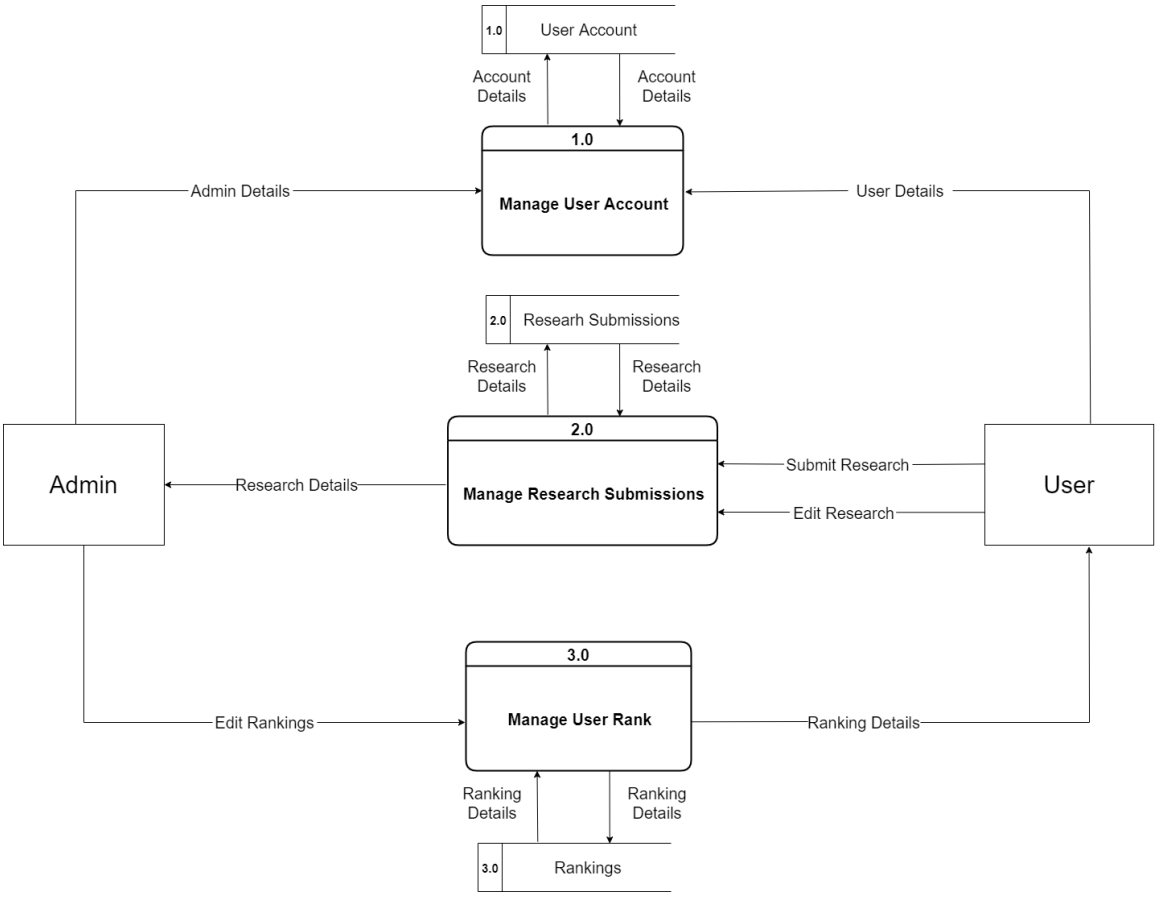

Figure 4.5: Level 1 Data Flow Diagram

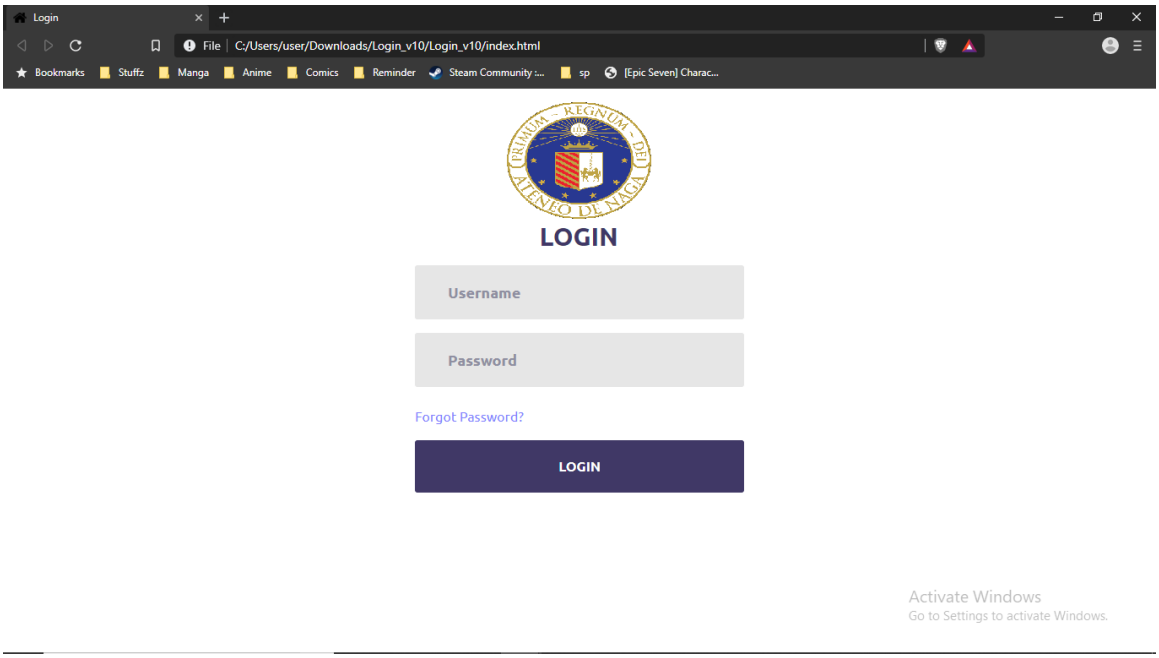

Figure 4.6: Login

Figure 4.7: Dashboard

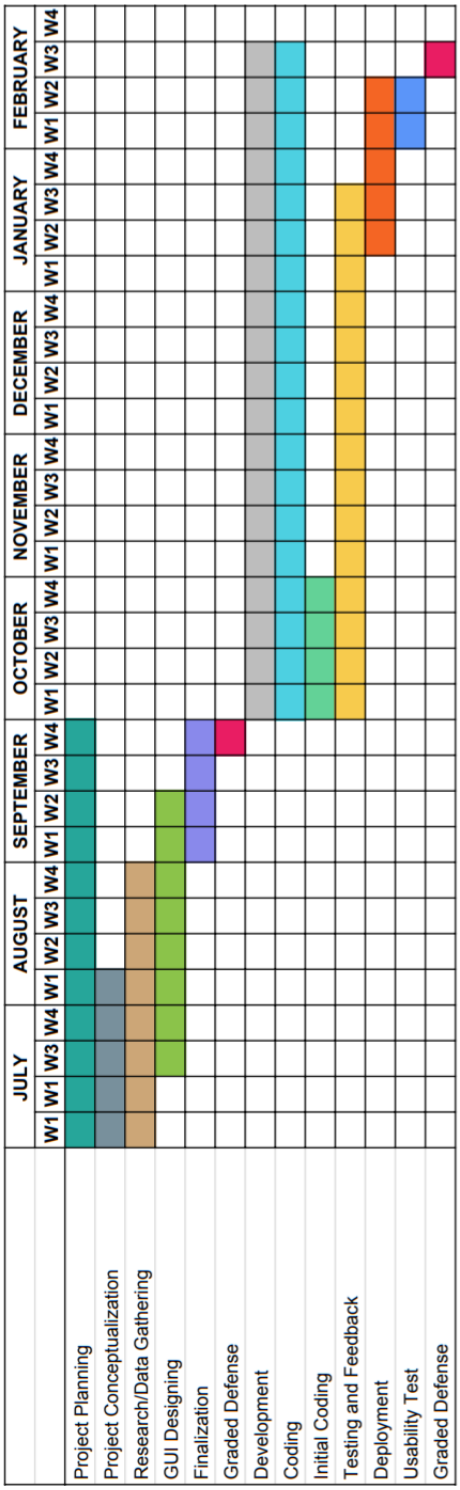

Figure 4.8: Gantt Chart

Chapter 5

Contributions and Recommendations

5.1. Summary of Contributions

5.2. Implementation Plan

Implementation plan in terms of Infrastructure and Deployment.

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