Data Driven Decision making in Education Analytics for Students’ success.

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A Capstone Project Presented to

The Faculty of the College of Computer Studies

Tarlac State University

Tarlac City

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

In Partial Fulfillment

of the Requirements for the Degree

Bachelor of Science in Information System

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

by:

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<Name 3>

<Name 4>

<Month and year of degree conferral, not date of submission>

APPROVAL SHEET

This <thesis or capstone project> of **<Name 1>, <Name 2>, <Name 3>,** and **<Name 4>** titled **“<Title>”**, which is prepared and submitted in partial fulfillment of the requirements for the degree **<Degree>** has been examined and hereby recommended for approval and acceptance.

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*Dean, College of Computer Studies*

ABSTRACT

Insert your abstract here. This portion is not to be indented and should be clear, concise, and complete. An abstract tells the reader the reason for writing the thesis or capstone project, the current approaches and gaps in the literature, the different objectives or aims of the research, the methodology used in attaining the objectives, the main findings, and end it with the main conclusion including the implications of the research. Limit the abstract writing to 350 words.

DEDICATION

This portion is optional but perhaps you have someone or some people who have inspired you to push on with your studies? A dedication would be a fitting way to acknowledge their impact on your success.

ACKNOWLEDGMENT

The road to this point in your studies couldn’t have been travelled alone. Along the way, someone somewhere helped you. This is your chance to thank them.

By the way, exercise the liberty to be personal to reflect the sincerity of your gratitude…

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# INTRODUCTION

In the field of education, ensuring student success and improving learning outcomes is a paramount goal. However, educational institutions face a significant challenge in harnessing the potential of data-driven decision-making to enhance student success. While vast amounts of data are generated in educational settings, there exists a gap in effectively leveraging this data to inform decision-making processes. This gap results in missed opportunities to identify and support students who may be at risk of underachievement or dropping out, ultimately hindering efforts to provide a high-quality education. Therefore, the problem at hand is to establish effective data analytics strategies and tools that enable educational institutions to utilize their data resources to proactively identify factors influencing student success, intervene when necessary, and optimize educational programs and support services for improved student outcomes.

## Project Context

Data analytics in higher education provides unique opportunities to examine, understand, and model pedagogical processes.

Consequently, the methodologies and processes underpinning data analytics in higher education have led to distinguishing,

highly correlative terms such as Learning Analytics (LA), Academic Analytics (AA), and Educational Data Mining (EDM),

where the outcome of one may become the input of another. The purpose of this paper is to offer IS educators and researchers.

an overview of the current status of the research and theoretical perspectives on educational data analytics.

## Purpose And Descriptions

Many higher education institutions are investigating the possibility of developing predictive student success models that use different sources of data available to identify students that might be at risk of failing a course or program. There are a multitude of factors that have motivated interest in learning analytics. One motivating factor for the increased interest in learning analytics is the general trend for increased accountability in all levels of education. Educational institutions around the country are feeling increased pressure to account for what and how their students are learning

## Objectives

The researcher’s study aims design and develop a Web-based Data Driven Decision making in Education Analytics for Students’ success.

1. To design and develop a Web-based Data Driven Decision making in Education Analytics for Students’ success incorporating the following features.

1.1 Admin Module

1.1.1 List of all student

1.1.2 Analytics Dashboard

1.1.3 List of all Student Engagement

1.1.4 List of all Student Performance or Grades

## Scope and Delimitations

Insert the scope and delimitations here.

# RELATED LITERATURE

## Discussion of Models

Include comprehensive discussion on theorems, definitions, fundamental algorithms, mathematical models/formula

## Conceptual Framework

Provide a conceptual framework in the form of a single diagram which should show all the aspects of the study. Provide a description of the framework after the diagram.

# TECHNICAL BACKGROUND

## Software Development Requirements

Describe the different software requirements that you used

## Hardware Development

Describe the hardware that you used. You may delete this section if no hardware was used.

## Sources of Data

Indicate the source of the data, type of data, year of acquisition, and other pertinent details that will be used for testing your algorithm.

# METHODOLOGY

Give a little description as to what to see in this chapter blah blah blah blah blah blah. Blah blah blah blah blah blah blah blah. For each item to be included in the methodology, refer to the example discussed and uploaded during the seminar series. The arrangement and presentation should follow what was outlined below. Since you are already in capstone 2, update all of this to reflect the actual.

## Methods in Data Gathering

The methods are the ways the researchers use in gathering information that is related to the development of the system. Outlined below are sample methods. You may add or remove if you did not use them.

The following are the methods used by researchers in gathering data:

### Interview Method

Narrate here how the interview was conducted. When and where did it took place, who did you interview, what were the information asked or what was the interview all about.

### Internet Method

Narrate how the internet played an important role in your research. What were the topics you needed help with, what kind of materials were you able to gather and how did it help you in the conceptualization of your research?

### Observation

Narrate how did you do the observation. Who are doing the observation, when and where? What is the objective why you are doing the observation?

## Design and Development of <Title> This is objective number 1

### Requirement Analysis and Documentation

#### User Requirements

Chart

Description automatically generated

Figure . Use Case Diagram of <title>

Figure<#> shows the <title of the figure>. Describe what the figure is about in detail so the readers will understand. Use insert caption in writing the title of your figure and table, this will help in generating the list of figures and tables.

#### User Characteristics

The following are just examples of how you would create the user characteristics. Users here should be consistent as drawn in the use case diagram. <The primary user of the system is the cashier as the encoder hired by the proprietor. The administrator is the proprietor. Both are not expected to be computer experts so a user-friendly software shall be taken into consideration in the design>.

The user will be able to:

1. Add supplier information
2. Add records of supply purchases
3. Add sales
4. Print inventory report
5. Print sales report
6. Print supply purchases

The administrator will be able to:

1. Add users that is in charge of encoding data to the software
2. Can do what the users can do
3. Set backup and restore settings
4. Set business information

#### Functional Requirements

Give a little description as to what to see in this chapter blah blah blah blah blah blah. Blah blah blah blah blah blah blah blah.

Table . Functional Requirement for Login Module

| Req.ID | Requirement Description | Priority | Complexity |
| --- | --- | --- | --- |
|  | Registered Users shall be able to Login to System by providing Username and Password   * Upon successful login, users shall be redirected to the dashboard * If incorrect, Login error message shall be displayed | High | Medium |
|  | If tables are divided as shown, ensure that the table header is repeated on top of the page. You can do this by highlighting the row header then right click > table properties > row tab > click on repeat as header on top of the page | High | Low |

#### 

#### Non-Functional Requirements

Give a little description as to what to see in this chapter blah blah blah blah blah blah. Blah blah blah blah blah blah blah blah.

Table . Non-Functional Requirement for Safety and Security of <title>

|  |  |
| --- | --- |
| Code | Dependencies Description |
| SS1 | Accessing the software will require a username and password |
| SS2 | The database where the password should be save shall have encryption |
| SS3 | All transaction including adding, editing and deleting of records are recorded in audit logs |
| SS4 | Backup and restore function |

### Design of Software and/or System and/or Product and/or Processes

#### Graphical user interface Description automatically generatedER Diagram

Figure . Database Schema of <title>

Figure <No> shows the Entity Relationship Diagram of the software. Describe the relationship of all the entities listed. Figure numbers are continuous.

#### Functional Decomposition Diagram

A screenshot of a computer

Description automatically generated with low confidence

Figure . Functional Decomposition Diagram of <Title>

Figure <No> shows the Functional Decomposition Diagram of <title>. Describe the FD listed and their functions.

#### Operating Environment

Give a little description as to what to see in this chapter blah blah blah blah blah blah. Blah blah blah blah blah blah blah blah.

Table . <Title of your table>

| Code | Environment Description |
| --- | --- |
| OE1 | SMS shall use Windows 7 or higher operating system |
| OE2 | Microsoft access shall be installed on the computer for the database |

#### Design and Implementation Constraints

Give a little description as to what to see in this chapter blah blah blah blah blah blah. Blah blah blah blah blah blah blah blah.

Table . <Title of your table>

|  |  |
| --- | --- |
| Code | Design Constrains and Implementation Constraints Description |
| DC1 | The software shall be programmed in .net using Access as database |
| IC1 | The system shall have a user’s manual |
| IC2 | The system shall have no network security in place |

The user interface here were deleted and transferred to Results and Discussion. What follows here are addition to the one discussed last semester.

### System Development Methodology

Mention here what type of system development methodology did you adopt. Why have you chosen it. Then you have to write what did you do from start to finish, following the chosen methodology. Place in here whatever is the modelling tool used by the chosen system development methodology. You have to narrate what happened during the entire development of the system following the methodology chosen.

Figure # System Development Methodology

Overview what are the steps/phases of the System Development Methodology Chosen and what are the reasons for choosing the methodology.

#### Planning

What did the team do during this phase? You have to tell us here. Note that this is just a sample phase. The phases may differ depending on the chosen system development methodology.

#### Scrum

What did the team do during this phase? You have to tell us here.

#### Project Schedule

Figure . Burn Down Chart Sample Only

Figure 4 shows the burndown chart of the developed system. Explain what the figure is all about.

## To evaluate the performance of <system> by means of <type of tests e.g. functional, repeated trial, accuracy, others> tests. This is objective number 2

### Functional Test <Replace this with whatever test you will use>

Describe here how did you conduct the testing in detail. Do not discuss results yet. Equations, software etc.

# RESULTS AND DISCUSSION

The arrangement of whatever will be attached here – screenshots, result of survey, result of testing will depend on the objectives of the research. If you have two objectives, follow that sequence in the presentation here. You can place a brief introductory paragraph before starting.

## Design and Development of <Title> This is objective number 1

A picture containing text, screenshot

Description automatically generated

Figure . Log-in Page of Admin

Figure 5 shows the log-in page of the admin. Explain and ensure the explanation is located at the same page of the image. Make sure to arrange this one as per feature stated in the objectives.

A computer screen capture

Description automatically generated with low confidence

Figure . Dashboard

Figure 6 shows the dashboard of the system. All important screenshots must be reflected here.

## To evaluate the performance of <system> by means of <type of tests e.g. functional, repeated trial, accuracy, others> tests. This is objective number 2

What follows here should show the results of the testing. Attached graph, table, or screenshot whatever best displays the result of you test.

# CONCLUSIONS AND RECOMMENDATIONS

## Conclusions

Write the general statement that says you achieved the objective here. Then specifically, itemize the conclusion based on the stated objective in Chapter 1 as follows. There is one is to one correspondence with respect to the objectives and conclusion.

1. Conclusion of objective number 1.
2. Conclusion of objective number 2.

Write another paragraph here for future directions. Take note that you may also consider adding the limitations that you identify in Chapter 1 as part of your future works. Your recommendations also goes here.

## Recommendations

Write your recommendations here.

# REFERENCES

|  |  |
| --- | --- |
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| [5] | L. G. S. Andy Nguyen, "Data Analytics in Higher Education: An Integrated View," [Online]. Available: http://jise.org/Volume31/n1/JISEv31n1p61.html. |

# APPENDICES

## <Appendix A:> <Title>

Place your appendices here. Please be sure that these have been referenced in the body of document.

## <Appendix B:> <Relevant Source Code>

# CURRICULUM VITAE

Write your CV here.