Government Degree College, Bellampally

Dist: Mancherial, State: Telangana.

Study Project 2021-22

Date: 21-01-2022

Computer Department

Project Title: Web-Based Student Result Management System

Supervisor:

K. Rama Raju, Lecturer in Computer,
Government Degree College, Bellampally

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Objectives:

Project objectives are **what you plan to achieve by the end of our your project**. This might include deliverables and assets, or more intangible objectives like increasing productivity or motivation. Your project objectives should be attainable, time-bound, specific goals you can measure at the end of your project.

CERTIFICATE

Certified that this study is a bonafide Students Jignasa Study Project done by the following B.Com (CA) &B.Sc. (MPCS) 2nd year students of Government Degree College , Bellampally, Mancherial Dist ,under the supervision of K. Rama Raju, Lecturer in Computer.

Participants:

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Supervisor **PRINCIPAL**

Project Title: Web-Based Student Result Management System

Abstract: The technological development and impact of computers and internet on our lives that has been verified over time affected various sectors of activity. And almost every task today is being run through computers. Getting information and quickly turning it into a product that consumers want is the essential key to staying in business and all of this is done nowadays using computers and applications or information systems.

And the education system is undeniably the backbone of the society; it focuses at preparing the young talents for the future. However, currently the process of students' result management and declaration at the Catholic University of Mozambique, is performed manually with extensive human intervention, the students' results are generated through a spreadsheet application and then printed on a paper, attached to a wall for declaration and then stored. The current research aims at creating a web-based student result management system, reducing time, effort and improving security. The methodology adopted for the elaboration of the research is based on qualitative study. The research results in the development of a multi-user system, based on web technology with MVC (Model-View-Controller) architectural pattern and developed using Java programming language with Apache Tomcat Server and MySQL Database Management System support.

1 Introduction:

The impact of computers and internet, on our lives today is probably much more than we really know. Getting information and quickly turning it into a product that consumers want is the essential key to staying in business and all of this is done nowadays using computers and applications or information systems. And the information systems will continue to change businesses and the way we live. Many corporate leaders are using technology to manage every aspect of their organization, from product creation to customer service. It has brought evolution in almost every field, it changed the ways of teaching, administration of activities such as e-learning, e-library and online portals where teachers and students communicate, and sharing of information has never been better. Student result declaration and management are amongst the most important activities within a university or any educational institution, since all other activities depend on it. Hence implementing an information system can be declared a significance result. The main objective of this research is to enhance and automate the management and declaration of students' results using a computerized system.

2. Research Significance:

The computerization of the current system will have an impact on the way the students access their results and, how it is managed and generated by the institution's employees. The system will make the life much easier for the institution as they will be able to store data much better than how they were able to do earlier. The students will have a smart management of their results and will be able to keep track of their progress with an ease of access, from anywhere, anytime and any device that has an internet connection, and just by entering their respective credentials provided by the institution. Not only for the students, but for the teachers and the institution's employees managing the system as well. They will be able to keep their data organized and secure. The system will allow the teachers to grade the students even from home, then automatically perform the grades calculation, and the students could easily

access and print them. This avoids the teachers from doing all the work manually, and have a better work quality and management that would reduce time, human effort and errors.

3. Literature Review:

Nowadays people interact directly with technology in fields such as education, government, finance, retail, entertainment, health care,science, travel, publishing, and manufacturing. And they also state that, educators and teaching institutions use technology to assist with education. Most equip labs and classrooms with laptops or desktops. Some even provide computers or mobile devices to students. Many require students to have a mobile computer or mobile device to access the school's network or Internet wirelessly, or to access digital-only content provided by a textbook publisher. And educators may use a Course Management System (CMS), sometimes called a Learning Management System (LMS), which is a software that contains tools for class preparation, distribution, and management. For example, through the course management system, students access course materials, grades, assessments, and a variety of collaboration tools.

Many schools offer distance learning classes, where the delivery of education occurs at one place while the learning occurs at other locations. Distance learning courses provide time, distance, and place advantages for students who live far from a campus or work full time.

These subprograms support, for instance:

- Allocation and organization of learning content for different learning scenarios;
- School administration;
- Information management;
- Online school business related communication.

4.Learning Management System Features:

User friendly, intuitive design and self-explanatory functionalities;

- Adequacy for the users' levels of experience and knowledge;
- High system robustness against data-loss or system failure;
- High data security standards;
- Easy accessibility;
- System flexibility for institutions' individual configurations and concept adaptations.

5. Research Methodology:

A research methodology is the elaboration of a clear strategy for gathering evidence, including the specific data collection methods to be used, the kinds of evidence to be collected, and the approach for analysing the evidence (Darian-Smith & McCarthy, 2017). It is the path to solve a research problem. Hence it must be planned according to the objectives of the study.

6. Data Collection Method:

Refers to the methods used to obtain and gather all the required data and information

for the execution of the current research. The data was collected using both, by primary data collection methods as well as secondary sources.Primary data are the original data that has been collected specially for the purpose in mind. And data collected from the original source using one or more of the primary data collection methods such as, interviews, observations, surveys, etc.

7. Data Analysis:

The classification and tabulation transform the raw data collected into useful information by organizing and compiling the bits of data into graphically understandable manner, and in the current research, it was done with the help of a UML (Unified Modelling Language) modelling tool, Astah.

8. System Development:

System development is a set of activities used to build an information system. System development activities often are grouped into larger categories called phases. This collection of phases sometimes is called the system development life cycle (SDLC), each system development phase consists of a series of activities (Freund et al., 2017). And in the current research, to develop the Web-Based Student Result Management System, the incremental model was employed, which is now the most common approach for the development of application systems and software products.

9. System Analysis:

Systems development is mainly done in two phases, namely, system analysis and design. And this chapter focuses on analysing the research data and describing a logical view of the whole process, by modelling the data analysed in the form of diagrams to visualize the design and specifications of the system in an object-oriented manner.

- Requirements determination: a fact finding activity.
- Requirements structuring: an activity that creates a thorough and clear description of current business operations and new information processing.

10. System Implementation:

A development environment refers to the mix of software tools, methods, and physical resources that an IT (Information Technology) team uses to create an information system. It usually is easier to use an IDE (Integrated Development Environment), which uses built-in tools provided by the software vendor (Tilley & Rosenblatt, 2017). And for the development of the current system, Eclipse IDE was used which is a well-known IDE, it is free, open-source, and community-supported.


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Check Results
<<extend>>
Print Results
Student
Log In
Professor
Change Password
Generate Results
<<include>>
Assign Grades
Assign Subjects to Professors
Manage Students
Enroll Students in a Subject
Administrator
Manage Subjects
Manage Students' Grades
Manage Professors

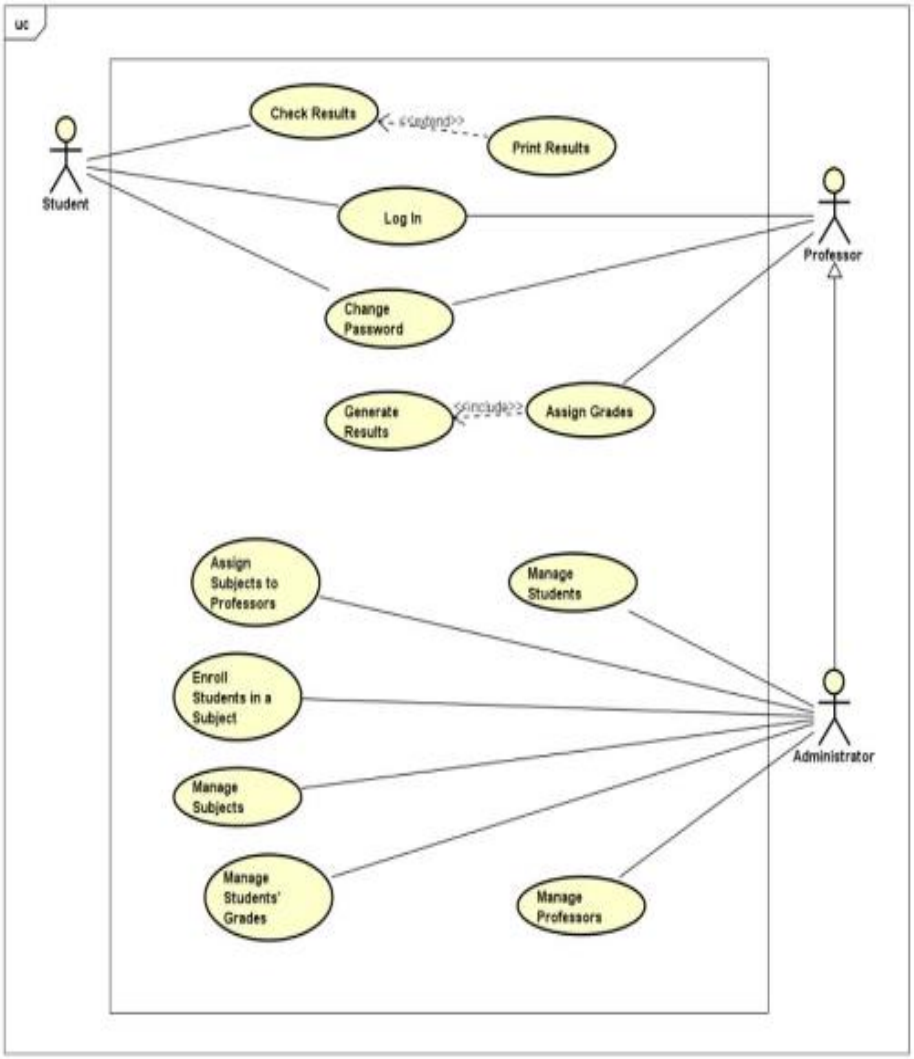


Figure 1: Use Case Diagram

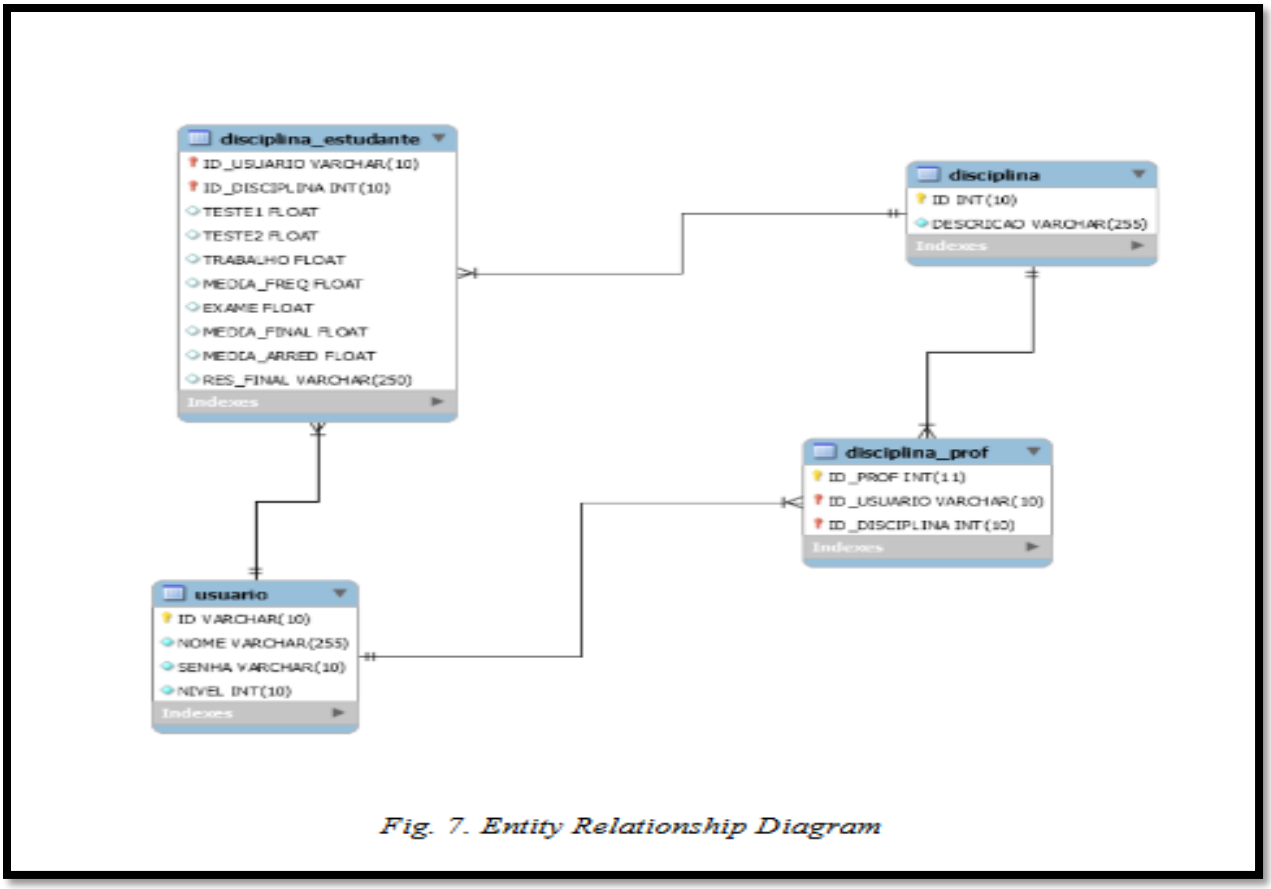
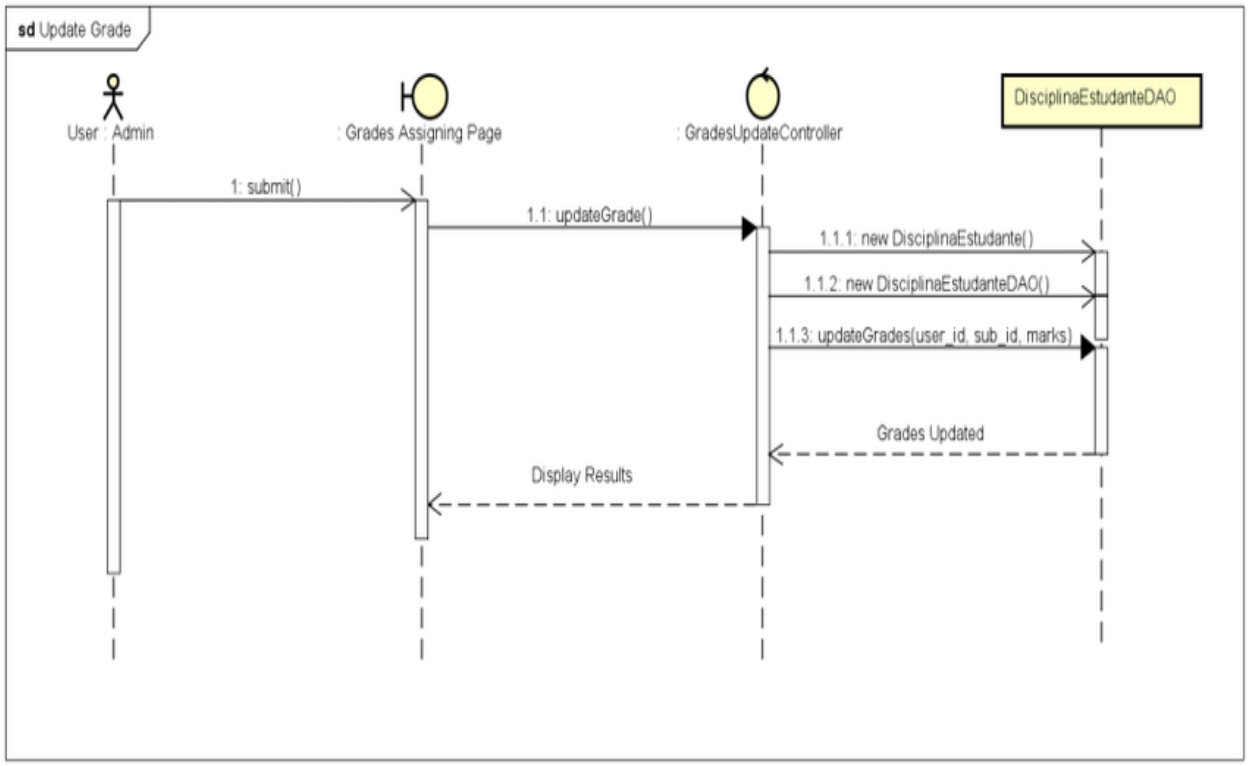


Fig. 7. Entity Relationship Diagram



11. Conclusions:

The present research was based on the computerization and the implementation of a sophisticated Web-Based Student Result Management System for the Catholic University of Mozambique. The main objective was to enhance and automate the management and declaration of students' results using a computerized system. A well-defined, efficient, controlled and managed information system or software based on web technology storing, processing and providing information through the internet. And the objectives were achieved by following a process model such as system analysis, design and system implementation. The system analysis was composed of two activities, requirement determination and structuring. The first activity focused on the collection of data or requirements through structured interview, work environment observation and by collecting procedures and other written documents. And the latter,performed the modelling of the collected data and processes, transforming it into UML diagrams with the aid of a UML modelling tool, Astah into a graphically understandable manner. Just as structured analysis uses DFDs (Data Flow Diagrams) to model data and processes, systems analysts use UML to describe Object Oriented systems, on which the current system is based. UML is independent of any specific programming language and can be used to describe business processes and requirements generally. Finally, the implementation or coding of the proposed system was based on the software architecture standard, MVC using Java programming language, which is based on the object-oriented paradigm.