Technical Report - **Product specification**

eDuca

Course:	IES - Introdução à Engenharia de Software
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Project abstract:	The Multi-School Student Management Platform is a system designed to enhance the management of multiple schools' student-related activities. It provides a centralized hub for students, teachers, and school administrators to efficiently manage and access student information, academic records, communication, and more. The key concept revolves around improving the educational experience for all stakeholders while ensuring data security, scalability, and user-friendliness.

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1 Introduction

This report presents the concept and vision for a web-based solution designed to revolutionize the way schools handle academic data.

The objective of this project is to create a platform that facilitates the management of grades, notes, exam dates, and related information for both teachers and students in a school environment.

Additionally, it will promote smooth communication between teachers and students.

2 Product concept

Vision statement

This system will be used for:

- Allowing teachers to efficiently input and publish grades, notes, and exam dates.
- Enabling students to access their academic information and track their progress.
- Simplifying the communication process between teachers and students regarding academic matters.
- Unify various schools within a single platform, promoting cooperation and improving the accessibility of academic data across diverse educational institutions.

Personas and Scenarios

Persona 1:

Name: Sara

Age:17

Profession:Student

Sara is an interested student and always wants to be up to date with messages that teachers can send.

She likes to plan her studies and for that she needs some way of knowing when there are tests or meetings.

Worried about her average to enter university, she likes to keep her grades from all her

subjects.

Persona 2:

Name:João

Age:47

Profession:Math Teacher

The teacher wants to publish the grades for his subject.

He also wants to warn students about the content that will be covered in next week's test.

As he is very busy, you need some way to know which days there are meetings and which days it is possible to book a test.

Persona 3:

Name:Carlos

Age:35

Profession:Platform Administrator

As the administrator of the platform he can add new schools,delete schools from the system and update them.

Persona 4:

Name:Ana

Age:47

Profession.School director/administrator

As the school administrator, when new students arrive, she adds them to the system.

To compare with other schools, it has access to the grades and statistics of students from the respective school.

Product requirements (User stories)

User Registration and Profiles:

This epic focuses on user registration and profile management.

User Stories:

- As a student, I want to create a profile with my personal information.
- As a teacher, I want to register and provide details about my educational background and qualifications.
- As a school administrator, I want to manage and verify user profiles within my school.

School Management:

This epic revolves around school management, including adding, removing, and updating schools in the platform.

User Stories:

- As a platform administrator, I want to add a new school to the platform with its details.
- As a school administrator, I want to update my school's information.
- As a platform administrator, I want to remove a school from the platform.

Student Enrollment and Records:

This epic deals with student enrollment, record management, and academic progress tracking.

User Stories:

- As a school administrator, I want to enroll students in my school and input their basic information.

- As a teacher, I want to update student records with grades and attendance information.

Attendance and Class Scheduling:

This epic covers class scheduling, marking attendance, and managing class sessions.

User Stories:

- As a teacher, I want to create and manage class schedules.
- As a teacher, I want to mark student attendance for each class.
- As a student, I want to view my class schedule and attendance history.

Communication and Notifications:

This epic focuses on communication between schools, teachers, students, and parents.

User Stories:

- As a teacher, I want to send notifications and updates to students and parents.
- As a student, I want to receive notifications about my academic performance and school events.
- As a school administrator, I want to broadcast important announcements to my school's community.

Report Generation and Analytics:

This epic involves generating reports and analytics to evaluate student and school performance.

User Stories:

- As a school administrator, I want access to analytics and reports on student performance and school metrics.
- As a teacher, I want to generate individual and class-level performance reports.
- As a student, I want to view my academic performance reports.

3 Architecture notebook

Key requirements and constrains

<Identify issues that will drive the choices for the architecture such as: Will the system be driven by complex deployment concerns, adapting to legacy systems, or performance issues? Does it need to be robust for long-term maintenance?

Identify critical issues that must be addressed by the architecture, such as: Are there hardware dependencies that should be isolated from the rest of the system? Does the system need to function efficiently under unusual conditions? Are there integrations with external systems? Is the system to be offered in different user-interfacing platforms (web, mobile devices, big screens,...)?

E.g.: (the references cited in [XX] would be hypothetical links to previous specification documents/deliverables)

There are some key requirements and system constraints that have a significant bearing on the architecture. They are:

- The existing legacy Course Catalog System at Wylie College must be accessed to retrieve all course information for the current semester. The C-Registration System must support the data formats and DBMS of the legacy Course Catalog System [E2].
- The existing legacy Billing System at Wylie College must be interfaced with to support billing of students. This interface is defined in the Course Billing Interface Specification [E1].
- All student, professor, and Registrar functionality must be available from both local campus PCs and remote PCs with internet dial up connections.
- The C-Registration System must ensure complete protection of data from

unauthorized access. All remote accesses are subject to user identification and password control.

- The C-Registration System will be implemented as a client-server system. The client portion resides on PCs and the server portion must operate on the Wylie College UNIX Server. [E2]
- All performance and loading requirements, as stipulated in the Vision Document [E2] and the Supplementary Specification [15], must be taken into consideration as the architecture is being developed.>

Architetural view

→ Discuss architecture planned for the software solution.

→ include a diagram

Module interactions

→ explain how the identified modules will interact. Use sequence diagrams to clarify the interactions along time, when needed

→ dicuss more advanced app design issues: integration with Internet-based external services, data synchronization strategy, distributed workflows, push notifications mechanism, distribution of updates to distributed devices, etc.>

4 Information perspetive

<which concepts will be managed in this domain? How are they related?>

<use a logical model (UML classes) to explain the concepts of the domain and their attributes>

5 References and resources

<document the key components (e.g.: libraries, web services) or key references (e.g.: blog post) used that were really helpful and certainly would help other students pursuing a similar work>