

# WEB PROGRAMMING

## Evidence of Professors' Activities

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# Outline

- Introduction
- Reference Framework
- Methodology
- Proposal

# 1. Introduction

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# Problem Definition

According to the "[Reglamento de Carrera y Escalafón](#)" of Yachay Tech University, academic staff must comply with the following activities:

- a) Of teaching.
- b) Research.
- c) Relationship with society.
- d) Educational management.

Therefore, at the end of the semester, a report of the activities carried out by the professor must be generated, and it must be supported by the corresponding evidence.

# Justification

Currently, the collection of evidence is carried out manually in Google Drive. Additionally, the final report of each teacher is made based on a Google Forms. However, this makes this process **difficult** and **inefficient**.

For this reason, the development of a **web application** that allows automating these processes is of great interest.

# Goal and Scope

- Allow the automation of processes related to teaching activities, such as evidence collection, and report generation through the development of a web application for Yachay Tech University.
- Develop a responsive web application that allows the streamlining of processes related to the registration of teaching activities for both for professors and people in charge of supervising these processes.

## 2. Reference Framework

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# Web Technology

Web technology refers to the various tools, technologies, and protocols used for creating, publishing, and maintaining websites and web applications on the World Wide Web. It encompasses a wide range of components, including markup languages (e.g., HTML, XML), programming languages (e.g., JavaScript, PHP), web servers, databases, web frameworks, and networking protocols (e.g., HTTP).



# Web Applications vs Traditional Applications

## Web Applications:

Web applications are software programs that run on web browsers and are accessed over the internet. They are typically developed using web technologies such as HTML, CSS, and JavaScript. Web applications are hosted on web servers and can be accessed by users from any device with an internet connection and a compatible web browser. Examples of web applications include online shopping sites, social media platforms, and web-based email clients.

# Web Applications vs Traditional Applications

## Traditional Applications (Desktop Applications):

Traditional applications, also known as desktop applications, are software programs that are installed and run directly on a user's computer or a local network. They are designed for specific operating systems (e.g., Windows, macOS) and are installed and executed locally, without requiring an internet connection. Examples of traditional applications include word processors, photo editing software, and video games.

# Background

Sistema web de gestión de evidencias en las unidades de docencia, investigación y vinculación de la ESPAM MFL

- URI: <http://repositorio.espam.edu.ec/handle/42000/478>

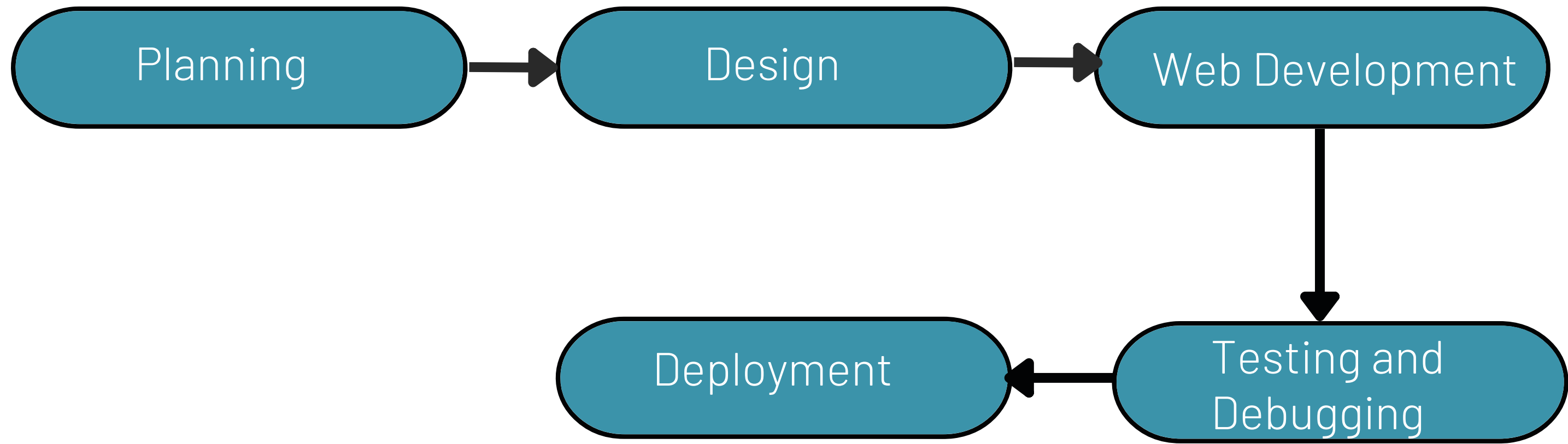
Evidence Control System for the process University Degree accreditation

- DOI: [10.18502/keg.v1i2.1496](https://doi.org/10.18502/keg.v1i2.1496)

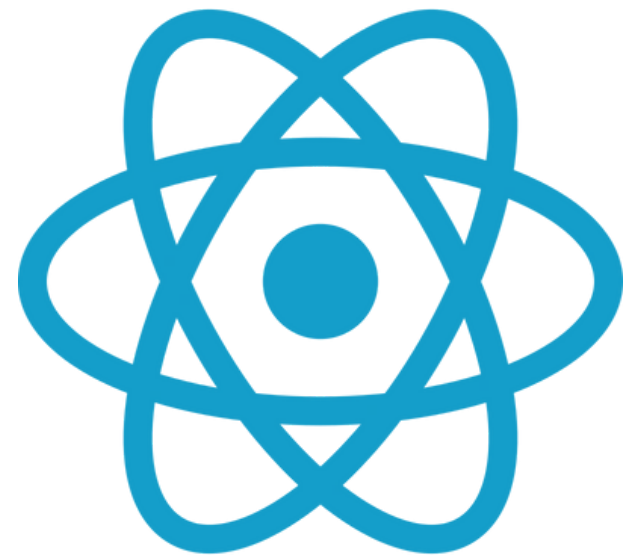
# 3. Methodology

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# Flow Diagram



# Web Technologies



Frontend

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**django**

Backend

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Database

## 4. Proposal

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# SAED

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Sistema Académico  
de Evidencia Docente





# SAED: Description

- SAED is a web application designed for teachers at Yachay Tech University.
- It allows teachers to record and manage their academic activities conveniently.
- SAED serves as a centralized system for teachers to maintain a comprehensive record of their professional endeavors.
- Teachers can use SAED to document in-class evidences, track research projects, collaborations, and community engagements.
- SAED simplifies the process of evidencing and reporting activities.

# SAED: Functionalities

## Functional Requirements:

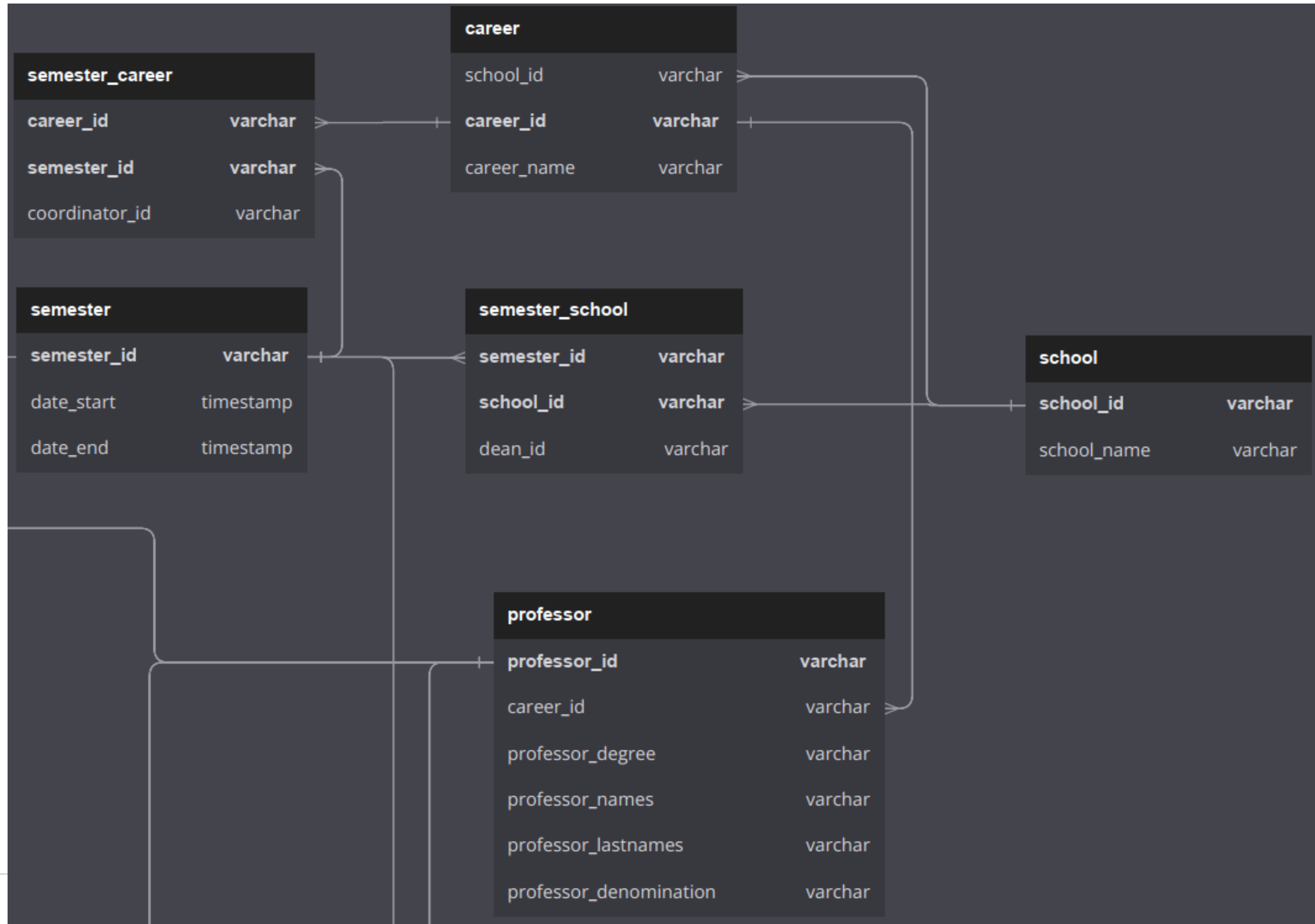
- User Registration and Authentication
- Dashboard
- Activity Logging
- Activity Categories and Tags
- Attachment Upload
- Activity Search and Filtering
- Reporting (PDF Generation)
- Access Control and Permissions

# SAED: Functionalities

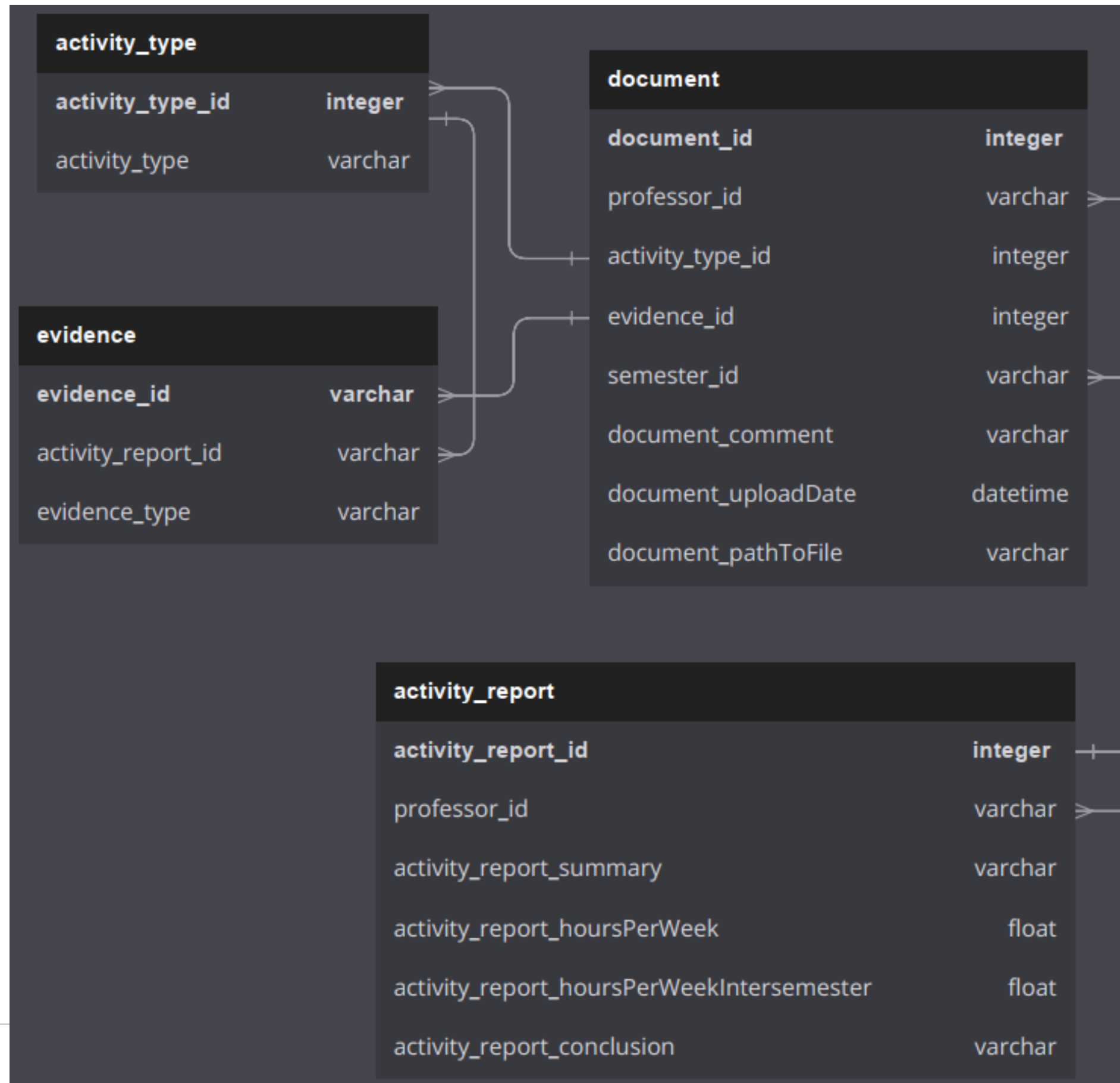
## Non-Functional Requirements:

- Usability
- Performance
- Security
- Reliability
- Scalability
- Compatibility
- Integration

# SAED: Data Model



# SAED: Data Model



# SAED: Data Model

D1	Impartir clases, seminarios, talleres, entre otro
D2	Planificar y actualizar contenidos de clases, seminarios, talleres, entre otros
V1	Impulsar procesos de cooperación y desarrollo;
V2	Prestar la asistencia técnica, de servicios especializados, así como la participación en consultorías que generen beneficio a la colectividad;
I1	Diseñar, direccionar y ejecutar proyectos de investigación básica, aplicada, tecnológica y en artes, o proyectos de vinculación articulados a la investigación, que supongan creación, innovación, difusión y transferencia de los resultados obtenidos;
I2	Realizar investigación para la comprensión, recuperación, fortalecimiento y potenciación de los saberes ancestrales;

# SAED: Data Model

## UserAccount

email	varchar
first_name	varchar
last_name	varchar
is_active	bool
is_staff	bool

# SAED: Data Model

## Reports Path

- SEM/SCH/PRO\_ID/REP/DOC\_NAME.PDF
- SEM022022/ECMC/132198198/REP/Report.pdf

## Evidences Path

- SEM/SCH/PRO\_ID/ACT\_TYPE/EVI\_TYPE/DOC\_NAME.PDF
- SEM022022/ECMC/132198198/DOC/D1/Horario.pdf



# SAED: Prototype

# SAED: Deployment

- **how to install and use**

## 5. Test Plan

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# General Description

The purpose of this test plan is to outline the approach and strategies for testing a web application. The goal is to ensure the application's functionality, usability, performance, and security meet the desired standards.

# Test Types

## Functional Testing:

- Test the core functionality of the web application, including navigation, forms, user authentication, and data processing.
- Verify that all features and functionalities work as intended, following the requirements and specifications.

# Test Types

## Usability Testing:

- Evaluate the user interface (UI) of the web application.
- Assess the ease of navigation, clarity of labels and instructions, and overall user-friendliness.
- Identify any usability issues, such as confusing layouts, slow response times, or non-intuitive interactions.

# Test Types

## Security Testing:

- Assess the security measures implemented in the web application to identify vulnerabilities or potential risks.
- Conduct tests such as penetration testing, authentication testing, authorization testing, and data protection testing.
- Verify that user data is encrypted, access controls are properly enforced, and sensitive information is protected.

# Test Types

## Database Integrity Testing:

- Validate that data entered or updated through the web application is correctly stored in the database.
- Test data validation rules and constraints to ensure that data integrity is maintained.
- Verify that data relationships (e.g., foreign key constraints) are enforced properly.



**Thanks for your attention**