

System Requirements Specification Document

Kenan Karavoussanos 1348582

Marc Karp 1356562

Preshen Goobiah 1355880

Shaylin Pillay 1060478

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1 Introduction

1.1 Purpose

The purpose of this document is to provide a specification for the Online PGA (Post Graduate Application) Approval System for the School of Electrical and Information Engineering. This document will serve as a base for consideration of further design and development of the System. Additionally this documentation will provide initial elicited business rules.

The purpose of this project is to provide a centralised and paper free platform to replace the current paper-based approval process.

1.2 Document Conventions

This document will evolve with the project, and as such the document will be released in several iterations. Feedback and changes will be provided for each iteration and each section of this document is assumed to hold true for each release.

1.3 Intended audience and reading suggestions

The software requirements document at this stage is intended for:

- Developers who can review system requirements and consideration for further design and development of the system.
- Clients who can verify the scope and requirements of the project.

1.4 Project Stakeholders

School of Electrical and Information Engineering:

- Mrs. Mumtaz Adam The post graduate officer (PGO).
- Prof. Ling Cheng The post graduate coordinator (PGC).
- Supervisors Various academics within the school.
- Prof. Ekow Otoo
- SE Team 5

1.5 Problem Statement

Currently, the School of EIE uses a paper based method for the approval of post graduate applications. The primary reasons for this, is as a result of academics not being trained on the SIMS system and paper trail to be kept for transparency purposes. This paper based system involves manual filling and

can result in misplacement of documentation. Supervisors are contacted to review applications when the PGO physically sees them or sends an email. The turnaround time of approval of a PG application, the physical space manual filing takes up and the risk for misplacement of documents are all issues with the current process. In order to alleviate these issues a web based system will be used as a central repository for all applications to the School of EIE and manage the process of approval within the school.

1.6 Project Scope

This project is intended to digitize the current (as of August 2018) paper-based Post Graduate Approval Process for the School of Electrical and Information Engineering at the University of the Witwatersrand, Johannesburg. Further changes to the application process will be discussed and considered in future and if approved, will be added to this document.

1.7 References

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2 Overall Description

2.1 Product Perspective

This system is self-contained and independent of any other systems or products available on the market.

2.2 Product Features

The basic version of the system should provide:

- Applicant document repository and management.
- Interface for the upload of Application related documentation.
- Interface for the PGO to select a Research Group or an identified Supervisor
- Automatic Email Notification for Users.
- Bespoke views for each user class.
- Interface for the verification of Application documentation.
- Application Summary.
- Minimum application requirements display.
- Access permission management for each system view.

2.3 User classes

- PGO - The Post Graduate Officer who deals with the administration of each Application
- Supervisor - The Research Group or Supervisor who evaluates whether they are willing to supervise the Applicant based on their Application.
- PGC - Post Graduate Coordinator who verifies that all university/faculty/school rules have been followed and acceptance criteria met. With consideration from the Supervisor and aforementioned rules and acceptance criteria signs off the final decision to accept or reject the application.

2.4 Operating Environment

This proposed system is platform independent as it is a web application.

2.4.1 Software Requirements

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2.4.2 Hardware Requirements

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2.5 Requirements

- The System should allow a PGO to capture PG Application supporting documents.
- The System should allow a PGO to select a Supervisor or Research Group to forward the Application to.
- The System should allow for email notification to Applications for a Supervisor or Research Group of pending Applications to review.
- The System should have custom views pertaining to each Actor of the System.
- The System should enforce validation and verification on all data within the system.

3 System Features

- Document repository and management

Description: Upload Application document and supporting documents to a centralized repository

Requirements:

The System should allow a PGO to upload PG Application and supporting documents.

- Interface for the PGO to select a Research Group or an identified Supervisor

Description: PGO selects a correct Research Group or Supervisor for a PG application

Requirements:

The System should allow a PGO to select a Supervisor or research group to forward the Application to.

- Document verification system

Description: PGO verifies and labels application documents.

Requirements:

The system should allow a PGO label a document according to type.

The system should facilitate a means to verify that the necessary documents have been uploaded.

- Automatic Email Notification for users.

Description: User is notified via email of pending tasks to complete for the PGA approval system.

Requirements: The system should allow for email notification to a Supervisor or the PGC of an application to review. The system should allow for email notification to the PGC when an accept or reject decision on an application has been made by a supervisor. The system should allow for email notification to a PGO when a final decision has been made by the PGC.

- Bespoke views for each user class and Access permission management for each system view

Description: Allow different users to access the system

Requirements: The System should have custom views pertaining to each Actor of the System. The System should enforce validation and verification on all data within the system.

- Application minimum requirements description.

Description: The minimum requirements for application approval shall be displayed as a reminder for the users when considering an application

Requirements:

The system shall display minimum requirements for each individual application type at multiple points in the application review process.

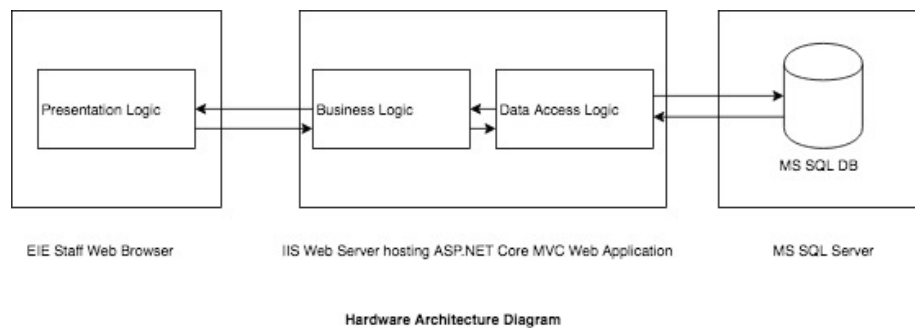
- Application Summary

Description: An application summary will be generated and displayed for ease of use for different users in the performing of their respective tasks.

Requirements: The system shall display important application information (to be determined in future) when viewing an application.

4 Proposed Design

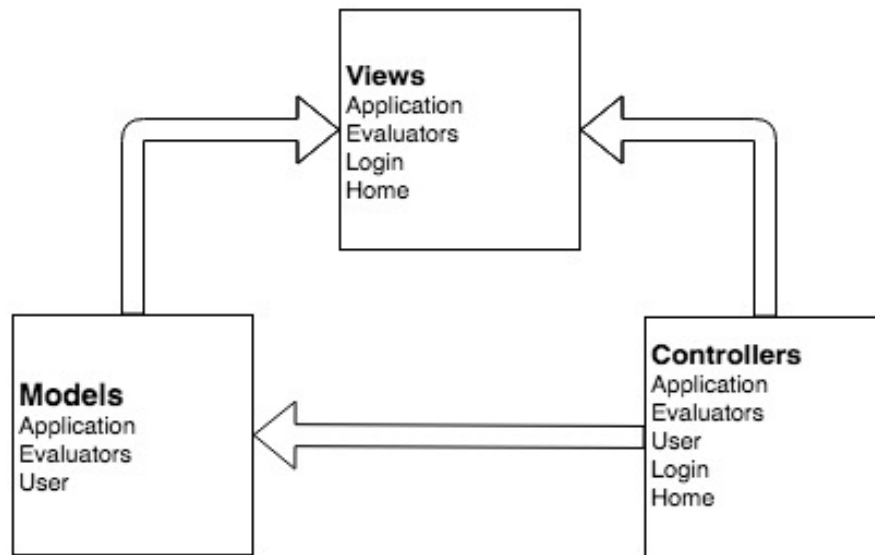
4.1 Proposed Hardware Architecture



Hardware Architecture Narrative

The proposed hardware architecture includes; a MS SQL Server as the Database server, Internet Information Services (IIS) web server as the web server, and the EIE staff web browser

4.2 Proposed Software Architecture

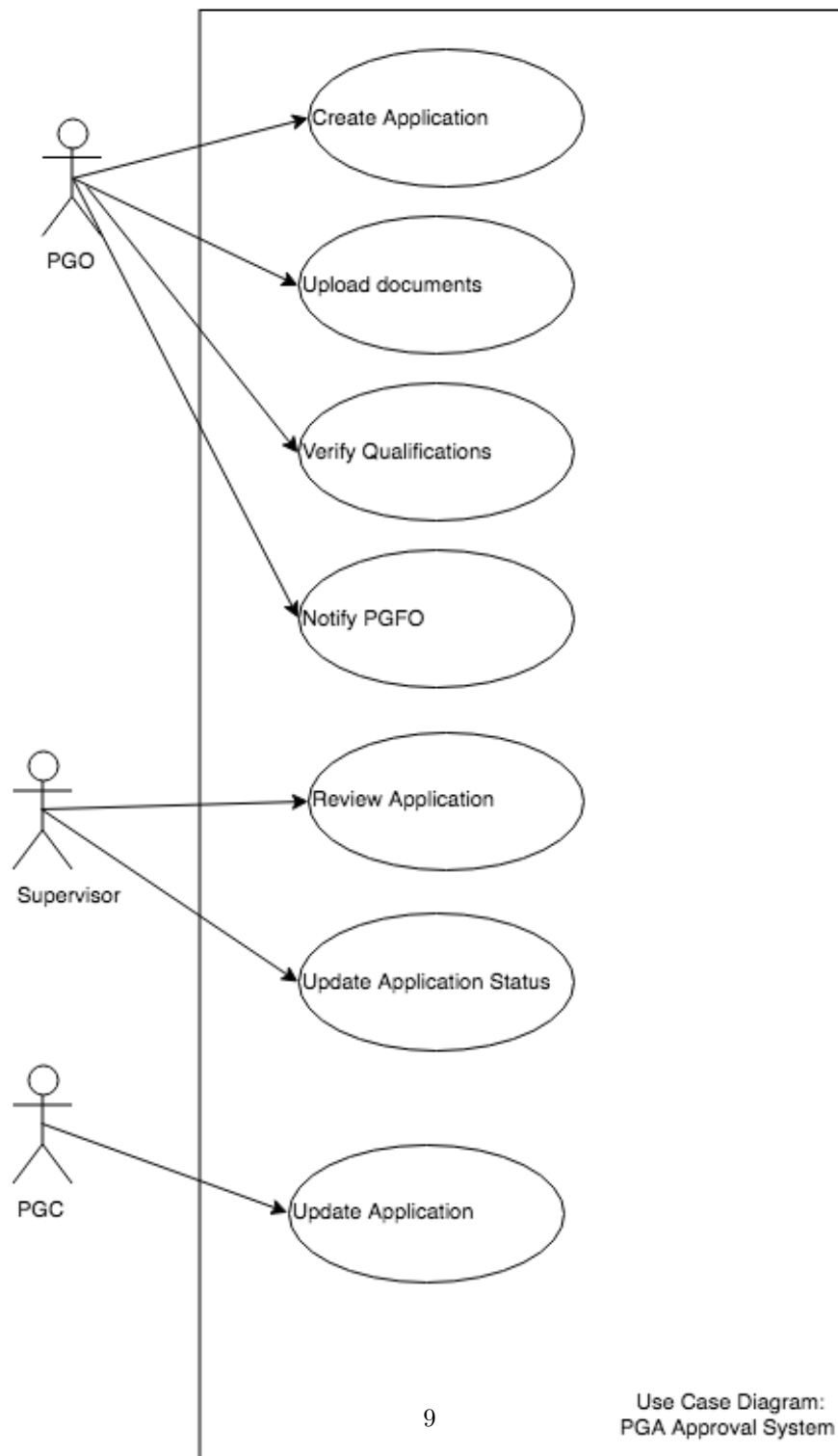


Software Architecture Diagram

Software Architecture Narrative

The proposed software architecture is a ASP.NET Core web application, following the MVC design pattern.

4.3 Use case model



4.3.1 Use case narrative

A PGO downloads an application from SIMS. The application with documents is then uploaded onto PGA Approval System and summarised information from documents entered into the system, creating a final Application. Once uploaded, the PGO then verifies all documentation for the relevant Application. The PGO will additionally enter in Supervisors(s). An email will then be sent to Supervisor(s), notifying them to review the Application. The Supervisor will review the Application and make a decision on whether to Accept or Reject the Application with comments. The PGC will then be notified that a Supervisor has made a decision and is pending their approval. The PGC notes the Supervisor's decision, reviews the documentation and makes a PGC decision. The PGO is then notified and opts to send the Application to the PGFO for final Approval/Rejection.