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| A picture of a winding road and trees  SAS  Project documentation | Abstract  This document shows a detailed documentation and project proposal in response to mini  By Brian Msane  Together with: Neliswa Maziya and Thandolwethu Nhlabatsi; 202203673, 202203763, 20202 |

Ail Academe Services Documentation

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# Project overview

* 1. Introduction

Often times when a student finishes writing their form five external examination they tend to aspire or even project themselves as university students. Unfortunately, between this fantasy and the reality lies a hurdle which is the application process. This process has so many problems which are: unawareness of application dates, misinformation about programs they want to pursue, lots of money spent, to name a few. This information gap can lead to uninformed decision, impacting their future careers and overall satisfaction during the course of their study. The need for a centralized system to assist student in making well-informed decision is apparent.

* 1. Problem identification

High school graduates encounter several critical issues during the university application process and those includes the following.

1. Limited understanding of available programs: Students often select programs based on advice from others, media influence, or long-held aspiration without fully understanding the program content, admission requirements, or career prospects. This can result in dissatisfaction and hinders career progression. In often times, students end up dropping out because they are required to do things they are not passionate about and their performance marks drop drastically.
2. Costly application procedures: The traditional application process requires students to physically visit multiple universities and colleges to gather information and submit applications. This methods is time-consuming, expensive, and inefficient, especially for those with limited financial resources. Also, the universities need more human labor to handle this process and that is ultimately costlier.
3. Unawareness of application timeline and costs: Many students are not informed about application opening and closing dates, acceptance periods, and costs associated with the entire process in different institutions. Many miss opportunities due to this.

These challenges not only necessitate a centralized system but also highlight a systematic problem affecting students’ successful transition into tertiary education. The lack of accessible, comprehensive information and streamlined processes necessitate a solution to support students during this critical phase of their lives.

* 1. Problem objective

The proposed system aim to alleviate the mentioned issues by building a very informative, user-friendly, and integrated system. The primary objective is to provide comprehensive program information to applicants. Detailed descriptions, prerequisites, admission criteria, curriculum details and potential career paths associated with each program will be provided. Further, we aim to simplify the application process by creating centralized, one-size-fits-all online platform which allows students to apply from the comfort of their homes to reduce physical visits and travelling costs. Lastly, to mention a few of our objectives, we aim to provide the awareness of application timelines and costs associated with applying.

* 1. Contribution
  2. Stakeholders

Project stakeholders are individuals or organizations who are actively involved in the project, or whose interests may be positively or negatively affected as a result of project execution or successful project completion. The stakeholders involved in this project include:

* Tertiary Institutions: Universities, colleges and technical institutions who are responsible for managing admissions.
* Applicants: Students applying for admission to undergraduate programs.
* Government bodies: Agencies seeing education in Swatting, responsible for policy formulation and data collection.
* Sponsors and funders: Private organizations or individuals looking to sponsor students based on specific criteria.
* SAS development team: The team responsible for designing, implementing and maintaining the system.

# Requirement Analysis and gathering

* 1. Requirement gathering techniques
  2. Sample interview questions
  3. Sample questionnaire
  4. Functional and non-functional requirements
  5. Feasibility Study
     1. Technical feasibility
     2. Economic feasibility
     3. Schedule feasibility and scope

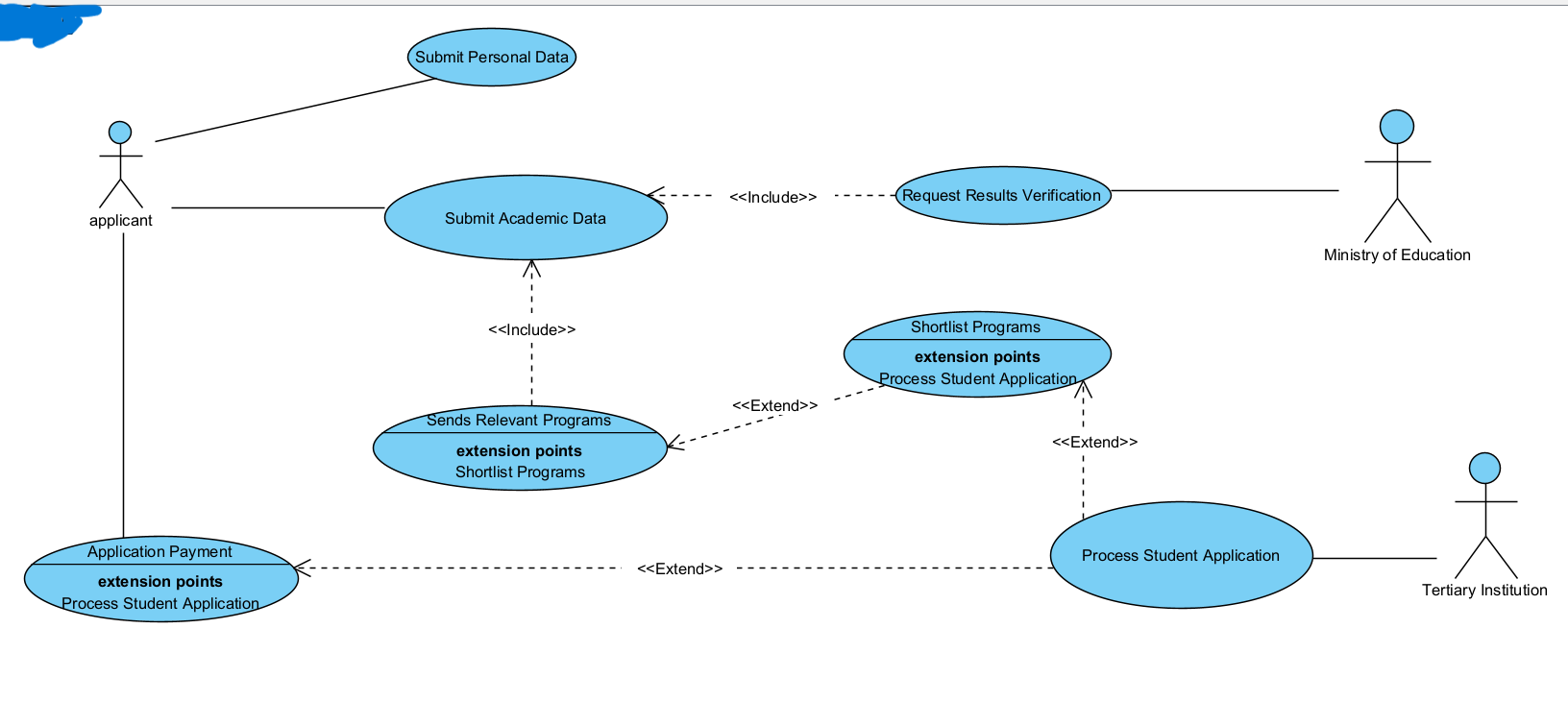
# Solution Modeling

* 1. Use case diagrams

From a high-level, the system can be depicted by a use case diagram which is a system modeling diagram which shows the system from the view of the user and is independent of technical or implementation details and jargon. It makes use of actors, use cases, and relationships. The actors are considered to be entities external to the system which play particular role to the system. Also, relationships shows how an entity relates to a use case, how entities relate to each other, or how two use cases relate to each other. The use cases can be perceived as a process within the system.

Below we have the SAS use case diagram which shows three entities which are: 1) applicant, 2) ministry of education, and 3) tertiary institution. We have six major use cases and the relationships are as thus.

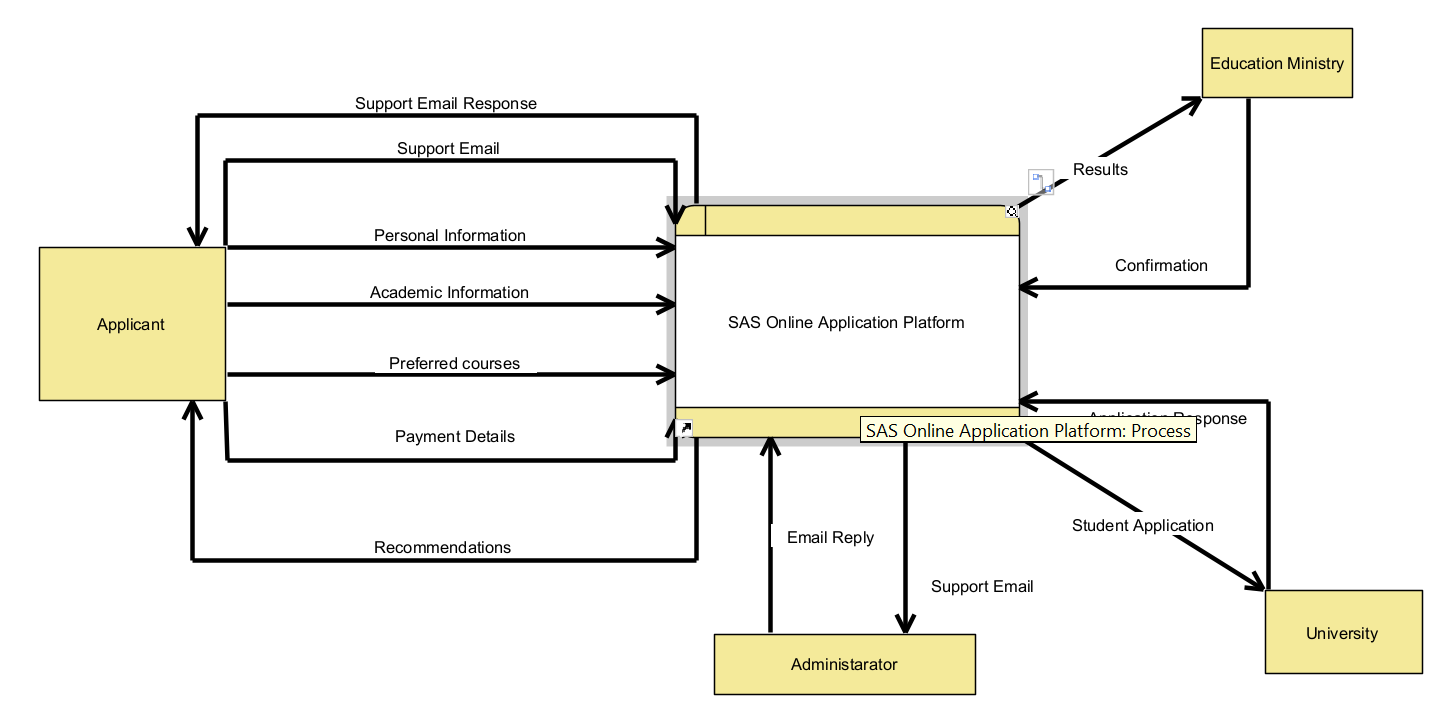
* The *applicant* communicates with **Submit Personal Data**
* The *applicant* communicates with **Submit Academic Data**
* Once the applicant has sent the academic data we need to verify them with the ministry of education we the use case **Submit Academic Data** has an extend relationship with **Request Results Verification**.
* Also, once we have the academic information of the applicant we need to give them our recommendations therefore there’s an include relationship between **Submit Academic Data** and **Send Relevant Programs**
* Once the high school graduate has given us a subset of the recommendation as his/her preferred programs we need to shortlist them to have the top three programs to use in the application process. Therefore, there is an extend relationship between Send Relevant Programs and Shortlist Programs
* There’s an extend relationship between Shortlist Programs and Process Student Application
* The graduate needs to pay for the application there he/she communicates with the Application Payment use case
* After paying we can then process the application therefore the Application Payment use case has an extend relationship with the Process Student Application use case
* Once processed, the application needs to be sent to the tertiary institution therefore the Process Student Application use case communicates with the student



* 1. Context Diagram

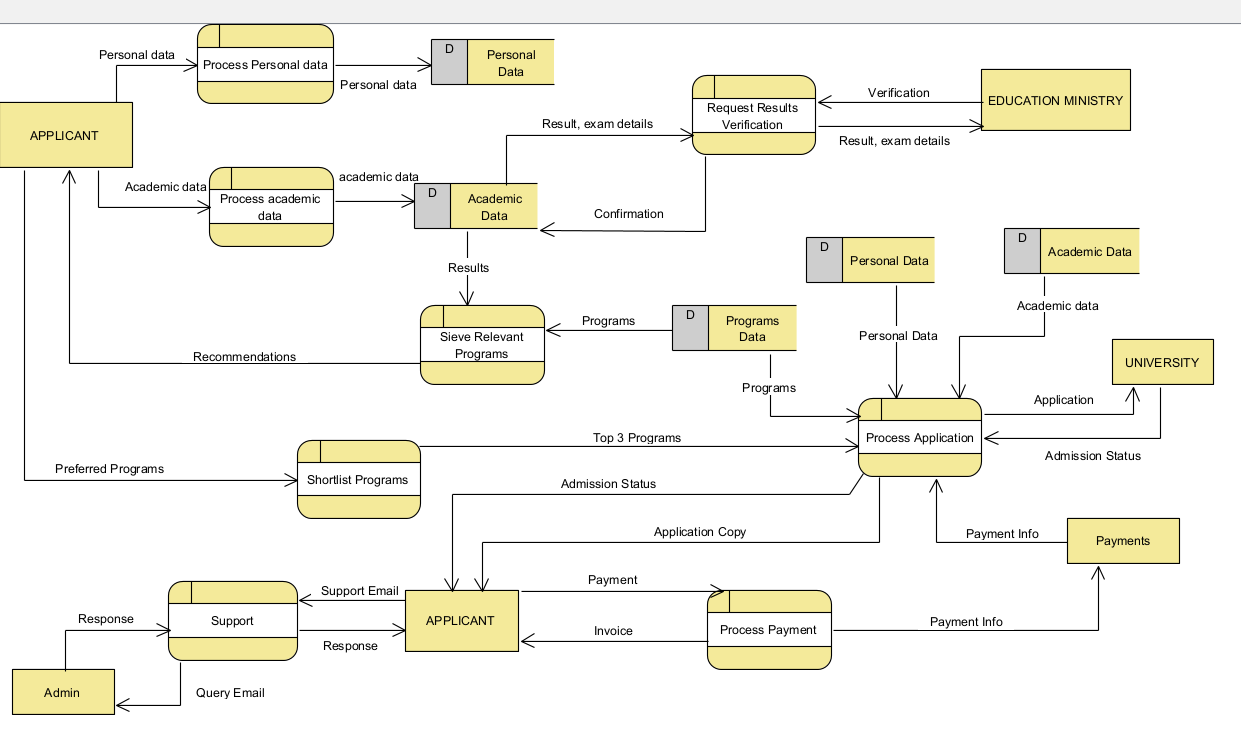
Another diagram which can be used to model the system is a dataflow diagram. This shows the movement of data within the systems and when drawing it we start from the special level called level 0 or the context diagram. This is a special in a way such that it depicts the entire system as just one process, labelled process 0, which can be exploded further in the other levels of dataflow diagramming. This ensures a top down approach to system modelling while making sure that even non-technical users can understand the system.

The context diagram is concerned about the major external entities and major data flows as compared to processes and data stores. Below we have the context diagram of our proposed system.



* 1. Level 1 data flow diagram

Exploding the process in the context diagram into sub-processed within the system gives birth to the level one diagram.



3.4 Data dictionary