# Introduction

This project will be an SMP (Stable-Matching Problem) - Targeting the means by which students are allocated to any given area and supervisor for their Final Year Project (FYP) within the University of Malta. Being an activity, which takes place annually, there already exists a manual system responsible for allocation, however improving upon the existing system by means of implementing automation into the process was deemed appropriate.

In the previous system some inefficiency proved prevalent due to the manual nature of the process. The new system aims to reduce such inefficiencies as much as possible by means through automation. Data will be dynamically stored, in order to be called freely when required. As a result, allocating students to the highest preference available will be simplified by means of replacing manual actions with computational processes.

# Project Definition

The project defined comprised of the process that takes place each scholastic year, being the allocation of students to their respective Final Year Project (FYP). The process consisted of all the steps involved in order to assign students to an area that has been chosen as one of their six preferences. In contrast to previous years, this project strives to eliminate tasks being carried out manually, and instead will introduce automation within the allocation process.

With regards to allocation, three main roles are involved, students, supervisors, and administrators, each having role specific actions distributed amongst them accordingly. Students primarily decide which areas suits them best in order to develop an optimal FYP. Supervisors are responsible for the creation and submission of areas that students may choose as preferences. Administrators serve the purpose of ensuring that following allocation completion, results are published at any time deemed suitable by the appropriate authority.

In relation to the previous process, the submission of areas by supervisors had to be manually compiled, with one form for each area. This meant that if any given supervisor had many areas, each area had to be compiled independently. Moreover, the allocations would be performed manually, demanding significant attention to confirm that all information had been employed without error. This project aims to eliminate any extra processes by means of authentication and validation through automation. As a result, this allows the allocation process to be carried out without having to perform any manual checks on the data provided. It is important to note however, manual checking will still remain available, to be optionally selected. This is to be done as means of providing accountability and auditability to parties that may have doubts as to the accuracy of allocation.

An additional advantage of the automated system will be that all the operations will take place on a single portal. This allows students to submit their preferences, supervisors to create areas for the FYP, and administrators to publish results to all parties involved, all in one place. Data may be appended or removed with proper authorization; however, this is subject to the circumstances at the time of deletion or editing. By this it is mean that supervisors are allowed to edit the areas, while students can only view them. Students are allowed to edit their preferences but cannot change the titles. Also, by circumstances it is to be understood that if students have already begun to choose and submit their preferences, supervisors may not subsequently edit or delete any of their areas, this is to ensure no complications and push the need for confirmation that all data is correct before beginning the submission and allocation process.