# 5.Business Requirements

## 5.1 Business Process Description

The current method with regards to assigning students to the appropriate FYP is in working order and has been utilised over a significant amount of years. Despite such, strong evidence suggested the need for a more efficient process, within the capacity of workload and time taken for results to be delivered. The main purpose of allocation is to optimally assign students to their top preferences, with alternately chosen preferences being assigned for those students whose preferred supervisor has had their quota met. Therefore, having an optimal algorithm is necessary, to reduce human-error and the interference possible external factors. There exist three significant external factors in the current system:

1. When entering existing supervisor areas.
2. Recording student details and their preferences.
3. Performing the allocation of students to supervisors.

After the student FYP preferences submission deadline has been met, the allocation is performed and agreed upon by the appropriate authority, with allocations subsequently sent to students to notify them of the area and supervisor to which they have been assigned. This is to be ideally done in a minimal timeframe, with the workload potentially slowing the process, in the case that an error occurs in the aforementioned three stages.

Therefore, the new system must target the alleviation of inefficiencies and the interference of external factors. This to be done by means of presenting a reliable process which is user-friendly, and offers ease of use, whilst more importantly delivering assured accuracy with regards to allocations, in less time and with less effort. This subsequently renders a potential problem faced annually into a job that may be performed with confidence in the results produced.

## 5.2 Process Used to Elicit Requirements

The Initial meeting was the most vital when dealing with familiarization of the FYP allocation system. The supervisors assigned to this project, aided in the understanding of functionality required, along with the clarification of any uncertainties that may have been prevalent. The task to begin with, was the highlighting of areas that would benefit from a change and what work had to be done. Employing the distribution of tasks in a team-based environment, aided with ensuring that decisions were thoroughly discussed and taken with assured quality. This type of environment proved to be an advantage, as a means of ensuring quality injected throughout the process was always up to a certain standard.

After the initial meeting concluded, low-fidelity prototypes were constructed, to be presented during the next meeting with the supervisors. Apart from such, each member was assigned a specific task, along with three forms needing to be collected, each form being part of the current system. These were to be collected from the secretaries being, form A (student FYP preferences form), area submission form (used by supervisors) and form B (Project Definition Form).

Initially, google drive served as the primary storage of resources, containing everything that was to be included in the project, having been made accessible to every member of the team. This allowed for a means of working remotely and sharing resources, in the initial phases of development. It is important to mention stages following the initial phases, saw a shift to version control software as a best practice for development.

The task is uploaded to the drive

Modifications are made

A task is carried out

The task is revised by the team

## 5.3 List of Requirements

The requirements for the FYP Allocation system are as follows:

1. A stand-alone web-based interface
   1. It is to employ a user interface similar to that utilised by the University of Malta.
   2. Sign in is to be restricted to University of Malta email addresses.
   3. After sign-in, users will be redirected to either a student, supervisor, or administrator portal.
2. Student portal is to include tasks relating to FYP preferences.
3. Supervisor portal must include the submission of proposed FYP areas.
4. Each area is to optionally have a quota along with each supervisor having a global quota. It is important to note that if an area quoted is opted for, then each area will have a quota independent of other areas linked to the same supervisor.
5. The administrative portal is to contain the option to import a list of students or supervisors, who are to be involved in the allocation. Also, the portal allows for the performing of allocations, as well as an extensive verification of results, with the option to publish when all allocations are complete.
6. The order of allocation is firstly sorted by average mark, and if two or more students have equal averages, date and time of submission is the deciding factor. Therefore, whoever submitted the preferences earliest is the first to be allocated amongst the students with equal averages.
7. One student can only be allocated to one supervisor and can only choose any given supervisor once when submitting preferences.

For each segregated portal, only the authorised functionality for each user role is visible. This means that in the case that a student logs in, they will not be able to perform supervisor tasks, such as the submission of an area.

In the student preferences form, validation is required to prevent a student from entering the same supervisor for more than one preference.

For supervisors and areas, if the quota for a supervisor is reached, and no area quota is specified, then the areas associated with that supervisor are no longer available. Also, the same may be said for the opposite case, with all area quotas being met rendering a supervisor no longer available.

When allocating, if any given student has a first preference which has not been assigned thus far, then the chosen supervisor and area will be subsequently allocated to that student. If more than one student chooses the same first preference, the average mark and time of submission for each student, will ultimately decide who gets allocated first. It is important to note that, if the chosen supervisor or area quota supports both students, then both will be allocated to that supervisor. For other students, the algorithm will look through each of their preferences until an available preference is found. Lastly, if no preference for any given student is available, then it has been stipulated that an option should be made available to allow for the manual allocation of remaining students to supervisors who are still available.