2   How to Choose a Project

To choose a proper topic is the first step in doing your project. Usually, according to their procedures, the school/department,where you are studying, publishes a list of project topics at the beginning of every semester/year. Different schools, however, follow different approaches in publishing this list. Some publish the list, which only includes the project topics, some others allow every supervisor to publish their own list, some publish the supervisors list alongside their related projects, and yet some publish the list with a brief explanation of the problem area.

Regardless of whichever of these approaches is the case, almost all schools give an opportunity to the students to suggest their own ideas and topics for their final year projects. However, whether the schools accept the suggestion or not depends on the criteria that they consider in their proposal acceptance process. In the following sections, the project selection task will be discussed in detail. In this discussion two main cases, namely, to choose form a list or to suggest your own topic, will be explained. In addition, a method will be provided that enables you to choose your project objectively and to eliminate the subjectivity as much as possible. Moreover, although the topic selection is the main theme of this chapter, a section on choosing a supervisor has been provided for thesituations that it is applicable.

2.1   Choosing a Topicfrom the Project List

Like many other activities, usually, the first stepsof a project are very crucial. In your final year project, the first step is to choose your project topic. It is very important to dedicate a proper amount of time in order to make your decision. Bear in mind that you have to live with your project for a semester or in most cases for a year, so it is better to choose a topic, which is truly of your interest. Equally important, do not forget that you should be wise enough to choose a topic that you can accomplish. Therefore, you should be as honest and frank with yourself as possible.

Sometimes, the supervisor who is supposed to supervise you may know your background and advise you to do not take the project that you have selected and choose another one instead. In the majority of cases, it is better to take this kind of advice. Indeed, if you could not strongly defend your suggestion and to convince your supervisor that you would be able to accomplish the project, it would be much more wise and safe if you reconsider your proposal and change your topic.

Below you can find a general guideline that you can follow. Experience has shown that it works fine.

> **Tips on choosing a project topic**
>
> - Study the topics carefully and thoroughly. This is important because if you miss a topic that can be suitable for you, one of your classmates may take it. Although this is not a competition per se, but the projects assignment cannot avoid of applying some sort of prioritization procedures.
>
> - Consider the harmony between the heart and the brain!
>
> - Choose a topic that is attractive but at the same time you think that it is doable. This is important to understand that no matter how much the topic is attractive at the end of the day if you do not deliver its minimum requirement you cannot receive a pass.
>
> - Choose among the topics of a supervisor(s) with whom you feel that you can comfortably communicate.
>
> - Choose more than one topic to have more flexibility; three is a good number, then!

Before having further discussions on the case, it is worth it to notice that you can decide on your final project, intuitively, which means without investigating any fact and factor and simply by following your desires and feelings. However, you will be lucky if it comes out as a right decision. Nevertheless, if you do not want to take this risk,and then follow a systematic approach to make your decision. In order to show youhow to follow a systematic approach to select your final year project, let us consider an example.

Suppose that you have chosen three project topics, among 30 ones that are availableand you have prepared a short list of which, without any prioritization, as below:

1. An Speech to Text System
2. AnAsset Management System
3. A SMS Cryptographer

Assuming that all three are open to you to choose from, how can you prioritize this short-list? Obviously, the above selection shows a very broad boundary of desire. In fact, they have been deliberately selected to be so in order to show you the important parameters that you should take into account when you make your decision. Moreover, later in this section, you will find out that each one of thoseprojects needs different levels of skills and requires knowledge of different areas. Now, you have to decide how to prioritize this short list.

First, you should consider that these projects need different levels of programming and technical skills. In addition, they need different levels of knowledge ofother subject areas. While all of them need good programming skills, certainly higher level of programming challenges would be anticipated for the first and the third topics. On the other hand, the second topic needs good knowledge of business system analysis and database applications. Moreover, the third topic needs some knowledgeof mobile computing and applications. Again, this topic needs some background on cryptography, while the first topic needs a good understanding on the speech related technologies. Now, we go back to the question that we had at the beginning of this paragraph, "How can you make your final decision?"

In order to answer this question you have to measure each project's "suitability " degree to you. In order to do so a method will be introduced that helps in this measurement process. To keep this measurement method simple, we assign some measurable parameters to each project and we call them selection parameters. Again, for the sake of simplicity and applicability, we summarize these selection parameters into three categories, namely, Interesting, Background Knowledge, and Required Skills. The parameters will be described shortly. In addition, to measure each parameter, we assign each one two attributes, namely a Coefficient and a Percentage. As a result, we have a proper foundation based on which we can apply our method.

Now, to measure each project's "suitability", you should assign a percentage to the Degree parameters to show each parameter's value. The Coefficient is a fix number, from 1 to 5, which shows the weight of the parameter, or its importance, if you prefer. The Coefficient must remain the same for all projects that you have selected. Table 2-1 shows atemplate based on which you can quantify the situation of each project in the short list based on the mentioned parameters.

Parameter / Projects	Interesting			Background Knowledge			Required Skills			Final Result
	Coif. 1–5	Degree 0–100	Result	Coif. 1–5	Degree 0–100	Result	Coif. 1–5	Degree 0–100	Result	Result
Speech to Text System										
Asset Management System										
SMS Cryptographer										

Table 2-1 Project Prioritization Template

As an example, suppose we have set the Coefficient to be 3 for the Interesting, 4 for the Background Knowledge, and 3 for the Required Skills. In addition, suppose we have set our estimation for the Degree parameter as well. Table 2-2 shows this situation and the calculated result for each parameter per each project. The last column, Final Result, shows the outcome. According to this example, the prioritized list of projects would be as below: An Asset Management System

1. A SMS Cryptographer
2. An Speech to Text System
3. An Speech to Text System

Parameter / Projects	Interesting			Background Knowledge			Required Skills			Final Result
	Coif. 1–5	Degree 0–100	Result	Coif. 1–5	Degree 0–100	Result	Coif. 1–5	Degree 0–100	Result	Result
Speech to Text System	3	50	150	4	20	80	3	30	90	320
Asset Management System	3	60	180	4	40	160	3	60	180	520
SMS Cryptographer	3	70	210	4	30	120	3	40	120	450

Table 2-2 Project Prioritization Sample

Consequently, the revised list should be considered as your guide in order to choose your project topic. However, sometimes we might not like the outcome! Well, this is the reason for the measurement process. Indeed, it prevents any subjective decision and shows you the factual and objective outcome. Nevertheless, the harmony between the heart and the brain, as it was mentioned earlier, is very important. But, instead of trying to change the result mechanically, be careful when you are providing the data for each parameter in the first place and do accept the result, afterwards. Anyway, if you could not fix a project topic this way, then read the next section to find out how you can propose your won idea.

2.2   Proposing Your Own Topic

There are situations that you cannot find a proper project in the school's proposed list. You may face this situation because of different reasons. For instance, it might be because you are simply not satisfied with the proposed topics, or it might be because all the topics, which are of your interest, have already been taken by your classmates. Whatever the reason is, you should either select a project that does not suit you or propose your own topic(s). The farmer choice would not be awise one unless you are forced to do so. If that is the case then you should apply the same method that was introduced to you in the previous section. However, in this new situation you are going to select among the closest topics that still are open to be selected.

If you have to propose your own idea, it would be better to think about more than one topic; again, three would be a magic number. This time, the situation can be more difficult than the normal circumstances that we discussed, earlier. In fact, you need to use your creativity talents to come up with proper ideas. However, the general guidelines below can help you to find your way:

Tips on proposing your own topic

- Be creative. Look around at the school, university, your hometown, province, state, and country and try to find a subject, which has not been automated.

- Look at new technologies, specifically those that are related to mobile computing and web technology. You can find many areas that these technologies can be applied for the first time. Clearly, this situation is more popular in developing countries and regions.

- Focus on the subjects that you like their status to be improved using automated systems and computers. These subjects can be selected from different origins such as education, health, globalization, tourism, global warming, life style, culture, entertainment (specifically gaming), etc.

- Choose three topics in order to provide your school and yourself proper flexibility with your proposals.

- Write a couple of paragraphs that state the problem area and why you think this topic is important to be considered as a final year project. The writing process provides you an opportunity to rethink about the topics and to establish the grounds based on which you can defend your proposals.

As soon as you prepared your short list, apply the method that we discussed, earlier, to prioritize the topics. Next, provide the list to the proper authority, who is supposed to decide on your topics. Normally, in this situation, you have to talk to your prospect supervisor. As it was mentioned in the previous section, although you need to defend your proposal strongly, however, it is very important to listen to your supervisor carefully, and to take her/his advice on your proposals seriously.

2.3   Choosing a Supervisor

Some schools allow you to choose your supervisor, but some do not. If you do not have the opportunity to choose your supervisor, then maybe you can simply skip this section, however, even if that is the case, you still can get some good advice regarding supervisors in this section. The supervisor's responsibility is explained by most of the guidelines that schools prepare and disseminateregarding the final year projects. Usually, these guidelines properly inform the students that their supervisors do not provide them with solutions but the general roadmap to the solution.

Moreover, the guidelines advise them about the main issues of the project. Nevertheless, students expect to haveat least some hints about their projects during different stages of the project and to receive some feedbacks, which are specifically addressing different aspects of the selected topic. However, students are told that the project is their responsibility. It means that they have to accept all the consequences of not attending to the supervisor meetings. Again, this is the student responsibility, to seek and follow their supervisor feedbacks on their project according to a preplanned timetable.

Nevertheless, supervisors can have a significant impact on your project. Many factors participate in this impact such as supervisor's experience in the project area, her/his experience on the supervision, the time she/he can dedicate to each student, her/his interest in the project topic, her/his personality and communication style. However, it is not always possible to choose your favorite supervisor. This is because sometimes the supervisor that can help you more does not propose the topics of your interest, or because all the topics that she/he has proposed have already been assigned to your classmates. Below you can find some general hints regarding supervisor selection.

Tips on choosing a supervisor

Choose among the topics of a supervisor with whom you feel you can comfortably communicate. However, you should consider the topics based on the topic selection, at the first step (refer to section 2.1 and 2.2).

- Choose a supervisor that has the knowledge of the area of the chosen topic.

- Consult with graduate students about their experiences on different supervisors.

- Choose more than one supervisor and prioritize your list.

- Talk to the prospect supervisors as soon as you can and register your name with them.

- If you have selected more than one supervisor, let them be informed that you have done so.

2.4   Summary

The first step to do the final year project is to select a proper topic. In this chapter, the importance of this step was discussed. In addition, possible situations for this step were identified. It was explained that either you can find a topic within the school'sproposed project list or you have to propose your own idea. Whichever the case is, a method to quantify the topic's "suitability" was presented. In addition, an example was presented to show you how to apply the mentioned method. Furthermore, the case of supervisor selection was discussed and some guidelines regarding it were presented.