

**Industrial, Manufacturing, & Systems Engineering
College of Engineering**

**Systems Engineering Project Practicum
Summary**



Project Title:	PMO 2.0
Team members:	1. Nicholas, Olivares 2. Sandra, Minjares 3. Bryan, Mata 4. Elizabeth, Rueda 5. Alejandro, Espinola
Semester, year:	Fall, 2017
Type of project:	Individual project at students work (N/A) Team project assigned by instructor (PMO 2.0 System) Project proposed by team (PMO2.0)

Insert Individual / team PICTURE HERE



List members in the picture from left to right

Alejandro Espinola, Nicholas Olivares, Sandra Minjares, Elizabeth Rueda, Professor: Dr. Oscar Mondragon and we are missing one more team member Bryan Mata.

INTRODUCTION

The System Engineering Project Practicum provides the opportunity to apply System Engineering concepts in developing a real system and create documents that formally describe the system. Students review documents and validate them with clients and customers through formal presentations. Teams are self-managed and assign roles to control planning, quality, requirements, design, and implementation.

System Overview

[Provide a project overview]

The purpose of the proposed system is to improve project monitoring, control, and to have a better understanding of team progress and participation. The improvements to the current system will yield more accurate data for the team, the manager, the customer, and for better planning in future projects. The Miner

System's team will be in-charge of the development of the software system and of documenting the necessary information in order to build an efficient system that address the requirements specified by the customer.

[List the current problem, why is the problem important]

The main problem is that the Project Management Office has been unable to autonomously update across multiple sections of a project, mainly it's planning and monitoring. In others words, the team is not able to see the project's progress from beginning to end. There is a current existing planning and monitoring system that does not fully complete the job since it relies on the team members. This means that team members need to constantly be updating the system once a task or activity has been done. This issue is causing confusion and leaving room for human error, therefore, reducing the project progress efficiency. This confusion and human error serve as a gap for not collecting accurate data which can create a glimpse at the moment of planning future project timelines. Finally, the current system's lack of any graphical representation of the data, comment sections, risk & problem monitoring and their respective analysis are not taken into account.

One reason why this is important is because by optimizing the existing system, the customer requirements and needs can be achieved since they are not currently being met. As mentioned before, of the systems defects is the lack of data collection accuracy which serve as a tool for project planning and monitoring, making it unreliable. In order to mitigate or eliminate this problem, the system should be able to become more autonomous leaving less room for error. This, will at the same time low for no confusion as far as the system progress and the customer's product progress..

[Explain how the project addresses the problem]

The goal of the project is to be able to automatize the existing system in order to become a better tool for project control and monitoring. While still base on Excel, more capabilities of this software will be explored in order to add new features. To better address the needs of the customer, the new system will have graphical representation of the data, comment sections, and risks or problems will be taken into account. As a direct benefit of the new system, the data provided will be a reliable reference of the effort needed for future project timelines.

System Description

A. provide a brief description of your system functionality and insert the following pictures:

B. [insert picture of external entities with system components]

C. [insert use case diagrams, the list actors and services]

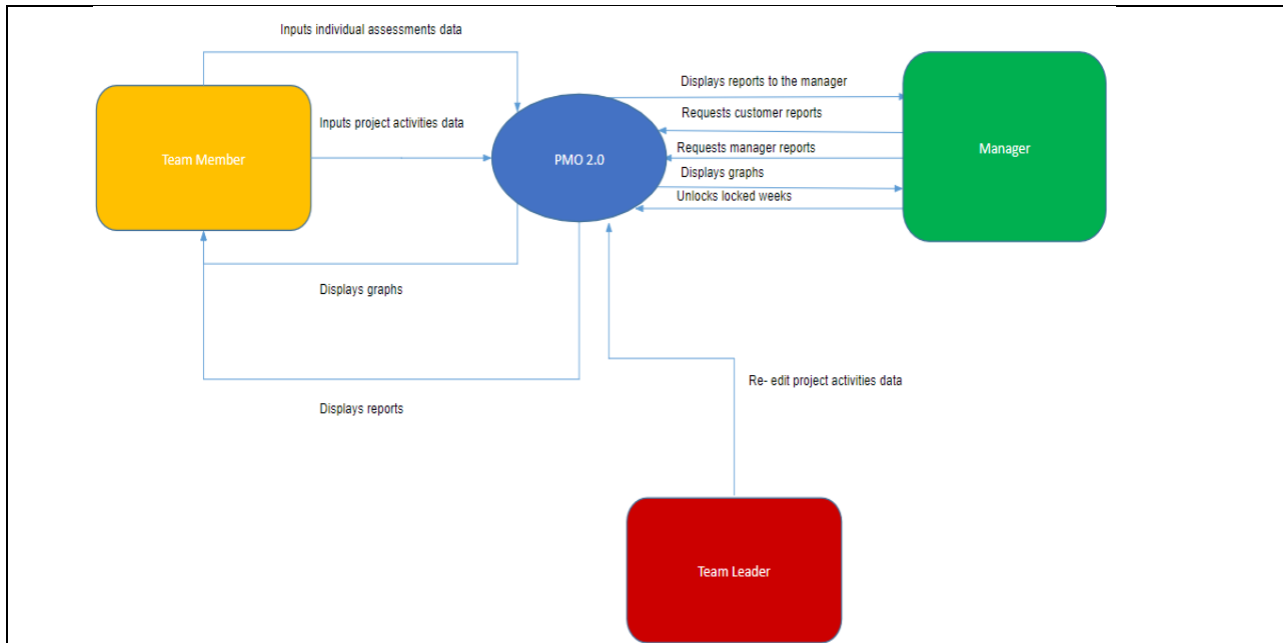
D. [insert activity diagram of the two main services]

E. [insert BDD and IBD or Class diagram and Sequence diagrams]

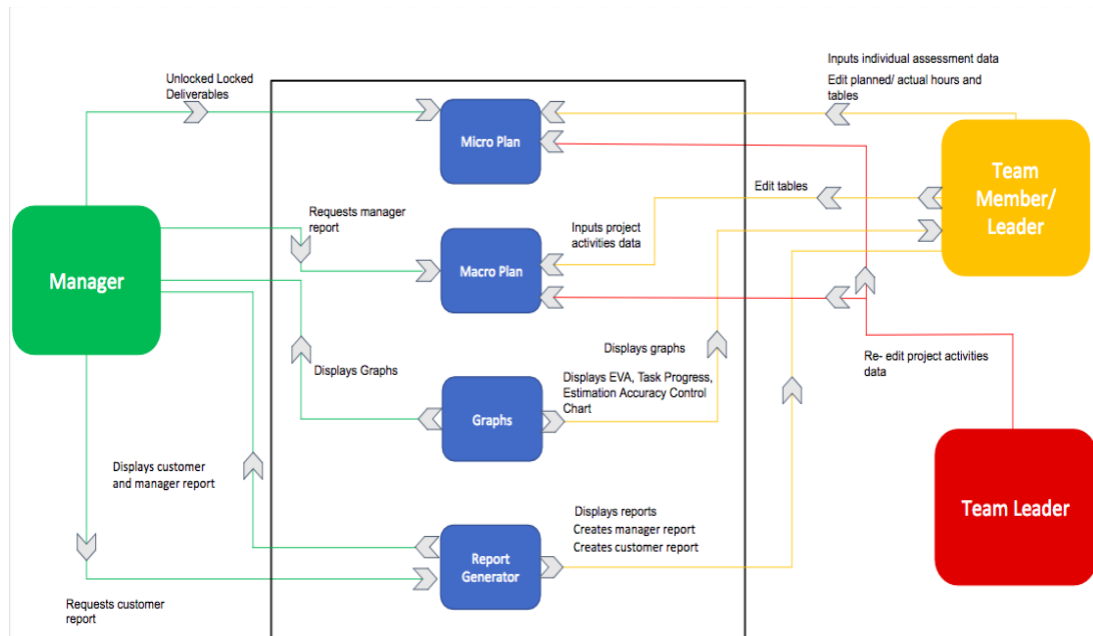
A. Capabilities, functions, and features of the proposed system;

- a) Monitor Team Performance
- b) Monitor Activity Task Status
- c) Monitor Project Status
- d) Dynamic Interfaces
- e) Automated application updates
- f) Overall Analysis Graphical Representations
- g) User Restriction Capability
- h) Individual and Team Graphical Representations

B. Context Diagram



Context Diagram Level 0



Context Diagram Level 1

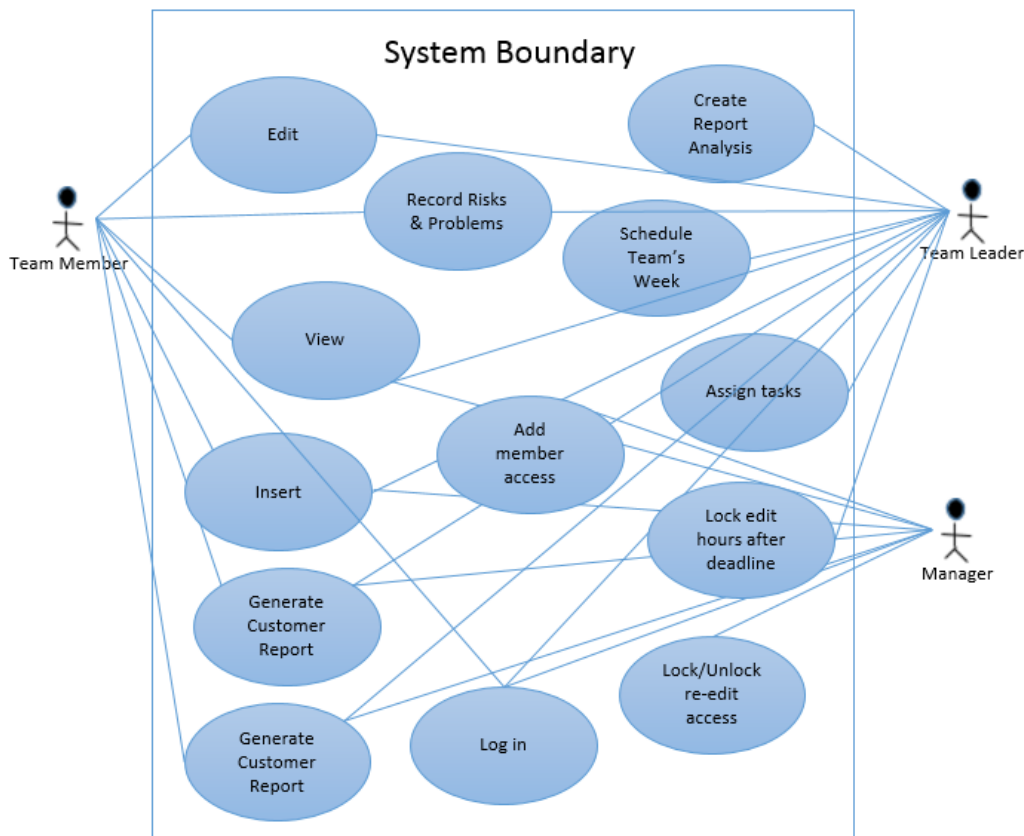
C. List of actors

1. **Team Member:** Actor that logs in to update the system's data. The data mentioned is referred to the information that will help monitor the progress of the team, both, individually, per task, per activity and for the project as a whole. This information includes, due date for each task, activity and project and the actual date they were turned in. It also includes, the intended work hours and the actual work hours each Team Member is planning to put on any specific tasks as well as

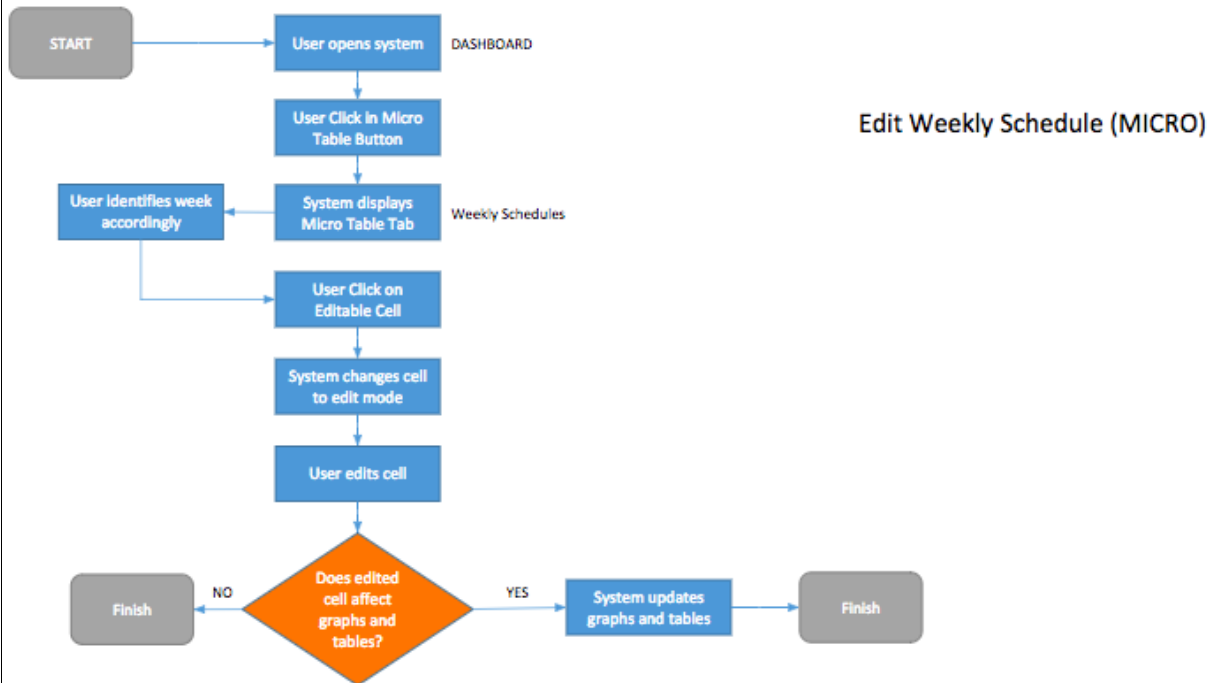
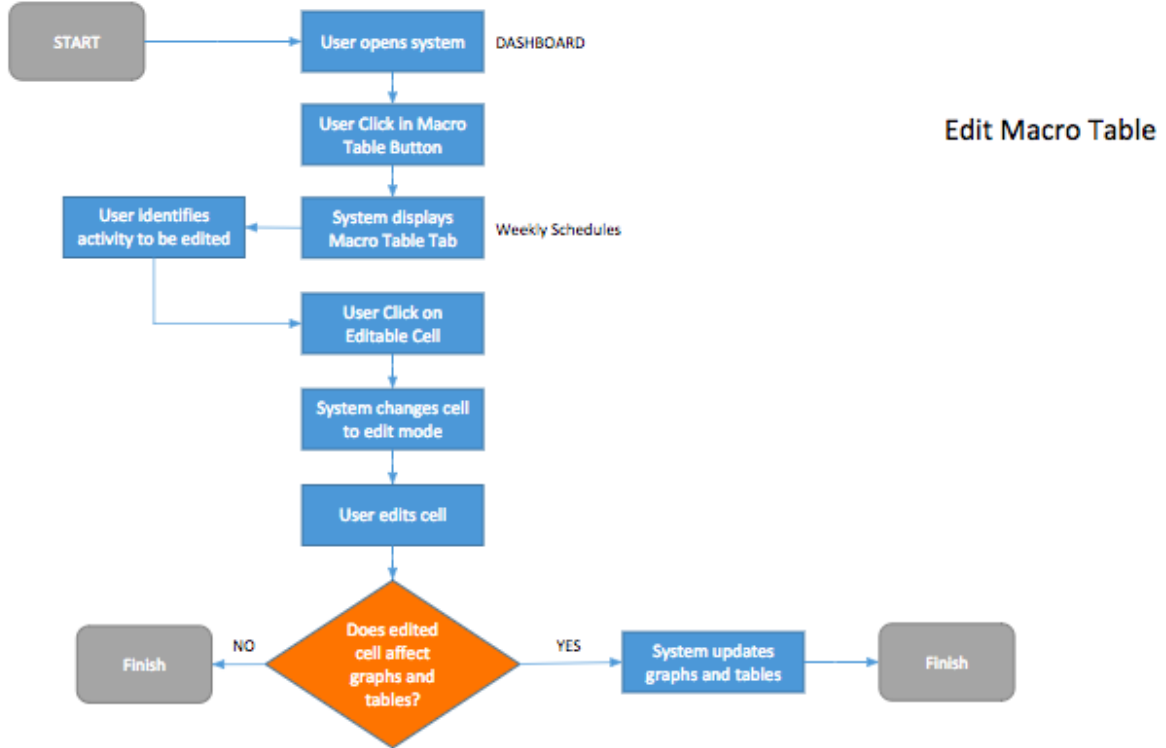
the actual number of hours worked. The Team Member can also edit risks and problems into the micro plan. The Team Member actor will also be allowed to write the analysis associated with the micro table graphs. The Team Member actors also have the ability to elect the Team Leader actor.

2. **Manager/Project Manager:** Actor that views reports from the Team Leader/ Planning Manager or a single Team Member and adds new Team Members to the system's team database. Works by monitoring data based on the input from the Team Member in order to provide progress report to customer. The Manager actor has overall control of the system including the following responsibilities setting up the project for the system, giving the following actors, the Team Leader/ Planning Manager and the Team Member, access to the system by providing them with login information. The access the Manager bestows upon the Team Leader/ Planning Manager and the Team Member actors allows the actors to access the locked macro and micro tables. The Manager actor has the capability to view all information available in the systems such as the Team Member's data and input as well as Team Leader/ Planning Manager's data and input.
3. **Team Leader/ Planning Manager:** Actor that can do everything that the team member can plus assign tasks to members. The team leader can also edit a week that has been unlocked by the manager. The Team Leader/ Planning Manager can edit the project schedule, edit the problems and risks in the macro plan and the analysis associated with the graphs in the macro plan.

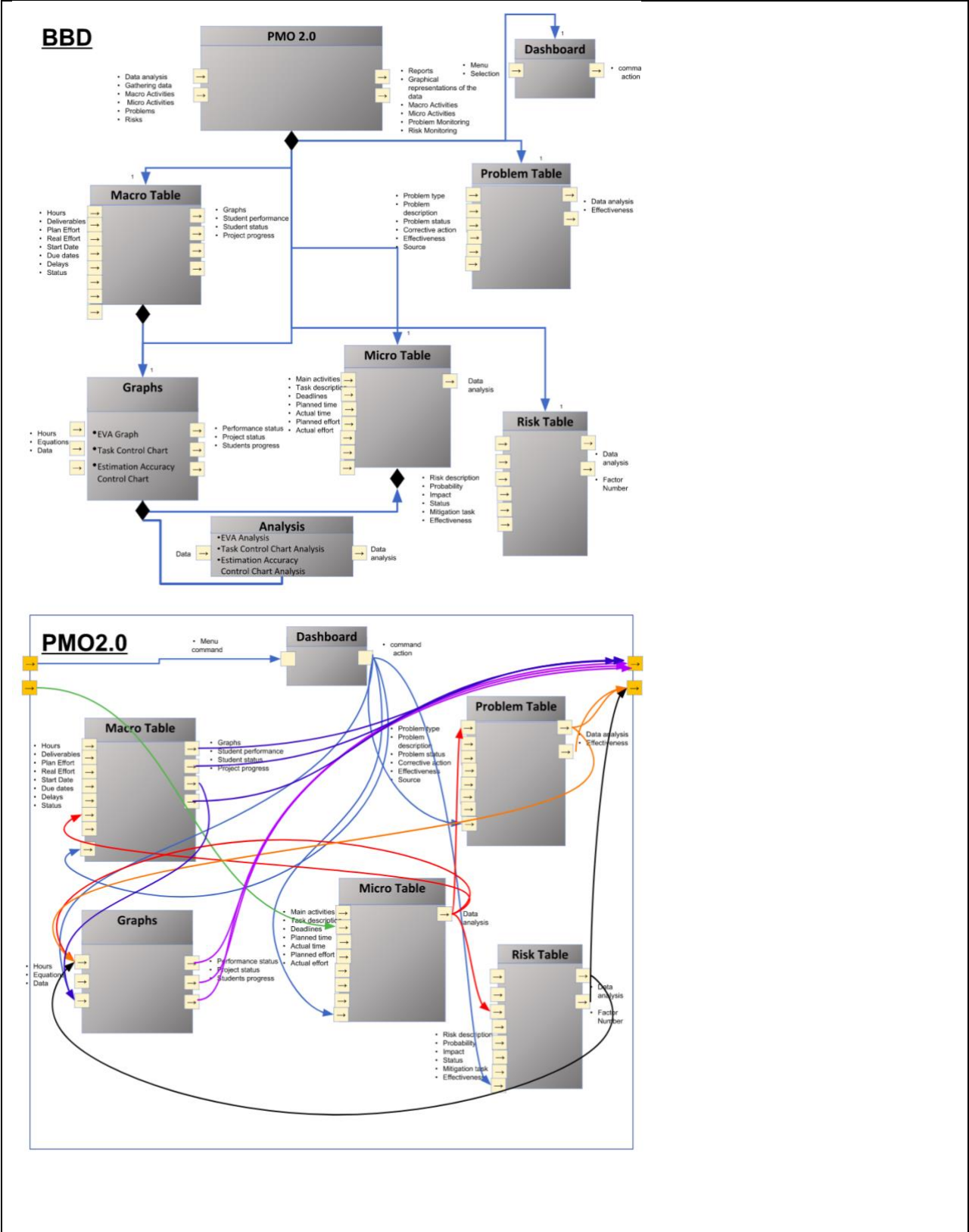
Use case diagram



D.



E. BDD and IBD



PROJECT OUTCOMES

Provide a brief description for the impact of this system in the organization.

The importance of this project is to provide our customer with a system that meets all requirements and needs in order for it do do what it is intended to do in its actual intended environment. Once this is achieved, and the system becomes autonomous, most of the issues will have been addressed, with the exception of some that are completely in the user (student's) hands. Some of these include creating the reports and the analysis of the different graphs as well as actually entering the necessary information on time.

Provide your impression on how the reviews impact the quality of the system under development [insert a picture of the excel quality dashboard]

The reviews impact the quality of the system by validating the system and giving feedback on whether or not the team is on the right track to delivering the right system that the customer wants. The review allowed the team to verify and validate system requirements that could have been misinterpreted to be clarified by the customer or manager. The reviews not only help the quality aspects of the current system but also help address the new improvements or changes that can be imposed due to the customer's needs.

[What soft skills have you (or need to) developed to work on teams]

The main thing in this course has a lot to do with soft skills, and ability to adapt to different Group Members and their different ways. We as a group have al learned and developed a better grasp of how to work better in teams and communicate better. In every group work that you are apart of, it gives you two options. The first option is a greater opportunity to learn and refine your soft skills. The second option is a it regresses your soft skills and makes you more closed off and introverted in team dynamics. Our team has done a great deal of communicating and enhancing our soft skills of mainly communication, and being able to convey ourselves in a better and more effective way.

MASTERS OF SCIENCE IN SYSTEM ENGINEERING PROGRAM ASSESSMENT

First Assessment:

The master's course of Systems Engineering has a great deal of Soft skills, and I feel that if you come into the program without soft skills it will not hinder you. I do feel as though my soft skills have been further enhanced due to the great amount of group work, and the importance of them in a Graduate Level Program. Systems Engineering is a difficult discipline to describe to someone, everyone has a different perspective of what "Systems Engineering" is to them. I feel as though in my program I have learned a lot about how to create a better system and Idea. A lot of people are capable of coming up with great ideas, and this program gives you the ability to learn how to better convey and think out those ideas and projects. I would believe that this is based on learning the different methodologies of System Life Cycles, and how to develop these Life Cycles. I feel as though these are the main skills that I will take into my professional life. The ability to write solid requirements, Develop a Life cycle for any system, Manage any system, and Communicate better with people.

Second Assessment

It is accurate to state that attention to detail, self drive, and teamwork are some of the skills you'll need to be able to complete the Master of Science in Systems Engineering. Group work will be required throughout the entire career, and as you move on, you'll start to know the importance of many of Systems Engineering disciplines. The first thing you'll learn is that Systems Engineering is a multidisciplinary discipline, therefore, you need to be ready to work with all kinds of engineers. Verification, validation, testing, quality, and many other aspects a systems engineer should know will be thoroughly discussed and you'll get to experience a professional experience. Expect to put a lot of time and attention and I guarantee you'll get to become a much better professional, engineer and team player. Overall, a great experience.

Third Assessment:

Skills/techniques that I/we will use in our professional life

This course has helped improve my excel skills. The course imposed the need to learn vba to help create some of the macros need for the function of the prototype. Reinforcing basic knowledge of excel has allowed for my understanding and use of excel to become much more faster and efficient.

[Provide a brief assessment of your master's program. You may consider the following guiding questions:

- Soft skills that I/we have developed in the program
- Methodologies and techniques that I/we have learned in the program
- Opportunities that I/we have during the program
- Skills/techniques that I/we will use in our professional life

- Any other comment that you want to share with current and prospect students]