Assignment #1

- **Due Date: 9/25/17 by 9:00am**

- **Deliverable: post your homework on Blackboard as a zipped file with the name "HW1_YourLastName, FirstName".**

- *Communicate all questions regarding the homework with the TA.*

Using the data spreadsheet provided below to achieve the following:

1. Feed the information provided in this handout in MS Project to create the Project Plan and the Network Diagram
2. Create a WBS with the required phases and activities to complete this project
3. Assign the Resources to the Tasks making any assumptions you consider appropriate (Your assumptions should be based on Software Engineering Assumptions).
4. What is the earliest finish date for this project if it is scheduled to start on 9/25/17?
5. If you are not allowed to use more than 25% of the resources available at any point of time for this project, what is the earliest finish date for this project if it is scheduled to start on 9/25/17?
6. Submit your MS Project File and a PDF document with your answers to Question #4 and Question #5 above.

Resources Available

Important Note: **ONLY assign the needed resources to the tasks; for example a project manager needs one manager of the available managers, however, you could use more than one requirement engineer to work on writing the requirements.**

Category	Initials
Project Manager	PM1, PM2, PM3
Requirement Engineers	RE5, RE76, RE7, RE8, RE9, RE10, RE11, RE12, RE13, RE14, RE15
System Engineers	SE5, SE6, SE7, SE8, SE9, SE11, SE12, SE13, SE14, SE15, SE16
Programmers/Software Engineers	PE5, PE21, PE22, PE23, PE24, PE25, PE26, PE27, PE28, PE29, PE30, PE34
Test Engineers	TE5, TE43, TE44, TE45, TE46, TE47, TE48, TE49, TE50
Documentation Engineers	DE5, DE42, DE43, DE44, DE45, DE47, DE48, DE49, DE61, DE62

Assumptions and Constraints:

1. Every review or inspection "meeting" task shall be carried by 5 engineers including ONE of the author(s)
2. Every review or inspection "preparation" task shall be carried by 4 engineers excluding the author(s)
3. Any "Rework" task can be executed by one or all authors of the original task
4. Project Plan shall be reviewed by at least ONE engineer from every technical area.
5. Risk mitigation and contingency plan shall be reviewed by at least ONE engineer from every technical area.
6. System Engineers are responsible for creating Analysis and Design artifacts

Task/Activity Dependencies:

It is expected that you will find the <u>correct</u> task dependencies based on the material discussed during class and considering the following constraints:

1. There is no technical task prior to requirement phase; project planning is not a technical task it is a managerial task.
2. Analysis Activity can start as soon as requirement document is complete
3. Design activity can start as soon as Analysis document is complete
4. Data Model task can start when Detailed Design task finishes
5. Coding can start as soon as design is complete
6. Writing Test Plan can start as soon as requirements are complete
7. Executing Test Plan can start as soon as coding is complete
8. Documentation can start as soon as requirements are complete
9. Any other constraints that you might add, shall be documented clearly when you submit your homework.
10. Risk mitigation and contingency planning can start after project plan is complete, and can finish any time before analysis starts.

Task	Amount of Work	Productivity Rate
Project Plan		
Write Plan	120 pages	5 pages/Hour
Review Plan		
Preparation for review		4 pages/Hour
Review Meeting		6 pages/Hour
Rework	70 defects	5 defects/Hour
Risk Mitigation and Contingency Plan		
Write Plan	22 pages	3 pages/Hour
Review Plan		
Preparation for review		2 pages/Hour
Review Meeting		3 pages/Hour
Rework	18 defects	2 defects/Hour
Requirement		
Write requirements	190 Req	3 Req/Hour
Write Use Case Model	75 Use Cases	1 use case/4 Hours
Review Requirements/ Use Case Model		
Preparation for review		25 Req/Hour
		5 Use Cases/Hour
Review Meeting		30 Req/Hour
		10 Use Cases/Hour
Rework	177 defects	5 defects/Hour
Analysis		
Write Analysis Document	119 pages	5 pages/Hour
Review Analysis Document		
Preparation for Analysis Document		5 pages/Hour
Review Meeting		10 pages/Hour
Rework	84 defects	7 defects/Hour
Design		
Write DD	88 pages	3 pages/Hour
Review DD		
Preparation for DD		5 pages/Hour
Review Meeting		8 pages/Hour
Rework	72 defects	5 defects/Hour
Write Data Model (DM)	28 pages	1 page/5 Hours
Review DM		
Preparation for DM		3 pages/Hour
Review Meeting		6 pages/Hour
Rework	48 defects	5 defects/Hour

Coding and unit test		
Write Code	4672 SLOC	5 SLOC/Hour
Unit Testing		
Prepare/Execute Test Cases	269 test cases	10 Test Cases/Day
Fix Found Defects	239 Defects	10 Defects/Day
Test Fixed Defects	239 Defects	5 Defects/Day
Code Inspection		
Preparation for Code Inspection		150 SLOC/Hour
Code Inspection Meeting		200 SLOC/Hour
Rework	327 defects	5 defects/Hour
Testing		
Write test plan (TP)	148 pages	5 pages/Day
Review TP		
Preparation for TP		5 pages/Hour
Review TP Meeting		10 pages/Hour
Rework	154 defects	5 defects/Hour
Execute TP (test cases)	420 test cases	10 test cases/day
Fix Found Defects	270 defects	5 defects/day
Test Fixed Defects	270 defects	10 defects/day
Documentation		
User Documentation	237 pages	2 pages/Hour
Review UD		
Preparation for UD Review		10 pages/Hour
Review UD Meeting		15 pages/Hour
Rework	310 defects	20 defects/Hour