Assignment #1

- **Due Date: 2/20/15 by 11:59pm**
- **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 2/6/15?
5. If you are not allowed to use more than 20% 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 2/6/15?
6. Submit your MS Project File and a word document with 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	RE1, RE4, RE5, RE6,RE7,RE8, RE102, RE103,
System Engineers	SE1, SE2, SE3, SE6, SE7, SE8, SE204, SE205
Programmers/Software Engineers	PE6, PE7, PE8, PE9, PE10, PE201, PE202, PE203, PE204, PE205
Test Engineers	TE5, TE6, TE7,TE8, TE9,T E10, TE101, TE102, TE103, TE104, TE202, TE203, TE204
Documentation Engineers	DE1, DE2, DE6, DE7, DE8, DE103, DE104, DE105, DE203, DE204, DE205

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. System Engineers are responsible for creating Analysis and Design artifacts

Task/Activity Dependencies:

It is expected that you will find the correct 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.

Task	Amount of Work	Productivity Rate
Project Plan		
Write Plan	167 pages	53 pages/Hour
Review Plan		
Preparation for review		4 pages/Hour
Review Meeting		9 pages/Hour
Rework	55 defects	5 defects/Hour
Requirements		
Write requirements	217 Req	5 Req/Hour
Write Use Case Model	60 Use Cases	5 use case/Hour
Review Requirements/ Use Case Model		
Preparation for review		10 Req/Hour
		5 Use Cases/Hour
Review Meeting		11 Req/Hour
		15 Use Cases/Hour
Rework	67 defects	3 defects/Hour
Analysis		
Write Analysis Document	101 pages	2 pages/Hour
Review Analysis Document		
Preparation for Analysis Document		4 pages/Hour
Review Meeting		7 pages/Hour
Rework	71 defects	4 defects/Hour
Design		
Write DD	213 pages	3 pages/Hour
Review DD		
Preparation for DD		3 pages/Hour
Review Meeting		6 pages/Hour
Rework	188 defects	7 defects/Hour
Write Data Model (DM)	33 pages	1 page/Hour
Review DM		
Preparation for DM		3 pages/Hour
Review Meeting		5 pages/Hour
Rework	69 defects	4 defects/Hour
Coding and unit test		
Write Code	5904 SLOC	5 SLOC/Hour
Unit Testing		
Prepare/Execute Test Cases	412 test cases	14 Test Cases/Day
Fix Found Defects	331 Defects	5 Defects/Day
Test Fixed Defects	331 Defects	7 Defects/Day
Code Inspection		
Preparation for Code Inspection		50 SLOC/Hour

Code Inspection Meeting		100 SLOC/Hour
Rework	369 defects	4 defects/Hour
System Integration Testing		
Write test plan (TP)	174 pages	6 pages/Day
Review TP		
Preparation for TP		3 pages/Hour
Review TP Meeting		6 pages/Hour
Rework	99 defects	4 defects/Hour
Execute TP (test cases)	502 test cases	23 test cases/day
Fix Found Defects	165 defects	8 defects/day
Test Fixed Defects	165 defects	16 defects/day
Load, Stress, and Performance Testing		
Write test plan (TP)	143 pages	8 pages/Day
Review TP		
Preparation for TP		3 pages/Hour
Review TP Meeting		6 pages/Hour
Rework	49 defects	3 defects/Hour
Execute TP (test cases)	194 test cases	10 test cases/day
Fix Found Defects	78 defects	6 defects/day
Test Fixed Defects	78 defects	12 defects/day
Documentation		
User Documentation	185 pages	4 page/Hour
Review UD		
Preparation for UD Review		5 pages/Hour
Review UD Meeting		13 pages/Hour
Rework	82 defects	5 defects/Hour
Training Material		
Tutorial	80 pages	4 page/Hour
Review Tutorial		
Preparation for Tutorial Review		5 pages/Hour
Review Tutorial Meeting		10 pages/Hour
Rework	123 defects	10 defects/Hour