Assignment #3

Deliverable: **post your homework as a ZIP file on Blackboard with the name "HW3_YourLastName" and the following items:**

1. **Your PDF document for calculations and analysis report.**
2. **Your IPYNB script that has your source code and output**
3. **Your HTML document for your ipynb script**

Before you start working on this assignment make sure you watch the DRE lecture in its entirety and the walkthrough/tutorial for the GitHub issues dataset exercise.

- Consider the data listed in the following matrix for a product of size 42 KLOC:
  1. Calculate the defect removal rate for every phase
  2. Calculate the defect injection rate for every phase
  3. Calculate the defect escape rate for every phase
  4. Which phase is the most effective in removing defects?
  5. Calculate the overall defect removal effectiveness.
  6. Do you think reviews and inspections were effective? Explain.
  7. If the number of defects originated in requirements phase increased by 50% and defects detected in requirements review increased by 50%, do you think that will have a positive or negative impact on the defects originated in the coding phase? Explain your answer in detail (present data to support your answer).
  8. If the number of defects originated in design phase increased by 30% and defects (defects escaped from prior phases and injected in current) detected in code inspections increased by 20%, do you think that will have a positive or negative impact on defect removal effectiveness for the testing phases? Explain your answer in detail (present data to support your answer).
  9. Create ipynb script (Python) to achieve the following:
     1. Read the following matrix from a CSV file or JSON file
     2. Create functions to calculate the defect removal effectiveness for every phase and for the entire process
     3. Create a stacked bar chart to plot the counts (y-axis) of the defects detection phase for the origination phases (X-axis)

Defect Origin									
Where Found		Requirement	Analysis	Design	Coding	Unit Testing	Integration Testing	System Testing	Field
	Requirement	81							
	Analysis	21	29						
	Design	17	17	102					
	Coding	36	19	55	402				
	Unit Testing	12	35	8	156	51			
	Integration Testing	7	15	7	27	-	3		
	System Testing	14	39	5	23	-	-	3	
	Field	3	2	2	7	-	-	-	7