Homework 7

Team 9 - John McFarren, Erica O'Kelly, Devila Bakrania, Matthew Monaco

"I pledge my honor that I have abided by the Stevens Honor System." - JM, EO, DB, MM

Summary:

For this assignment the team was asked to predict the total number of defects within a project using two methods. The team used method 1 and 2 of Rayleigh Distribution in order to make their estimates. From there the team was then able to estimate the total number of defects left in the system and the defect removal rate after month 6. The team determined an estimate of 123 bugs in the system and 19 remaining. This proved to be a helpful assignment for the team to gain a deeper understanding of the estimation techniques used for defect estimation shown in class.

Month Found	1	2	3	4	5	6
Defects	13	20	24	22	17	8

1) What do you predict as the total number of bugs in the system? Use two methods and show your work.

Rayleigh Method 1: Using tm and the 40% rule

Month Found	1	2	3	4	5	6
Defects	13	20	24	22	17	8
	sum of 1-3	57				
	total bugs	142.5				

Using the first method, the team predicts about 143 bugs in the system.

Method 2:

Month Found	1	2	3	4	5	6
Defects	13	20	24	22	17	8
K	123.6839461	112.3963982	118.7079315	120.40506	122.7179825	88.66867319
Mean	114.4299986					
f(t)	12.02734897	20.3618622	23.13510085	20.90825725	15.85187383	10.32427751
SD	13.23714251					
	Total defects		102.6087206			
	Defects Total		103			

Using method 2 we found the total amount of defects to be 103

2) How many bugs do you predict as being left in the system?

We predict there will be 19 bugs left in the system by taking the average of our two methods and subtracting by the given total defects found.

(143 + 103)/2 = 123

123 - 104 = 19

3) What is the equation that predicts the defects?

$$F(t) = K\left[1 - e^{-(1/2t^2\ m)t^2}\right]$$

4) If you shipped at the end of month 6 (and assuming you removed all the defects found at that time), what would you predict as the defect removal efficiency?

Defect removal efficiency = Given data total/Average prediction = 104/123 = .8455 = 84.55%