**CS587 – Software Project Management**

**Assignment #4 A20402686**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Defect Origin** | | | | | | | | | | |
| **Where Found** |  | **Requirement** | **Analysis** | **Design** | **Coding** | **Unit Testing** | **Integration**  **Testing** | **System**  **Testing** | **Field** | ***Total*** |
| **Requirement** | 50 |  |  |  |  |  |  |  | **50** |
| **Analysis** | 24 | 45 |  |  |  |  |  |  | **69** |
| **Design** | 56 | 51 | 77 |  |  |  |  |  | **184** |
| **Coding** | 48 | 47 | 84 | 189 |  |  |  |  | **368** |
| **Unit Testing** | 22 | 14 | 38 | 78 | 12 |  |  |  | **164** |
| **Integration**  **Testing** | 17 | 22 | 47 | 41 | - | 11 |  |  | **138** |
| **System**  **Testing** | 11 | 12 | 16 | 33 | - | - | 19 |  | **91** |
| **Field** | 3 | 2 | 4 | 3 | - | - | - | 3 | **15** |
| ***Total*** | **231** | **193** | **266** | **344** | **12** | **11** | **19** | **3** | **1079** |

Answers for 1, 2 and 3:

|  |  |  |  |
| --- | --- | --- | --- |
| **Phase** | **Defects removal per KLOC** | **Defects injection per KLOC** | **Defects escaped per KLOC** |
| Requirement | 0.4 | 1.9 | 1.50 |
| Analysis | 0.6 | 1.6 | 2.54 |
| Design | 1.5 | 2.2 | 3.23 |
| Coding | 3.1 | 2.9 | 3.03 |
| Unit Testing | 1.4 | 0.1 | 1.75 |
| Integration testing | 1.2 | 0.1 | 0.7 |
| System testing | 0.8 | 0.2 | 0.1 |
| ***Total*** | ***9.0*** | ***9.0*** | ***12.85*** |
| Field | 0.2 | | |

Answer 4: Overall defect removal effectiveness = (1 - 15 / 1079) \* 100 = 98.6%

Answer 5: System testing is most effective in defects removal as defect removal effectiveness in this phase is 85.84%.

Answer 6: Reviews and inspections were only 62.18% effective. Reviews and inspection are not effective because the benchmark is 95%.

Answer 7: It will have a negative impact on defect removal effectiveness in the coding phase because, after incrementing by 10%, the total number of defects originated at design phase will be 292.6 ~= 293 and the total number of defects detected in design phase will be 202.4 ~= 203. Hence, the total number of defects escaped from design phase increases by an amount of 8 (number of defects escaped from design phase with old values is 387 and number of defects escaped from design phase with new increased values is 395, 395-387 = 8). This clearly has a negative impact on coding phase as it will detect new defects in design.