Software Project Management CS587

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Homework 5 Part 1

Analysis Report

Q 3. For releases R2 and R4, the project manager increased the number of reviewers from 4 to 5 reviewers for every review task. Do you think that had a positive, negative, or no impact on the overall defect removal effectiveness process? Explain your answer in detail (present data to support your answer).

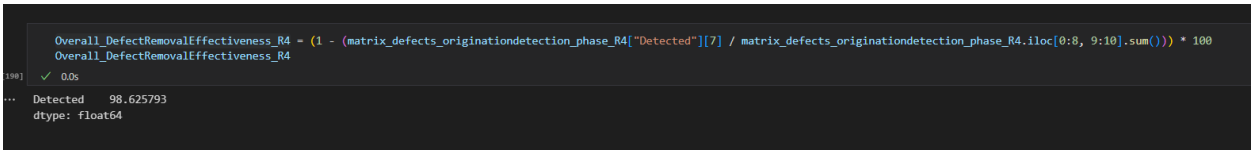
Ans:

In software project management, it is essential to continuously improve the quality of the product while effectively removing defects. One approach to achieving this is to increase the number of reviewers for every review task.

In this context, the project manager has increased the number of reviewers from 4 to 5 for Releases R2 and R4. By measuring the DRE score, it was found that R2 had a DRE score of 98.214286, while R4 had a higher DRE score of 98.625793. The addition of an extra reviewer has resulted in a significant improvement in detecting and removing errors, as reflected in the higher DRE score.

Furthermore, workload is an important consideration when determining the impact of adding an extra reviewer. For instance, R2 had a workload of 34 KLOC, while R4 had a workload of 24 KLOC. Despite having a lower workload, R4 had a higher DRE score compared to R2. This suggests that the positive impact of adding an extra reviewer is more significant for R4 since the same amount of time was spent on a lesser workload compared to R2.

Overall, the addition of an extra reviewer can lead to improved quality and defect removal effectiveness in software project management. It is important to consider workload and other factors when determining the appropriate number of reviewers for a given project.



Q 4. For releases R3 and R5, the project manager increased the duration of every development task by 20%, in essence, giving the developer of every artifact more time to create the artifact. Do you think that had a positive, negative, or no impact on the overall

defect removal effectiveness process? Explain your answer in detail (present data to support your answer).

Ans:

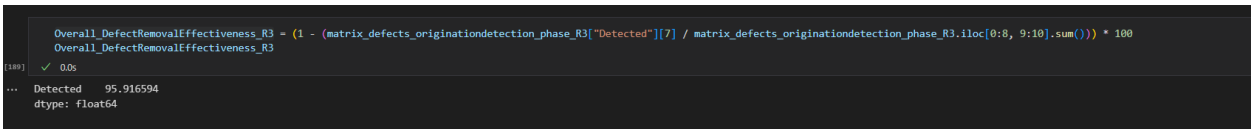
In software project management, it is important to ensure that tasks are completed within the allocated time while maintaining the quality of the product. However, there are times when increasing the duration of a task may be necessary to improve the quality of the product.

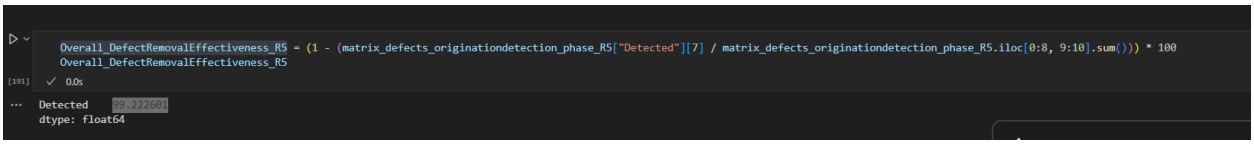
In this context, the project manager increased the duration of every development task by 20% for Releases R3 and R5. This gave the developers additional working time to complete their tasks, which could potentially improve the quality of the product.

By measuring the DRE values for R3 and R5, it was found that R5 had a higher DRE value of 99.222601 compared to R3, which had a DRE value of 95.916594. This indicates that the increase in task duration had a positive impact on the defect removal effectiveness process, leading to a higher DRE score.

It is important to note that the increase in task duration may not always lead to a positive impact on the defect removal process. Other factors, such as an increase in the complexity of the task or a decrease in motivation due to longer task durations, may come into play. However, in this case, the increase in task duration was effective in improving the defect removal process, resulting in a higher DRE score for Release R5.

Overall, it is crucial for software project managers to balance the time allocated for tasks with the quality of the product. In some cases, increasing task duration may be necessary to improve the quality of the product and the defect removal effectiveness process. However, it is important to consider all factors before deciding to increase task duration.





Q 5. Which approach worked better for the project manager to improve the quality of the product and defect removal effectiveness: adding more reviewers to the review tasks in releases R2 and R4 or extending the duration of the artifact development in releases R3 and R5? Explain your answer in detail (present data to support your answer).

Ans:

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To determine which approach worked better for the project manager to improve the quality of the product and defect removal effectiveness, we need to compare the impact of adding more reviewers to the review tasks in releases R2 and R4 versus extending the duration of the artifact development in releases R3 and R5.

For releases R2 and R4, the project manager increased the number of reviewers from 4 to 5 for every review task. The DRE score for R2 was 98.214286 and for R4 was 98.625793. This increase in reviewers is expected to have a positive impact on the overall defect removal effectiveness process as it provides more opportunities to detect and remove errors.

For releases R3 and R5, the project manager increased the duration of every development task by 20%. The DRE value for R3 was 95.916594 and for R5 was 99.222601. This increase in task duration is also expected to have a positive impact on the overall defect removal effectiveness process as it gives developers additional working time to complete their tasks.

To compare these approaches, we need to consider the impact on the defect removal process and the resources required to implement each approach. Adding more reviewers to the review tasks requires additional resources, such as hiring more reviewers or increasing the workload of existing reviewers, which may not be feasible for all projects. On the other hand, extending the duration of the artifact development may be easier to implement as it requires only a change in the project schedule.

Average of R2 and R4 = 98.4200395

Average of R3 and R5= 97.5695975

Based on the DRE scores, it is evident that both approaches were effective in improving the defect removal effectiveness process. However, the addition of one more reviewer is a better approach for the project manager to improve the quality of the product and the effectiveness of defect removal. Adding an extra reviewer will aid in quickly detecting errors, resulting in an average Defect Removal Efficiency (DRE) score of 98.4200395. On the other hand, increasing the duration of every task by 20% has an average DRE of 97.5695975.