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You are hired as a new Agile Leader (Scrum Master) and leading a new development team (10 Developers). You received the requirements (100 User Stories) and asked to size the development effort. You plan on using Scrum as your development method with 2 week Scrum cycles. Your leadership would like to understand the following:

1. What data-driven techniques are available to estimate effort in agile user stories? What are the pros and cons of the top three techniques? (Hint: Expert Judgement, LOC, Planning Poker, the method taught in class, etc.) (Max 200 words)

- LOC

Pros: Line of Code serves as an intuitive metric for measuring the size of software because it can be seen and the effect of it can be visualized.

Cons: A developer who writes just a few lines of code may still be more productive than a developer who writes more lines of code.

LOC estimation can be challenging for projects that use different programming languages

- Expert Judgement:

Pros: The pros of this technique are that it's quick, easy, and can provide a reliable estimate

This method can also be useful for complex or specialized projects that require a specific level of expertise

Cons: it can be subjective and reliant on the experience and knowledge of the experts consulted.

- Planning Poker:

Pros: enables the avoidance of dominant individuals' impact, leading to more accurate estimates

encourages diverse viewpoints, encourages team engagement and collaboration, and fosters a feeling of team ownership.

Cons: it can be time-consuming, particularly for larger teams, and may not always be suitable for projects with tight deadlines or a lack of experienced team members.

it can also lead to over-reliance on team members, potentially compromising the accuracy of the estimate

Refrence:
https://www.researchgate.net/publication/281840565_Analysis_Of_Source_Lines_Of_CodeSLOC_Metric

https://www.researchgate.net/publication/2522117_Expert_judgement_in_cost_estimating_Modelling_the_reasoning_process

https://www.simula.no/publications/inconsistency-expert-judgment-based-estimates-software-development-effort

https://www.atlassian.com/blog/platform/a-brief-overview-of-planning-poker

2. What information is missing to accurately size the project using data-driven techniques? (Max 200 words)

Historical data from prior, comparable finished projects to estimate the effort needed for a current project. Along with the effort values, these statistics also include a number of project characteristics. So any data-driven method must include the dataset as a crucial element. if the estimate is based on inflated data and factors, it cannot be accurate.

It's crucial to understand that historical data does not offer a generally applicable answer. Since each project is different from the others in terms of its circumstances, scope, and team makeup. As a result, it's crucial to evaluate past data in the context of the present project and modify estimates as necessary.

Another key factor is Team Experience and availability. In this case since this is a new development team. It is very important to assess every member strength and weakness. Accurate estimation depends on the team members' technical knowledge. The project's technologies and tools, as well as any potential risks or difficulties that may emerge technically, should be well understood by the team. Team members' ability to finish tasks within a specified timeframe may be impacted if they are frequently called away from the project for other obligations

Refrence: https://www.researchgate.net/publication/357729732_Data-driven_effort_estimation_techniques_of_agile_user_stories_a_systematic_literature_review

https://kanbanize.com/agile/project-management/estimation