

SE 216 – SOFTWARE PROJECT MANAGEMENT

SOFTWARE MEASUREMENTS DOCUMENT

PROJECT NAME: UniLearn

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Questions to identify measurements:

1. How many features do we add?
2. How many times did we repeat the same sprint in the project?
3. How many requirements were added to the backlog?
4. How many APIs are we currently integrating with?
5. How effective are performance optimizations?
6. How many hours were spent on performance testing?
7. How many bugs were fixed?
8. How effective is documentation?
9. How secure is the implemented system?

Identified measurements:

- 1.1. Total number of features added in the current development cycle .
- 2.1. Number of different project part where the sprint is repeated .
- 2.2. Frequency of sprint repetition in each part of the project.
- 3.1. Total number of new user stories added to the backlog .
- 4.1. Total number of APIs integrated into the project.
- 5.1. Total number of performance optimizations implemented.
- 5.2. Impact of each optimization on system performance (speed effect, memory usage effect).
- 6.1. Total number of hours spent on performance testing throughout the project.
- 7.1. Total time taken to fix each bug .
- 8.1. Total number of hours spent preparing the documentation.
- 9.1. Authentication system assessment.

Measurement storage and collection:

What

- Count of features, including personalized profiles, lecture materials, communities and announcement system.(1.1)
- The count of unique locations where the sprint is repeated. (2.1)
- Frequency of sprint repetition in each stage.(2.2)
- The amount of new user stories added to the backlog.(3.1)
- Count of APIs integrated into project.(4.1)
- Count of performance optimizations.(5.1)
- System's Memory usage percentage and feedback time.(5.2)
- Total number of hours spent preparing and performing reviews.(6.1)

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- Time to fix each individual bug.(7.1)
- Documentation preparation time.(8.1)
- Combinatorial analysis. (9.1)

When

- After each feature development.(1.1)
- Recorded at the end of each sprint cycle.(2.1)
- Just before a new sprint begin.(3.1)
- Recorded just after completion of each API integration.(4.1)
- After completion of each optimization task.(5.1)
- Evaluated during testing phase.(5.2)
- Recorded immediately following each review session.(6.1)
- Recorded after fixing of each bug.(7.1)
- Recorded immediately following each review session or at the end of a review cycle.(8.1)
- Evaluated after implementation of each authentication system. (9.1)

Format

- Integer data (1.1, 2.1, 3.1, 4.1, 5.1, 9.1)
- Real number data (2.2, 5.2, 6.1, 7.1, 8.1)

How

- With using an online spreadsheet like excel.(1.1, 2.1)
- Logged in a sprint frequency analysis report.(2.2)
- Tracked in the project's backlog management document.(3.1)
- Specified document for API integrations.(4.1)
- Tracked in a performance optimization log.(5.1)
- Recorded in a system performance report.(5.2)
- Entered into a pre-specified project spreadsheet by the review leader.(6.1, 8.1)
- Logged in a spreadsheet that contains when the bug was fixed and how long it took to be fixed.(7.1)
- Combinatorial analysis report that done by experts. (9.1)

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Measurement Type	Description	Example Measurements
Project development efficiency	Measures, how efficient project development life-cycle going.	Sprint repetiton count, frequency , bug fixing time Doc preperation time, hours spent on performance tests. - 2.1, 2.2, 6.1, 7.1, 8.1
Robustness	Measures how safe is the program.	bug fixing time. - 7.1
Performance of implementation	Measures the overall performance of the implemented system.	Total number of optimization implemented, Impact of these optimizations. - 5.1, 5.2
Functionality	How functional/useful is Project ?	Total number of features added. API count - 1.1, 4.1
Acceptability	How acceptable is this Project? Is this project satisfies customers needs?	Total number of new user stories added to product backlog - 3.1
Security	How secure is the implemented system?	Combinatorial analysis about authentication system - 9.1