SE 216 – SOFTWARE PROJECT MANAGEMENT
SOFTWARE MEASUREMENTS DOCUMENT

PROJECT NAME: **MallTrails**

GROUP MEMBERS: Emirhan Toprak,Kian Ansarinejad,Sabahaddin Ispiroglu,Murat Göçmen,Eren Kösen

Questions to identify measurements:

1. How many defects were discovered during testing and how quickly were they resolved?
2. Was the project completed within its established schedule?
3. What is the quality of the final product?
4. What amount of time was dedicated to testing?
5. How much documentation was required for the project?
6. How much of the code has been reused?
7. Was the project completed within the allocated budget?
8. What was the team's productivity during the project?
9. How effective were the development methods and tools used in the project?
10. How well did the software product perform under different conditions?
11. How well did the project team communicate with each other and with stakeholders?
12. How well were project risks identified and managed?
13. How well were project deliverables reviewed and approved?
14. What is the size of the software product?
15. How effective was the team's training program?

Identified measurements:

1. Total number of defects discovered during testing.
- Time taken to resolve each defect.
- Number of defects that required rework.

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2. Actual project completion date
- Project duration
- Percentage of scheduled tasks completed on time.

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3. Number of defects discovered in the final product.
- Customer satisfaction ratings for the final product
- Number of support calls or tickets raised for the final product.

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4. Total number of hours spent on testing.
- Time spent on each testing phase.
- Time spent on manual testing versus automated testing.

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5. Total number of pages of documentation produced.
- Time spent on creating documentation.
- Percentage of documentation completed on time**.**

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6. Number of code modules reused.
- Number of lines of code reused.
- Percentage of reused code in the final product

7. • Actual cost of the project
- Estimated cost of the project
- Variance between actual and estimated costs

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8. • Number of completed tasks.
- Time taken to complete each task.
- Number of defects per unit of work

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9. • Number of defects introduced by the development tools.
- Time taken to complete tasks using the development tools.
- Satisfaction survey results from team members

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- Memory usage under heavy load
- Response time under light load
- Response time under heavy load

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11. • Number of communication breakdowns within the project team
- Response time to stakeholder queries or issues
- Level of stakeholder satisfaction with project communication

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12. • Number and severity of risks identified during the project
- Percentage of identified risks with mitigation plans
- Number of high-severity risks that occurred during the project

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13• Number of deliverables reviewed
- Time taken to review each deliverable**.**
- Number of rework cycles for each deliverable

14• Lines of code (LOC)
- Number of functions or methods
- Number of classes or modules

15• Hours spent on training activities
- Training completion rate
- Improvement in performance metrics after training (increase in productivity, decrease in defects)

Measurement storage and collection:

- What – Defects discovered during testing, time taken to resolve each defect, number of defects that required rework
- When – Immediately following each testing phase.
- Format – Real numerical data
- How - Entered into a pre-specified project spreadsheet by the testing team

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- What – Project completion date, project duration, percentage of scheduled tasks completed on time
- When – Upon project completion and at regular intervals throughout the project

- Format – Real number data
- How - Entered into a pre-specified project spreadsheet by the project manager

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- What – Defects discovered in the final product, customer satisfaction ratings, number of support calls or tickets raised
- When – After the final product is released to customers.
- Format – Real number data
- How - Entered into a pre-specified project spreadsheet by the support team

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- What – Total number of hours spent on testing, time spent on each testing phase, time spent on manual testing vs automated testing
- When – Throughout the testing phase
- Format – Real number data
- How - Entered into a pre-specified project spreadsheet by the testing team

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- What – Total number of pages of documentation produced, time spent on creating documentation, percentage of documentation completed on time
- When – Throughout the project
- Format – Real number data
- How - Entered into a pre-specified project spreadsheet by the documentation team

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- What – Percentage, number of modules, and number of lines of reused code
- When – After the final product is completed.
- Format – Real number data
- How - Manually extracted from code documentation and stored in a database.

- What – Actual and estimated costs, and cost variance
- When – At the end of the project
- Format – Real number data
- How - Entered into a pre-specified project spreadsheet by project manager

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- What – Number of completed tasks, time taken to complete each task, defect density
- When – Throughout the project
- Format – Real number data
- How - Automatically collected by project management software

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- What – Number of defects, time taken, survey results
- When – Throughout the project
- Format – Real number data and survey results
- How - Collected manually by the project manager

- What – Response time and memory usage
- When – During performance testing
- Format – Real number data
- How - Automatically collected by performance testing software.

- What – Communication breakdowns, response time, stakeholder satisfaction

- When – Throughout the project and at project completion
- Format – Categorical and ordinal data
- How - Collected through surveys, interviews, and project logs and stored in a project database

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- What – Identified risks, mitigation plans, high-severity risks
- When – Throughout the project
- Format – Real number data and categorical data
- How - Risks and mitigation plans are documented and stored in a project database, and high-severity risks are also recorded separately.

- What – Deliverables reviewed, time taken to review each deliverable, number of rework cycles
- When – After each deliverable is completed.
- Format – Real number data
- How - Entered into a pre-specified project spreadsheet by the review team

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- What – Lines of code, number of functions or methods, number of classes or modules
- When – At the end of each development phase
- Format – Integer data
- How - Calculated by a code analysis tool and recorded in a pre-specified project spreadsheet by a development team member

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SOFTWARE MEASUREMENTS DOCUMENT

Measurement Type	Description	Example Measurements
Product size measurement	Quantifying the size of a software product to gain insight into its complexity, identify potential problems, and track project progress.	Lines of code, function points, number of modules
Cost and Effort Estimation	Tracking the amount of time and resources spent on various activities throughout the development process to help estimate project costs and effort.	Person-hours spent on coding; person-hours spent on testing
Change Data Management	Quantifying changes made to software artifacts over time to track changes and assess the impact of those changes.	Completed tasks, number of defects solved, product growth over time
Project Management	Measuring the cost of developing, testing, and maintaining the software, including the cost of licenses, and tracking project progress.	Project length, cost, staffing levels
Training	Assessing and evaluating the training activities that are designed to help developers acquire the necessary skills and knowledge to carry out their work effectively.	Hours spent on training, training completion rate
Communication	Analyzing communication quality and frequency, identifying gaps, and improving effectiveness.	Number of meetings held, response time to stakeholder queries or issues, level of stakeholder satisfaction with project communications.
Performance	Measuring the performance of the software, including response times and resource utilization, under different workloads.	Response time under load, memory usage under heavy load, response time under light load