

SE 216 – SOFTWARE PROJECT MANAGEMENT

SOFTWARE MEASUREMENTS DOCUMENT

PROJECT NAME: IR-SEE

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Questions to identify measurements:

1. How much improvement was observed in participants' visual capabilities?
2. How much effort was required to implement and conduct the eye exercise program?
3. How much time was spent on testing the effectiveness of the eye exercises?
4. Did the project adhere to its schedule?
5. How has the product evolved over time during the eye exercise program?
6. How frequently were changes made to the modules/components of the eye exercise program?
7. How many errors were found during and after the review?
8. Regarding the implementation of YOLO, how does one evaluate the overall quality of the program, considering metrics such as object recognition accuracy and speed?

Identified measurements:

1. Improvement in visual acuity measured using standardized tests
2. Effort required to develop and implement the eye exercise program
3. Time spent on testing the effectiveness of the eye exercises
4. Scheduled program and time spent to sprints and deviations made
5. Product growth over time, measured by additions or modifications to features, exercises, or materials.
6. Number of changes made to modules/components of the eye exercise program.
 - 7.1 Number of errors found in each reviewed product during the review
 - 7.2 Number of errors found in each reviewed product after the review
 - 8.1 (Precision-Recall Curve) A curve showing the F1 score at different precision thresholds and sensitivity values can be drawn.
 - 8.2 (Cross-Validation) F1 scores can be calculated on different data partitions to evaluate the generalization ability of the model.
 - 8.3 F1 scores can be recorded at regular intervals to monitor how the model's performance changes over time.

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Measurement storage and collection

- Improvement in visual acuity measured using standardized tests

What: Visual acuity measurements before and after the eye exercise program.

When: Before and after the eye exercise program.

Format: Numeric data.

How: Conducted by trained personnel using standardized tests, results recorded electronically or manually.

- Effort required to develop and implement the eye exercise program

What: Effort expended in developing and implementing the eye exercise program.

When: Throughout the development and implementation phases.

Format: Numeric data (hours or person-days).

How: Tracked by project managers or team leads using time-tracking tools or project management software.

- Time spent on testing the effectiveness of the eye exercises

What: Time spent specifically on testing the effectiveness of the eye exercises.

When: During the testing phase of the eye exercise program.

Format: Numeric data (hours or person-days).

How: Tracked by testing teams using time-tracking tools or project management software.

- Scheduled program and time spent on sprints and deviations made

What: Planned versus actual time spent on program sprints and deviations.

When: Throughout the eye exercise program, especially during planning and review phases. Format: Numeric data (hours or person-days).

How: Recorded by project managers or team leads during sprint planning and review meetings.

- Product growth over time, measured by additions or modifications to features, exercises, or materials

What: Changes made to the product over time.

When: Continuously throughout the eye exercise program.

Format: Numeric data (count of additions or modifications).

How: Tracked by development teams using version control systems or change logs.

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- Number of changes made to modules/components of the eye exercise program

What: Changes made to individual modules or components.

When: Throughout the development and implementation phases.

Format: Numeric data (count of changes).

How: Tracked by development teams using version control systems or change logs.

- Number of errors found in each reviewed product during and after the review

What: Number of errors identified in reviewed products.

When: During and after each review session.

Format: Numeric data (count of errors).

How: Recorded by reviewers during review sessions and documented in review reports.

- Precision-Recall Curve:

What: F1 scores at different precision thresholds and sensitivity values.

When: During model evaluation.

Format: Data points representing F1 scores at various precision and recall values.

How: Calculated during model testing, stored as tuples or arrays of precision and recall values with corresponding F1 scores.

- Cross-Validation:

What: F1 scores calculated on different data partitions to evaluate model generalization.

When: During model validation and evaluation.

Format: F1 scores for each fold or partition of the data.

How: Calculated during cross-validation process, stored as an array or list of F1 scores for each fold.

- Recording F1 Scores Over Time:

What: F1 scores recorded at regular intervals to monitor model performance.

When: At predefined intervals (e.g., weekly, monthly, etc.).

Format: F1 scores recorded over time.

How: Calculated during model testing or validation at each interval, stored along with timestamps or intervals.

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Measurement Type	Description	Example Measurements
Improvement in Visual Acuity	Assesses changes in visual acuity using tests before and after the exercises.	User feedback
Effort for Development and Implementation	Measures the resources and time required to develop and implement the eye exercise program.	Hours spent on development; number of personnel involved in program setup.
Time Spent on Effectiveness Testing	Quantifies the duration of testing phases to evaluate the exercises' effectiveness.	Total hours dedicated to testing phases; number of testing cycles completed.
Scheduled Program and Sprints	Details the planned vs. actual time spent on development sprints and notes any deviations.	Sprint schedules; deviations from planned timelines.
Product Growth	Tracks product evolution through feature, exercise, or material additions or modifications over time.	List of added features or exercises; timeline of product updates.
Number of Changes to Modules/Components	Counts modifications made to modules or components of the program.	Change logs; number of module updates.
Number of Errors Found Pre-Review	Amount of errors identified in each reviewed product before quality review.	Error counts before quality assurance processes.
Number of Errors Found Post-Review	Amount of errors found in each reviewed product after quality review.	Error counts after quality assurance processes.
Precision-Recall Curve	A graphical representation showing the F1 score across different precision thresholds and sensitivity values.	Graphs plotting precision vs. recall for different threshold settings.
Cross-Validation F1 Scores	F1 scores from different data partitions to assess the model's generalization ability.	F1 scores for each fold in cross-validation.
F1 Scores Over Time	Regularly recorded F1 scores to monitor changes in the model's performance.	Plot of F1 scores over time during model training and after each update cycle.