Data Dictionary of "Eyes on Code Smells: Analyzing Developers' Responses During Code Snippet Analysis" Paper

01_12_merged_fixation.tsv Data Dictionary

- fixation_id - Unique identifier for each fixation

- fixation_run_id - Identifier for a fixation run, allowing grouping of fixations belonging to the same code.

- fixation_start_event_time - Time when the fixation event started.

- fixation_order_number - Order number indicating the sequence of fixations.

- x - X coordinates on the screen where the fixation occurred.

- y - Y coordinates on the screen where the fixation occurred.

- fixation_target - Name of code file.

- source_file_line - Line in the code file.

- source_file_col - Column in the code file.

- token - Code token where the fixation occurred.

- syntactic_category - Syntactic category of the code.

- xpath - XPath path to the element in the code file.

- left_pupil_diameter - Left pupil diameter (not collected).

- right_pupil_diameter - Right pupil diameters (not collected).

- duration - Duration of the fixation in milliseconds,.

- experiment - Identifier of the developer.

answers_experiments.tsv Data Dictionary

- "experiment_id" - Participant identifier.

- "Timestamp" - Date and time of registration.

- "ParticipantConsent" - Consent of the participant.

- "KnowsCodeSmells" - Read this definition of code smells: Code smells are poor design and implementation choices in code development that affect understanding and maintenance of the software.

- "CodeSnippetXXDesc" - Please, describe how the code snippets works.

- "CodeSnippetXXComplexity" - Is the analyzed code snippets hard to comprehend?

- "CodeSnippetXXExplanation" - Based on the previous answer, explain why.

- "CodeSnippetXXSmell" - Is there a code smell in the analyzed code snippet?

- "CodeSnippetXXSmellType" - What code smell(s)?

- "CodeSnippetXXSmellSeverity" - What is the code smell severity?

- "CodeSnippetXXSeverityReason" - What was your reason for choosing this severity?

- "CodeSnippetXXFeeling" - How did you feel during the analysis of this code snippet? (1 for very uncomfortable to 5 for very comfortable).

- "HighestEducation" - Which is the highest level of formal education that you graduated?

- "ProgExperienceYears" - How long professional experience in programming do you have? (Answer in years and months. Ex.: 1Y3M or 0Y2M)

- "SoftwareDevExperienceYears" - How long professional experience in software development do you have? (Please include programming, testing, administration, management, projects, etc.)

- "JavaExperienceYears" - How long professional experience in programming in Java do you have?

- "LanguagesUsed" - Which programming languages did you use throughout your career?

- "ToolsUsed" - Which of those tools did you ever use?

- "ProfessionalRoles" - Which of those roles have you held throughout your professional career?

- "CurrentRole" - Which of those are your current roles?

- "KnowsCodeReview" - Read this definition of code review: A code review is a process where someone, other than the author(s) of a piece of code, examines that code.

- "UsedCodeReviewTools" - Have you ever used any code review analysis tools?

- "CodeReviewExperience" - Please describe your earlier experience with code review analysis tools.

- "CodeReviewFrequency" - How long have you been conducting regular code reviews for your peers?

- "ComfortableReviewLanguages" - Code in which of those languages would you feel comfortable reviewing?

- "RecognizableSmells" - Which of the following code smells do you believe you can recognize?

- "CodeSmellsAffectMaintenance" - Do you feel that code smells in traditional sense make the code less maintainable?

- "SmellTransferability" - Do you feel that concept of code smell can be transferred between programming languages?

- "MainCodeComprehensionIssue" - What is the biggest problem you encounter in comprehending code written by you or other people?

- "QATechniquesUsed" - Which quality assurance techniques do you use in your daily work?

- "BeliefInReviewBenefit" - Do you believe that reviews contribute to code quality?

- "BiosensorResearchParticipation" - Have you ever participated in any research with biosensors? If yes, please describe.

- "FeelingDuringCodeAnalysis" - How did you feel during the analysis of all code snippets? (1 for very uncomfortable to 5 for very comfortable).

- "BiosensorsImpactOnSmellDetection" - Do you think the use of biosensors (smartwatch and eye tracker) affected your ability to analyze code snippets in search of code smells?

- "BiosensorsValueInSmellAnalysis" - Do you think the use of biosensors by developers can provide valuable data to understand the code smell analysis process?

- "OpenToBiosensorsForCoding" - Would you be open to using biosensors in your daily coding activities to better understand your performance and potentially improve your code quality?

- "BiosensorUsageImprovementSuggestions" - Do you have any suggestions to improve the use of biosensors in the context of code smell analysis?

- "KeyEyeTrackingFeatures" - What features do you think are most relevant when using eye tracking to assess code comprehensibility?