

Quiz 3 - Data Mining for Software Engineering - Results



Attempt 2 of 2

Written Jan 26, 2024 7:21 AM - Jan 26, 2024 7:39 AM

Attempt Score 4.47 / 5 - 89.34 %

Overall Grade (Highest Attempt) 4.47 / 5 - 89.34 %

Question 1

1 / 1 point

Match the examples of data with their general types as described by the authors of the paper.

- | | |
|---------------------------------|--------------|
| __2__ Static call graphs | |
| __1__ Static traces | |
| __1__ Co-changed code locations | |
| __3__ Emails | 1. Sequences |
| __3__ Bug reports | 2. Graphs |
| __2__ Dynamic call graphs | 3. Text |
| __1__ Execution traces | |
| __3__ Documentation | |
| __3__ Code comments | |

Question 2

0.8 / 1 point

The authors of the paper describe some software engineering mining challenges. Mark the alternatives that correctly describe those challenges.

Select 5 correct answer(s)

- ☐ Software engineers should replace data science engineers to reach successful data mining results, since their domain knowledge is very different from general data mining.
- ☒ Data has to be collected from a large amount of software repositories in order to be useful for software developers, since discoveries need to be general for all software systems as science requires.
- ☐ Data from software engineering repositories are too simple to be caught by data mining techniques.
- ☒ The scale of data from software repositories or from execution traces may be large, making it hard to analyze them by mining algorithms.
- ☒ Data may need to be collected on-the-fly from a particular software project in order to be useful to software developers.
- ☒ Software engineering tasks may require the analysis of multiple correlated data types.
- ☐ General data mining techniques do not generally fit the requirements of software engineering.
- ☒ Pattern representation may be complex in the software engineering domain.

Question 3

1 / 1 point

Order the steps of the methodology describes to mine software data according to the authors offered ordering.

- __5__ Postprocess/apply mining results to software engineering tasks
- __4__ Adopt/adapt/develop a data mining algorithm for the given data
- __1__ Collect/investigate software engineering data
- __2__ Determine software engineering task to be supported by data mining
- __3__ Preprocess software engineering data

Question 4

1 / 1 point

Match the data mining techniques used be the authors of the paper with the problem that they intended to solve.

- | | |
|---|--|
| __1__ Iterative pattern mining | 1. Finding behavioral code patterns |
| __5__ Graph classification | 2. Finding temporal invariants |
| __6__ Natural language processing techniques combined with execution trace analysis | 3. Recovering documentation |
| __3__ Sequence diagram and FSM mining | 4. Finding exception handling rules |
| __4__ Sequence association rule mining | 5. Finding potential bugs from testing |
| __6__ Natural language processing techniques | 6. Finding bug report duplicates |
| __2__ Temporal rule mining | |
| __5__ Discriminative graph mining | |

Question 5

0.667 / 1 point

The authors of the paper describe some challenges for future research on data mining for software engineering. Mark the alternatives that correctly describe those challenges.

Select 3 correct answer(s)

- ☒ Expanding the scope of software engineering tasks that can benefit from data mining
- ☐ Training software engineering in the use of data mining techniques
- ☒ Handling the ethical issues related to acquiring developer information from source repositories
- ☒ Adapting general data mining techniques to the context of software engineering
- ☐ Convincing software developers to use data mining-based tools in their work environment
- ☐ Need for increased scalability of mining algorithms for use in SE tools to perform SE tasks

Done