

Automated Debugging

WS 2022/2023

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Exercise 10 (10 Points)

Due: 26. February 2023

Submit your solutions as a Zip file on your status page in the [CMS](#).

We will provide you a structure to submit your solutions where each task has a dedicated file. You can add new files and scripts if you want, but you must not delete any provided ones. You can verify whether your submission is valid by calling `python3`.

```
python3 verify.py
```

The output provides an overview if a required file, variable, or function is missing and if a function pattern was altered. If you do not follow this structure or change it, we cannot evaluate your submission. A non evaluable exercise will result in 0 points, so make sure to verify your work before submitting it. Note that the script does not reveal if your solutions are correct.

Exercise 10-1: Tracking Questions? (10 Points)

For this exercise, you need to read [Tracking Bugs](#) and [Where the Bugs are](#) from The Debugging Book and solve the following tasks. Please provide your answers in `exercise_1.py` in the corresponding variable. You can run `exercise_1.py` to verify that your solutions have the correct format (it raise).

- (1 Point)** Order the following list of information a developer requires to fix a bug in descending order by their importance according to the study of [Bettenburg et al, 2008](#):
 - Test Cases
 - Stack Traces
 - Observed Behavior
 - Hardware
 - Expected Behavior
 - Version
 - Operating System
 - Steps to Reproduce
- (1 Point)** List **five** aspects that will help developers to *effectively* and *efficiently* process issue reports.
- (1 Point)** Name a popular bug-tracking system.
- (1 Point)** List **four** severities that describe the impact of a bug.

5. **(2 Points)** Write a bug report for the **middle** project in `middle/` by filling the dictionary fields of `answer_5` . You can find all information in the project.
6. **(2 Points)** Report the **four** most changed files of `PySnooper` with the `ChangeCounter` .
7. **(1 Point)** Report all commit messages for the single most changed file of `PySnooper` with the `ChangeCounter` .
8. **(1 Point)** Report the current size of the single most changed file of `PySnooper` with the `ChangeCounter` .