Home test – Taliaz LTD

Background:

A medical decision support system is built in such a way that the doctor goes to a dedicated website, enters his patients’ answers to 2 multi-choice questions which are related to sleep disorders (4 options for each question), and an additional question regarding the patient’s medication use history. After the doctor clicks on “submit” – the answers to these questions are fed into a rule-based algorithm (written in Python) which ranks medications according to their sleep-disorders related success rates.

The algorithm sends the ranking (int) in a json format to the application platform, which converts it to a PDF recommendation report with the ranked medications (with 2 options: “recommended” and “not recommended”). The report can be accessed by the doctor both via the website, and an additional PDF copy to the doctor’s email.

The 2 multi-choice questions and the additional question



The medications and the rule-base logic (recommended = 1, not recommended = 2)



The third question (MED\_HISTORY) overrides the rule-based table logic regarding “Doxepin”, unless the answer to it is “No”.

Questions:

1. How would you suggest building **a test framework to test the rule-based algorithm**? (which tools to use, what kind and how many test cases would to create, etc.)

Include both functionality testing & error-handling testing.

* Please write a pseudocode/code that checks that the actual result of the algorithm is according to the expected one.

1. What will be your **plan to test the validity of the data presented in the PDF report** which is sent to the doctor? Is there a way to automate this plan / part of this plan via code? If so, write a pseudocode for at least one automated testing process
2. Write **a bug report** (think of potential bugs, either in the algorithm, the decision support system itself [i.e., the system in which the patient entered their answers], or the PDF report which was sent to the doctor)
3. Let’s say you **found a bug – how would you handle this situation**, what are the **end-to-end steps** to have it fixed.