Unit testing regex_compile() of grep.c

You should read grep.c source code carefully to perform unit testing

(Assertion)

1. Describe and explain test oracles you decide to use

(Unit test environment)

2. Describe all possible inputs including parameters and global data structures which the function access

3. Describe which inputs are declared symbolically and constraints on symbolic inputs and why

4. Describe a unit test driver and unit test stubs/mocks

(Concolic testing)

5. Describe how you modified the target code to improve branch coverage if any

6. Create 10,000 test cases per each of dfs, cfg, random, random_input

7. Measure the branch coverage reported by gcov per search strategy

8. Draw the coverage graph per search strategy as shown in the lecture slides

9. Compare the branch coverage achieved for regex_compile() by system-level concolic testing and unit-level concolic testing.

10. Describe why system-level concolic testing cannot cover the branches the unit testing covers in detail

(option 1) If you are the first one to find a new bug, you will get **extra 200 points** (report a bug on KLMS asap ☺)

(option 2) The persons who achieve the best, 2nd best best coverage among the classmates will get **extra 100 points**.