SE401 – Assignment 7.1

Solve the following questions and submit your answers to LMS.

Homework Tips Checklist for Parents

# Questions

1. Let us consider the following loop statement in C:
   * 1. for ( n = 0;
     2. n < max\_size && (c = getc(yyin)) != EOF && c != ‘\n’;
     3. ++n)
     4. buf[n] = (char) c;

* 1. Derive a set of test cases that satisfy the compound condition adequacy criterion with respect to the loop.
  2. Derive a set of test cases that satisfy the modified condition (MC/DC) adequacy criterion with respect to the loop.

The answers can be provided in the form of tables like the one below

n < max\_size c = getc(yyin) != EOF c != ‘\n’;

Test case

* 1. *True/False/- True/False/- True/False/-*
  2. *True/False/- True/False/- True/False/-*

….

You must identify for each basic condition, which (two) test cases will provide coverage for this condition as required by the MC/DC adequacy criterion by underscoring the *True/False/-* in the table.

1. Let us consider the following if statement in Java
   * + 1. if ( pos < parseArray.length &&
       2. (parseArray[pos] == ‘{‘ ||
       3. parseArray[pos] == ‘}‘ ||
       4. parseArray[pos] == ‘|‘)) {
       5. continue;
       6. }

Derive a set of test cases and show that it satisfies the modified condition (MC/DC) adequacy criterion for this statement. For brevity, abbreviate each of the basic condition as follows:

Room pos < parseArray.length Open parseArray[pos] == ‘{‘

Close parseArray[pos] == ‘}‘ Bar parseArray[pos] == ‘|‘

Provide the answer in a table similar to the one described in Question 1.

1. Let A, B, C, and D be basic conditions. Construct tables of test cases that satisfies the modified condition (MC/DC) adequacy criterion with the fewest number of test cases, for the following compound conditions:
   * 1. (A && B) || (C && D)
     2. (A || B) && (C || D)

Describe the techniques and steps you use to construct your solutions.