LABORATORY 1 : Flowchart / Pseudocode / Test cases

OBJECTIVES

- to understand how to express thoughts/algorithms in flowchart and pseudocode
- to be able to write test cases for simple programs

BACKGROUND

1. Flowchart
   - https://dyclassroom.com/flowchart/introduction
   - https://youtu.be/vOEN65nm4YU
2. Pseudocode
   - https://blog.usejournal.com/how-to-write-pseudocode-a-beginners-guide-29956242698
   - https://youtu.be/r1BpraNa2Zc
3. Whitebox testing – logic coverage
   - https://www.softwaretestinghelp.com/white-box-testing-techniques-with-example/
   - https://www.guru99.com/code-coverage.html
   - The Art of Software Testing (book) by Glenford J. Myers (chapter 4)

LABORATORY 1: Pre-lab, In-lab, Post-lab

Work in pair
For each scenario,

1. write a flowchart
2. write a pseudocode
3. design test cases
   indicate type(or types) of coverage (statement, branch, condition or path) given by your test cases

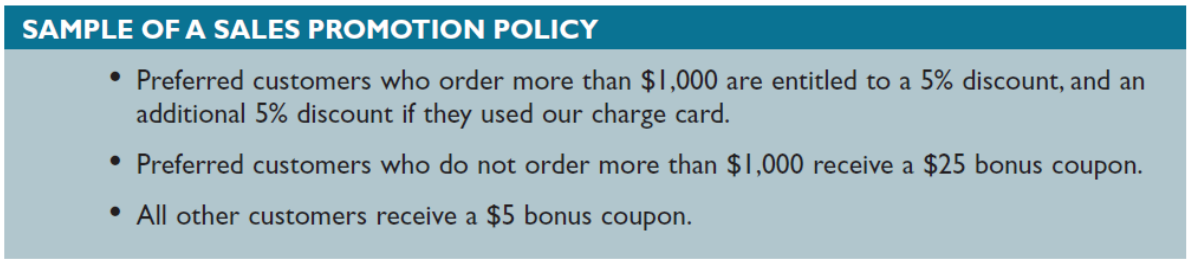
test case	inputs	expected results	coverage
1. test case description	all inputs to the test case	expected results	line numbers in your pseudocode or path IDs in your flowchart
2. …	…	…	…

Scenarios

1. Login attempt
   - username and password are required to login
   - only when username and password are matched, an access is granted
   - secret question is asked after the 3rd unsuccessful login attempts
   - if the answer to the secret question is correct, an access is granted and the login info (username and password) is sent to user's email.

2. Money transfer
   - transfer money from account A to account B
   - fee is charged according to the following rules
     - same bank : transferred amount > THB10,000, fee 1%
     - different bank : fee THB50 + 1%

3. Sales promotion



4. Find all pairs of numbers in a given list that sum to a given value
   Example:
   [1, 2, 3, 4, 5] sum = 6
   result : [1, 5] , [2, 4]

5. Combine two lists by alternatingly taking elements
   Example:
   List 1 : [1, 2, 3]
   List 2 : [a, b, c]
   result : [1, a, 2, b, 3, c]

   Note that list lengths may differ

Submission:

via Canvas

details are posted in Canvas.

You are to review your work with the TAs during lab session.