Assessment Task 2

Instructions

Please refer to the subject outline for more details about this task.

- The due date and time for this assessment task is on 29/09/2024, 11:59pm.
- This assessment is an individual task.
- Submissions will be made through Turnitin, UTS Canvas.
- Tutors will mark student submissions in their respective tutorials.
- Your tutor will distribute marks and feedback and address any marking questions.
- All communications must use your UTS email account – other emails may be ignored.

Assessment task 2 – Part 1: Black Box Testing (10 marks)

Given the function specification a below, can you design test cases by applying each of the following black box testing methods?

- Input Partitioning (4 marks)
- Output Partitioning (3 marks)
- Boundary Value Robustness Testing (3 marks)

Given an array of no more than 100 unique integers sorted in ascending order, arr, and an integer x, the function returns an integer that meets the following conditions:

- If there is no such a value of j that arr[j] equals x, then return **−1**.
- Otherwise, return the value of j that arr[j] equals x.

The function throws an **Exception** for any invalid input, e.g., arr is null, or x is not an integer.

Assessment task 2 – Part 2: White Box Testing (20 marks)

Suppose we have already had implementations of the above function (**Iterative Binary Search Algorithm**) in different programming languages: https://www.geeksforgeeks.org/binary-search/.

Solely based on the source code, can you design test cases for any language version of the **binarySearch()** function by applying each of the following white box testing methods?

- Statement Coverage (5 marks)
- Decision Coverage (5 marks)
- Loop Coverage (5 marks)
- Path Coverage (5 marks)

You are required to complete both parts using a single template (Assignment 2 Template.docx).

Assessment task 2: Marking Criteria

The rubric is available at the Assignment homepage:
https://canvas.uts.edu.au/courses/33511/assignments/201447.