**Task On Essential Programming Concepts**

**Calculate a Student’s Cumulative Score**

1. **Step-by-Step Execution**

* The array scores contain {85, 90, 78, 88, 76, 105}
* The loop runs from i = 0 to i < 5, meaning it iterates over indices 0, 1, 2, 3, 4.
* The values added to totalScore are:
* scores[0] = 85
* scores[1] = 90
* scores[2] = 78
* scores[3] = 88
* scores[4] = 76
* The final cumulative score computed is:

85 + 90 + 78 + 88 + 76 = 417

* The last value (105 at index 5) is not included because the loop stops at i = 4

1. **Bug Analysis**

Bug Identified**:**

* The loop condition i < 5 excludes the last element (scores[5] = 105), even though there are 6 subjects
* This contradicts the problem statement, which expects all scores to be considered

**Corrected Code:**

public static void CumulativeScore()

{

int[] scores = { 85, 90, 78, 88, 76, 105 };

int totalScore = 0;

for (int i = 0; i < 6; i++) // Changed from i < 5 to i < 6

{

totalScore += scores[i];

}

Console.WriteLine("Cumulative Score: " + totalScore);

}

**Corrected Output:**

85 + 90 + 78 + 88 + 76 + 105 = 522

**3. Edge Cases Considered**

* All scores are valid (within 0-100)
* A score exceeds 100 (e.g., 105 is invalid). The program should check and flag such errors
* Empty or missing scores (e.g., an empty array should return a score of 0)
* Negative scores (should be flagged as invalid)
* Non-integer inputs (e.g., decimals or strings should not be allowed).