

Assignment 6 Blackbox Testing

spring 2024

1. Program under Testing

The program accepts 2 non-empty strings and determines which string has a lower number of vowel characters; a, e, i, o, and u.

❑ **Example**

When 'Sun' and 'Special' are entered, the program prints 'Sun'.

When both strings have the same lengths of vowels, the program prints '=='

2. Defining Criteria

- ❑ **Define criteria for applying partitioning.**
 - **Criteria #1. Number of Input Strings**
 - **Criteria #2. Length of a String**
 - **Criteria #3. Number of vowels in a String**

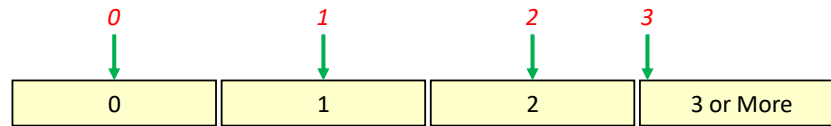
3. Applying Partitioning

- ❑ **Define partitions for each partitioning criterion.**
 - **Partitions for Criteria #1. Number of Input Strings**
 - Number of Input Strings = 0
 - Number of Input Strings = 1
 - Number of Input Strings = 2
 - Number of Input Strings >= 3
 - **Partitions for Criteria #2. Length of a String**
 - Length of a String = 0, i.e. Null String
 - Length of a String = 1
 - Length of a String >= 2
 - **Criteria #3. Number of Vowels in a String**
 - Number of Vowels in a String = 0
 - Number of Vowels in a String = 1
 - Number of Vowels in a String >= 2

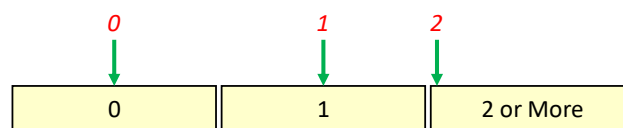
4. Driving Test Cases

- Derive test cases from the partitions. Consider inter-criteria dependency.
Use the following format in writing test cases. Fill in only the white spaces. (20 points)
- Identify values at midpoints and boundaries.

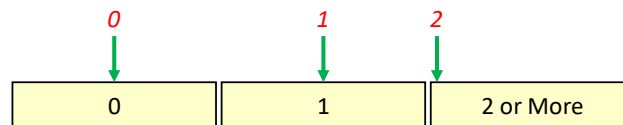
Criteria #1. Number of Input Strings



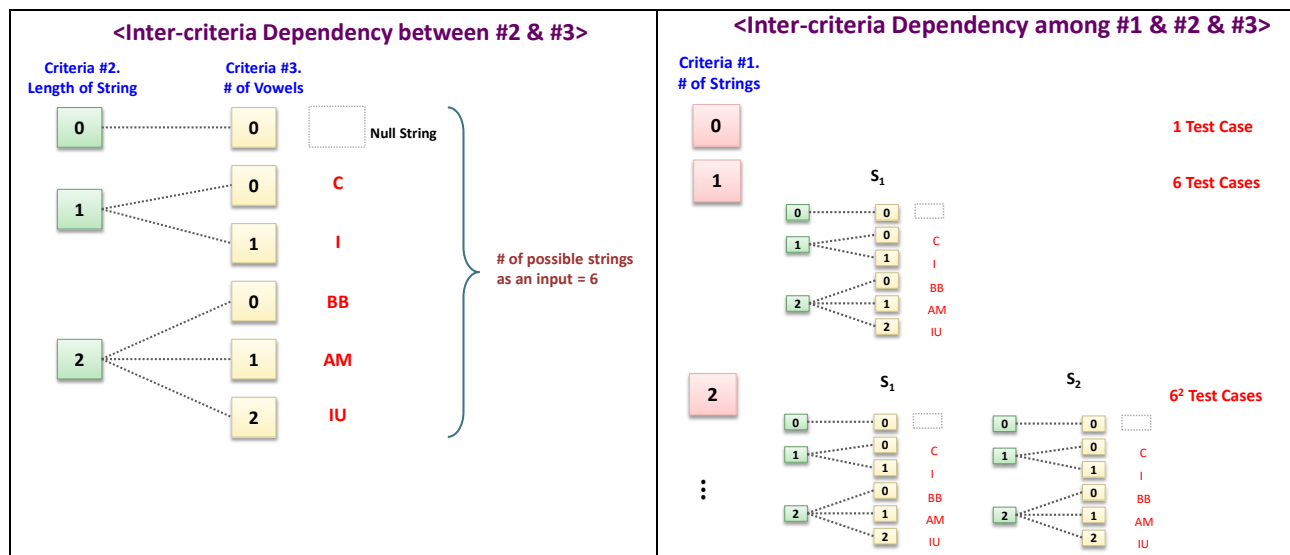
Criteria #2. Length of a String



Criteria #3. Number of Vowels in a String



- Define test cases with the identified values.



Test Cases	Input Strings		Expected Output	Actual Output	
#1	[0 number of string]				
#2	[1 number of string – 0 length – 0 number of vowels]				
	Null string				
#3	[1 number of string – 1 length – 0 number of vowels]				
	C				
#4	[1 number of string – 1 length – 1 number of vowels]				
	I				
#5	[1 number of string – 2 length – 0 number of vowels]				
	BB				
#6	[1 number of string – 2 length – 1 number of vowels]				
	Am				
#7	[1 number of string – 2 length – 2 number of vowels]				
	IU				
#8	[2 number of string]				
	[0 length – 0 number of vowels]	[0 length – 0 number of vowels]			
	Null String	Null String			
#9	[2 number of string]				
	[0 length – 0 number of vowels]	[1 length – 0 number of vowels]			
	Null String	C			
...					
#44	[3 number of string]				
	[0 length – 0 number of vowels]	[0 length – 0 number of vowels]			[0 length – 0 number of vowels]
	Null String	Null String			Null String
...					
Total # of Test Cases		(1 + 6 + 6 ² + 6 ³) = 259			

5. Counting the total number of Test Cases

- ❑ Compute the total number of test cases in the table of test cases.
Show formula and the total.
 - (1 + 6 + 6² + 6³) = 259