

Assignment 5

Input Space Partitioning

1

Question 1

Variable	Characteristic	Partition	Value
Input File	Number of Lines	0 lines	0 lines
		1 line	1 lines
		>1 line and <1,000 lines	742 lines
		>=1,000 lines	1,093,426 lines
	Number of Distinct Tokens	0	0
		1	1
		>1	345
	Maximum Token Frequency	0	0
		>=1	17

Explanations of Partitions

All of my partitions are complete because the domain for each characteristic is 0 to infinity and my partitions cover 0 to infinity. They are disjoint because there is no possible overlap between partitions.

Instructor's Notes:

- One could sub-partition as well. Since one goal is to ensure some files have tokens that appear multiple times, the "Maximum Token" frequency can be split up further to have one block that has tokens appearing once, and another block where at least one token appearing multiple times, and yet another where all tokens appear multiple times. Just be careful stating the blocks so that they are not overlapping.
- For the input values, ideally, one should provide the text file as the input (not list lines or values).
- There could be other characteristics based on the number of words. However, given the nature of the problem to be solved, the appearance of multiple different tokens with multiple different frequencies in some input is important.
- The file size in the number of bytes is not directly relevant to the problem's functionality, although it could be used to stress test the program.

2.

BoundedQueue(int capacity) - Input Space			
Variable	Characteristic	Partition	Value
Capacity	Value	A1. < 0	-1
		A2. == 0	0
		A3. > 0	10

BoundedQueue(int capacity) - BCC		
Test		Oracle
T1 (Base)	A3	Pass
T2	A1	Exception
T3	A2	Exception

enqueue(Object X) - Input Space			
Variable	Characteristic	Partition	Value
Queue	Capacity	A1. == 0	0
		A2. > 0	10
	Curr # of Element	B1. < Capacity	0
		B2. == Capacity	10
	Is Null	C1. True	True
		C2. False	False
Input X	Is Null	D1. True	True
		D2. False	False

enqueue(Object X) - BCC					
Test					Oracle
T1 (Base)	A2	B1	C2	D2	Pass
T2	A2	B1	C2	D1	Fail
T3	A2	B1	C1	D2	Fail
T4	A2	B2	C2	D2	Exception
T5	A1	B1	C2	D2	Exception

deQueue() - Input Space			
Variable	Characteristic	Partition	Value
Queue	Capacity	A1. == 0	0
		A2. > 0	10
	Curr # of Element	B1. < Capacity	0
		B2. == Capacity	10
	Is Null	C1. True	True
		C2. False	False

deQueue() - BCC				
Test				Oracle
T1 (Base)	A2	B1	C2	Object
T2	A2	B1	C1	Fail
T3	A2	B2	C2	Object
T4	A1	B1	C2	Exception

isEmpty() - Input Space			
Variable	Characteristic	Partition	Value
Queue	Capacity	A1. == 0	0
		A2. > 0	10
	Curr # of Element	B1. == 0	0
		B2. > 0	10
	Is Null	C1. True	True
		C2. False	False

isEmpty() - BCC				
Test				Oracle
T1 (Base)	A2	B2	C2	False
T2	A2	B2	C1	Fail
T3	A2	B1	C2	True
T4	A1	B2	C2	Exception

isFull() - Input Space			
Variable	Characteristic	Partition	Value
Queue	Capacity	A1. == 0	0
		A2. > 0	10
	Curr # of Element	B1. < Capacity	0
		B2. == Capacity	10
	Is Null	C1. True	True
		C2. False	False

isFull() - BCC				
Test				Oracle
T1 (Base)	A2	B1	C2	False
T2	A2	B1	C1	Fail
T3	A2	B2	C2	True
T4	A1	B1	C2	Exception