

Kenshin Tanaka(300350728)

Pedro Chen 300350054

Gina Choi (300346654)

Lab7 - Chapter 7

Arrays & C-strings

Total Marks is 50

Q1- [25 marks]: Consider the following tasks that are supposed to be implemented by a function. For each task provide information such as number of inputs, number of outputs, number of pass-by-value parameters, number of pass by reference parameters, type of return value and function prototype. ([answers.pdf](#))

Task description: a function that calculates the average of a list of n double values.				
#inputs	#outputs	Type of return value	#pass-by- value parameters	#pass-by-reference parameters
2	1	double	2	0
Function prototype		double avgList(const double list[], int n);		

Task description: a function that calculates the maximum and minimum of a list of n integer values.				
#inputs	#outputs	Type of return value	#pass-by- value parameters	#pass-by-reference parameters
4	2	void	2	2
Function prototype		void maxMin(const int list[],int n, int &max, int &min);		

Task description: a function that shuffles a list of n integer values.				
#inputs	#outputs	Type of return value	#pass-by- value parameters	#pass-by-reference parameters
2	1	void	1	1
Function prototype		void shuffle(int list[], int n);		

Task description: a function that finds and returns all the even numbers in a list of n integer values.				
#inputs	#outputs	Type of return value	#pass-by- value parameters	#pass-by-reference parameters
3	1	void	2	1
Function prototype		void findEven(const int list[],int n, int evenList[]);		

Task description: a function that prints a list of n double values in a formatted output with x number of digits after decimal point.				
#inputs	#outputs	Type of return value	#pass-by- value parameters	#pass-by-reference parameters
3	0	void	3	0

Function prototype	void printList(const int list[],int n, int x);
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Q2- [25 marks]: Write a program named **Count.cpp** that takes a line from user input and finds out and prints how many words are in the input line. A valid word is a sequence of characters that includes one or more letter. The following examples explain the question and conditions better.

<hello you!> include 2 words.

< hello you! > includes 2 words.

<hello you!> includes 2 words.

<hello you !> includes 2 words.

Use C-string to answer this question. You will be graded 0 if you use strings. You must represent your algorithm using flowchart or pseudocode in **answers.pdf**. Your code will be marked based on correctness, style of your program including the documentation and following conventions.

Submission

Please list the name of all the members of your group in your submission file(s) and only submit one version.

Please submit **answers.pdf** and **Count.cpp** to BB by due time. If you submit any other files such as .zip, .doc, .txt, etc. you will be marked as zero. If you have spent lots of time to finish this assignment please submit it properly.

Pseudocode

```
str = input()

INIT:is_word = False
INIT:ans = 0
for char in str:
    if char is END:
        break
    if char is alphabet:
        is_word = True
    if char is (SPACE or END):
        ans+=1
        is_word = False

print(ans)
```

