

Introduction to Programming 1 – Worksheet 8

Part 1 – Strings and Character input

Question 1

Write a program named Q1.c. This program should ask the user to enter some text and then read the text that the user enters. You should use `getchar` to ensure that the user cannot enter too much text.

Example:

```
Please enter some text: Hello everybody!!!
```

Question 2

Modify the code in Q1.c so that the number of characters the user enters is calculated and printed out.

Example:

```
Please enter some text: hello everybody!!!  
The text contained 18 characters
```

Question 3

Modify the code in Q1.c so that the number of letters the user enters is calculated and printed out.

Example:

```
Please enter some text: hello everybody!!!  
The text contained 18 characters  
14 of the characters are letters
```

Question 4

Modify the code in Q1.c so that the number of vowels in the text is calculated and printed out. Vowels are a, e, i, o and u

Example:

```
Please enter some text: hello everybody!!!  
The text contained 18 characters  
14 of the characters are letters  
There are 5 vowels
```

Question 5

Modify the code in Q1.c so the number of consonants (not vowel letters) is calculated and printed out.

Example:

```
Please enter some text: hello everybody!!!  
The text contained 18 characters  
14 of the characters are letters  
There are 5 vowels  
There are 9 consonants
```

Question 6

Modify the code in Q1.c so that it differentiates between uppercase ('A' to 'Z') and lowercase ('a' to 'z') characters. Additionally, it should count the number of digits ('0' to '9') in the text too.

Example:

```
Please enter some text: Sean Is the Greatest! 1337
The text contained 26 characters
3 of the characters are uppercase letters
14 of the characters are lowercase letters
There are 6 vowels
There are 11 consonants
There are 4 digits
```

Part 2 – Number Representation

Question 7

Write a program named Q7.c. This program should ask the user to enter a number between 0 and 1000 (exclusive). The number should be read into an int variable using scanf.

Question 8

Modify the code in Q7.c so that the number of digits in the number is calculated.

Question 9

Modify the code in Q7.c to create a string and calculate the value of each of the digits of the number the user entered and store them in the string.

Question 10

Modify the code in Q7.c to print out the value of the string using only the putchar function.

Part 3 – String Functions

Question 11

Write a program named Q11.c. This program should read three words from the user using the gets function. Using the strcmp function, to print out the word that comes first in alphabetical order.

Example:

```
Enter the first word: Sean
Enter the second word: Abey
Enter the third word: Justin
<Abey>
```