Task 1

1. Read a positive integer value, and compute the following sequence: If the number is even, halve it; if it's odd, multiply by 3 and add 1. Repeat this process until the value is 1, printing out each value. Finally print out how many of these operations you performed.

Typical output might be:

Inital value is 9

Next value is 28

Next value is 14

Next value is 7

Next value is 22

Next value is 11

Next value is 34

Next value is 17

Next value is 52

Next value is 26

Next value is 13

Next value is 40

Next value is 20

Next value is 10

Next value is 5

Next value is 16

Next value is 8

Next value is 4

Next value is 2

Final value 1, number of steps 19

If the input value is less than 1, print a message containing the word

Error

and perform an

exit( 0 );

2.Write a program to count the vowels and letters in free text given as standard input. Read text a character at a time until you encounter end-of-data.

Then print out the number of occurrences of each of the vowels a, e, i, o and u in the text, the total number of letters, and each of the vowels as an integer percentage of the letter total.

Suggested output format is:

Numbers of characters:

a 3 ; e 2 ; i 0 ; o 1 ; u 0 ; rest 17

Percentages of total:

a 13%; e 8%; i 0%; o 4%; u 0%; rest 73%

Read characters to end of data using a construct such as

char ch;

while(

( ch = getchar() ) >= 0

) {

/\* ch is the next character \*/ ....

}

to read characters one at a time using getchar() until a negative value is returned.