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Lab1

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Write a program to accept a string from the keyboard,

reverse the string, capitalize all alphabet chars in

the string, print each char on its own line, print the

number of alphabet chars capitalized and print the length

f the string.

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//Impliment the library

#include <stdio.h>

//prototype

int getInputLength (char input[]);

void getInput(char \* input);

int isLowerCase(char input);

char convertToUpperCase(char lowerCaseInput);

int capitallizeAndCount(char\* input);

char \* reverseString(char \*string, int stringLength);

void printOutput(int stringLength, int numberOfLowerCase, char \*string);

//5. Function to get string from the keyboard

void getInput(char \* input){

gets(input); //get input

}

//2. Function to get the length of a string

int getInputLength (char input[]){

char i;

//for loop: increasement i until input string hit the ends

for(i = 0; input[i] != '\0'; ++i);

//return number of increasment

return i;

}

//3. check whether a char is lowercase

int isLowerCase(char input){

//return 1 if lowercase else 0

  if (input >='a' && input <= 'z')

    return 1;

  else return 0;

}

//4. convert lower case character to upper case

char convertToUpperCase(char lowerCaseInput){

  //take lowerCase Input and shift down 32 in ASCII Table

    return lowerCaseInput-32;

}

//7. Capitalize all the alpha characters a lower

//case char to uppercase  and count number capitallized

int capitallizeAndCount(char\* input){

int i =0;

  int counter=0;

while (input[i] != '\0'){

if ( isLowerCase(input[i]) == 1) {

      //convert to Upper Case if input is lower Case

input[i]=convertToUpperCase(input[i]);

      //count number of lower Case was capitallized

      counter++;

    }

i++;

}

  return counter;

}

//6.Function to reverse string.

char \* reverseString(char \*string, int stringLength){

   int i;

   char \*begin, \*end, temp;

   //set both begin and end with the string

   begin  = string;

   end    = string;

   for (i = 0; i < stringLength - 1; i++)

      end++;

   for (i = 0; i < stringLength/2; i++)

   {

    //swap the location of end and begin

      temp   = \*end;

      \*end   = \*begin;

      \*begin = temp;

      begin++;

      end--;

   }

   return string;

}

//8.Function to print output.

void printOutput(int stringLength, int numberOfLowerCase, char \*string){

printf("\nThe output should be: \n");

int i;

//for loop to print each char on its own line

for(i=0; string[i]!='\0'; ++i)

   {

    printf("%c",string[i]);

    printf("\n");

   }

//displace number of char and number of char was capitalized

printf("\nThe string is %d chars and %d chars was capitalized.\n\n", stringLength, numberOfLowerCase);

}

//1.Main function

int main() {

// Declare variables

char input[1000];//ask about the length

int inputLength;

int numberOfLowerCase;

//Print Welcome message

printf("Welcome to lab 2\n");

printf("Enter character: ");

//Call 5.Function to get string from a keyboard

getInput(input);

//call 2.Function to get the length of a string

inputLength = getInputLength(input);

//Call 7.Capitalize all the alpha characters a lower

//case char to uppercase  and count number capitallized

numberOfLowerCase = capitallizeAndCount(input);

//Call 6.Function to reverse string.

char \* reverseInput =reverseString(input, inputLength);

//Call 8.Function to print output.

printOutput(inputLength, numberOfLowerCase, reverseInput);

return 0;

}