**Assignment-18 Solution Name: Om Pant**

1. Write a function to calculate length of the string

Sol-

// 1.   Write a function to calculate length of the string

#include<stdio.h>

#include<string.h>

int length(char string[]){

    int i,length=0;

    for(i=0; string[i] != '\0'; i++){

        length++;

    }

    return length;

}

int main(){

    char string[50];

    int strLength;

    printf("Enter a string\n");

    fgets(string,50,stdin);

    string[strlen(string)-1] = '\0';

    //length returns string length

    strLength = length(string);

    printf("Length of Entered string: %d",strLength);

    return 0;

}

1. Write a function to reverse a string.

Sol-

// 2.   Write a function to reverse a string.

#include<stdio.h>

#include<string.h>

void reverse(char string[], int size){

    char revString[size];

    int i,j,length;

    j = strlen(string) - 1;

    length = strlen(string);

    for(i =0; i<length;i++){

        revString[i] = string[j];

        j--;

    }

    printf("Entered String: %s\nReversed String: %s\n",string,revString);

}

int main(){

    char string[50];

    printf("Enter a string\n");

    fgets(string,50,stdin);

    string[strlen(string)-1] = '\0';

    //Function that prints reverse of passed string

    reverse(string, 50);

    return 0;

}

1. Write a function to compare two strings.

Sol-

// 3.Write a function to compare two strings.

#include<stdio.h>

#include<string.h>

int StringCompare(char string1[], char string2[]){

    int i,x=0;

    for(i=0; string1[i] != '\0';i++){

        if(string1[i] == string2[i]){

            x = 0;

        }

        else if(string1[i] > string2[i]){

            x = 1;

        }

        else{

            x = -1;

        }

    }

    return x;

}

int main(){

    int x;

    char str1[50], str2[50];

    printf("Enter 1st String\n");

    fgets(str1,50,stdin);

    str1[strlen(str1)-1] = '\0';

    printf("Enter 2nd String\n");

    fgets(str2,50,stdin);

    str2[strlen(str2)-1] = '\0';

    x = StringCompare(str1,str2);

    if(x ==0 )

        printf("Strings are Same");

    else if(x >0)

        printf("%s is Greater than %s",str1,str2);

    else

        printf("%s is Greater than %s",str2,str1);

    return 0;

}

1. Write a function to transform string into uppercase

Sol-

// 4. Write a function to transform string into uppercase

#include<stdio.h>

void Uppercase(char string[]){

    for(int i=0; string[i] != 0; i++){

        if (string[i]>=97 && string[i]<=122){

            string[i] -= 32;

        }

    }

    printf("Converted Srting:  %s\n",string);

}

int main(){

    char string[50];

    printf("Enter a string\n");

    gets(string);

    Uppercase(string);

    return 0;

}

1. Write a function to transform a string into lowercase

Sol-

// 5. Write a function to transform a string into lowercase

#include<stdio.h>

void Lowercase(char string[]){

    for(int i=0; string[i] != 0; i++){

        if (string[i]>=65 && string[i]<=90){

            string[i] += 32;

        }

    }

    printf("Converted Srting:  %s\n",string);

}

int main(){

    char string[50];

    printf("Enter a string\n");

    gets(string);

    Lowercase(string);

    return 0;

}

1. Write a function to check whether a given string is an alphanumeric string or not. (Alphanumeric string must contain at least one alphabet and one digit)

Sol-

// 6. Write a function to check whether a given string is an alphanumeric string or not. (Alphanumeric string must contain at least one alphabet and one digit)

#include<stdio.h>

#include<string.h>

int AlphaNumeric(char string[]){

  int a = 0,d=0;

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

        if((string[i]>=65 && string[i]<=90) || (string[i]>=97 && string[i]<=122)){

            a++;

        }

        else if (string[i]>=48 && string[i]<=57){

            d++;

        }

    }

    if(a !=0 && d != 0){

        return 1;

    }

    else{

        return 0;

    }

}

int main(){

    char string[100];

    printf("Enter a string\n");

    fgets(string,100,stdin);

    string[strlen(string)-1] = '\0';

    if(AlphaNumeric(string)){

        printf("String is Alphanumeric\n");

    }

    else{

        printf("Not an Alhpanumeric string\n");

    }

    return 0;

}

1. Write a function to check whether a given string is palindrome or not.

Sol-

// 7. Write a function to check whether a given string is palindrome or not.

#include<stdio.h>

#include<string.h>

int Palindrom(char string[]){

    int i,j,flag=1;

    j = strlen(string) -1;

    for(i=0; i<=j; i++){

        if(string[i] == string[j]){

            j--;

        }

        else{

            flag = 0;

            break;

        }

    }

    if(j<i && flag != 0){

        return 1;

    }

    else{

        return 0;

    }

}

int main(){

    char string[100];

    int x;

    printf("Enter a string\n");

    fgets(string,100,stdin);

    string[strlen(string)-1] = '\0';

    x = Palindrom(string);

    if(x != 0 )

        printf("Palindrom\n");

    else

        printf("Not Palindrom\n");

    return 0;

}

1. Write a function to count words in a given string

Sol-

// 8. Write a function to count words in a given string

#include<stdio.h>

#include<string.h>

int COUNT(char string[]){

    int count=1;

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

        if(string[i] == ' ' && string[i+1] != ' '){

            count++;

        }

    }

    return count;

}

int main(){

    char string[100];

    printf("Enter a string\n");

    fgets(string,100,stdin);

    string[strlen(string)-1] = '\0';

    printf("No.of Words : %d\n", COUNT(string));

    return 0;

}

1. Write a function to reverse a string word wise. (For example if the given string is “iNeuron Education Services” then the resulting string should be “Services Education iNeuron” )

Sol-

// 9. Write a function to reverse a string word wise. (For example if the given string is “iNeuron Education Services” then the resulting string should be “Services Education iNeuron” )

#include<stdio.h>

#include<string.h>

void reverse(char string[],int begin, int end){

    char temp;

    int i,j;

    i = begin;

    j = end;

    for(i; i<=j; i++,j--){

        temp = string[i];

        string[i] = string[j];

        string[j] = temp;

    }

}

void revStringWords(char string[]){

    int i, j, x = 0, y = strlen(string)-1;

    // Reversing each words

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

        while(string[j] != ' '){

            if(string[j] == '\0'){

                break;

            }

            j++;

        }

        reverse(string,i,j-1);

    }

    //reversing whole string

    reverse(string,x,y);

    printf("reversed String : %s\n",string);

}

int main(){

    char string[15];

    printf("Enter a string\n");

    fgets(string,100,stdin);

    string[strlen(string)-1] = '\0';

    revStringWords(string);

    return 0;

}

1. Write a function to find the repeated character in a given string.

**Sol-**

// 10. Write a function to find the repeated character in a given string.

#include<stdio.h>

#include<string.h>

void repeatedChar(char string[]){

    char temp[150] = {};

    for(int i=0;string[i]!='\0';i++){

        temp[string[i]]++;

    }

    for(int i=0;i<=150;i++){

        if(temp[i]>=2){

            printf("%c ",i);

        }

    }

}

int main(){

    char string[50];

    printf("Enter a string\n");

    fgets(string,50,stdin);

    string[strlen(string)-1] = '\0';

    repeatedChar(string);

    return 0;

}