DS Assignment-2

1) Write a program to find the length of a given string.

C file:

1.c | first.h | 2.c | second.h | 3.c | third.h | 5.c | fifth.h | 4.c

```c
//Write a program to find the length of a given string.
#include<stdio.h>
#include "first.h"
int main(){
    char str[100];
    printf("Enter the string:\n");
    scanf("%s", &str);
    printf("Length of string is %d",strlength(str));
}
```

Header file:

1.c | first.h | 2.c | second.h | 3.c | third.h | 5.c

```c

int strlength(char str[100]){

    int len;
    for(len=0; str[len]!='\0'; ++len);
    return len;
}
```

Output:

```
C:\Users\Dell\Desktop\DS LAB\Practical 2\1.exe
Enter the string:
HelloWorld
Length of string is 10
--------------------------------
Process exited after 8.839 seconds with return value 22
Press any key to continue . . .
```

2) Write a program to concate two given string.

C file:

1.c | first.h | 2.c | second.h | 3.c | third.h | 5.c | fifth.h

```c
// Write a program to concate two given string.
#include <stdio.h>
#include "second.h"
int main() {

  char string1[100],string2[100];
  printf("Enter the first string:\n");
    scanf("%s", string1);
    printf("Enter the second string:\n");
    scanf("%s", string2);
   printf("%s",concat(string1,string2));
}
```

Header file:

1.c | first.h | 2.c | second.h | 3.c | third.h | 5.c | fifth.h | 4.c

```c
char* concat(char string1[100],char string2[100]){

  int length, j;

  length = 0;
  while (string1[length] != '\0') {
    ++length;
  }

  for (j = 0; string2[j] != '\0'; ++j, ++length) {
    string1[length] = string2[j];
  }

  string1[length] = '\0';

  return string1;

}
```

Output:

```
C:\Users\Dell\Desktop\DS LAB\Practical 2\2.exe
Enter the first string:
Hello
Enter the second string:
World
HelloWorld
--------------------------------
Process exited after 13.13 seconds with return value 10
Press any key to continue . . .
```

3) Write a program to copy one string to another string.

C file:

1.c | first.h | 2.c | second.h | 3.c | third.h | 5.c | fifth.h | 4.c | fou

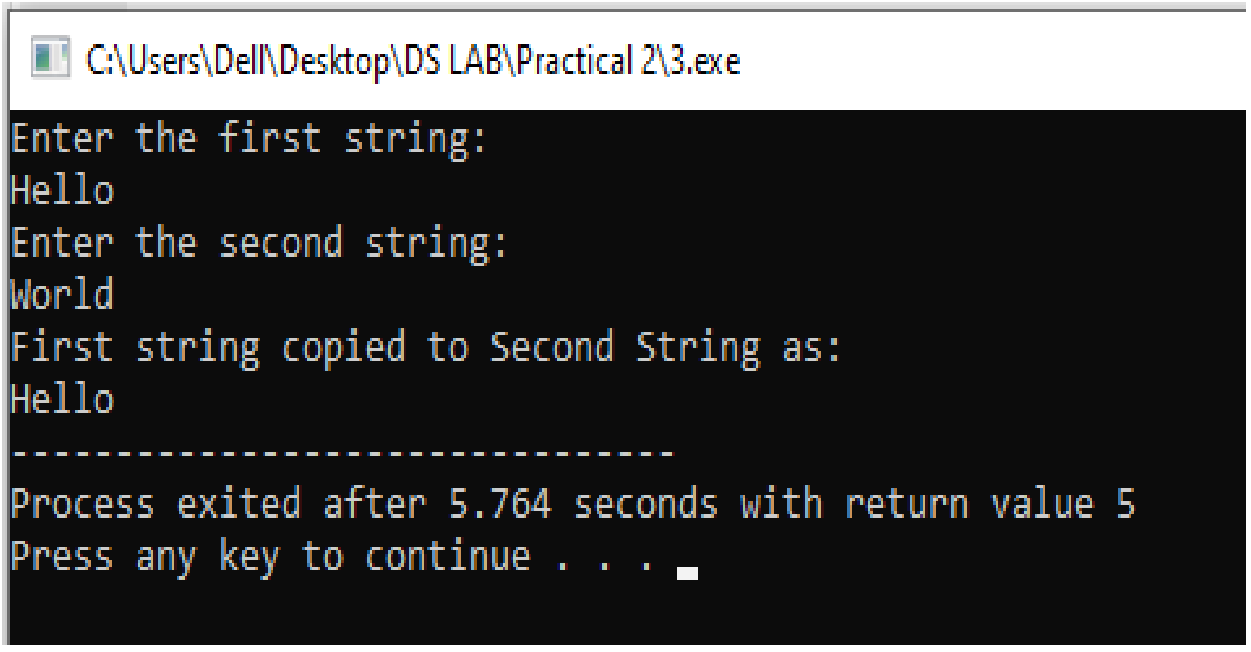
```c
// Write a program to copy one string to another string.
#include<stdio.h>
#include "third.h"
int main()
{
    char text1[100];
    char text2[100];
    int i;
    printf("Enter the first string:\n");
    scanf("%s", text1);
    printf("Enter the second string:\n");
    scanf("%s", text2);
    printf("First string copied to Second String as: \n");
    printf("%s",copy(text1,text2));
}
```

Header file:

1.c | first.h | 2.c | second.h | 3.c | third.h | 5.c | fifth

```c
#include<stdio.h>

char* copy(char text1[100],char text2[100]){
    int i;

    for(i=0; text1[i]!='\0'; i++)
    {
        text2[i] = text1[i];
    }


    text2[i] = '\0';


    return text2;
}
```

Output:



4) Write a program to compare two given string.

C file:

1.c | first.h | 2.c | second.h | 3.c | third.h | 5.c | fifth.h | 4.c | fourth.h

```c
#include<stdio.h>
#include "fourth.h"

int stringCompare(char[], char[]);

int main()
{

    char aj1[100], aj2[100];
    int compare;

    printf("Enter 1st string: ");
    scanf("%s", aj1);

    printf("\nEnter 2nd string: ");
    scanf("%s", aj2);

    compare = stringCompare(aj1, aj2);

    if(compare == 1)
        printf("\nBoth the strings are exactly same.\n\n");
     else
        printf("\nBoth the strings are different.\n");

    return 0;
}
```

Header file:

1.c | first.h | 2.c | second.h | 3.c | third.h | 5.c | fifth.h | 4.c | f

```c
int stringCompare(char mj1[], char mj2[])
{
    int i = 0, flag = 0;
    while(mj1[i] != '\0' && mj2[i] != '\0')
    {

        if(mj1[i] != mj2[i])
        {
            flag = 1;
            break;
        }
        i++;
    }

    if(flag == 0 && mj1[i] == '\0' && mj2[i] == '\0')
        return 1;
    else
        return 0;
}
```

Output:

```
C:\Users\Dell\Desktop\DS LAB\Practical 2\4.exe
Enter 1st string: Hello

Enter 2nd string: World

Both the strings are different.

--------------------------------
Process exited after 13.96 seconds with return value 0
Press any key to continue . . .
```

5) Write a program to search for the first occurrence of the character ‘c’ in the given string.

C file:

1.c | first.h | 2.c | second.h | 3.c | third.h | 5.c | fifth.h | 4.c | fourth.h | 6.c | sixth.h | 7.c

```c
#include<stdio.h>
#include "fifth.h"
int main()
{
    char arr='c', str[100];
    int l;
    printf("Enter the string in which position of letter c is to be known:\n");
    scanf("%s", &str);
    printf("%d", find_c(str,arr));
    return 0;
}

```

Header file:

1.c | first.h | 2.c | second.h | 3.c | third.h | 5.c | fifth.h | 4.

```
1   int find_c(char string[],char c)
2   {
3       int i,pos;
4     for (i = 0; string[i] != '\0'; i++)
5      {
6           if(string[i]==c)
7           {
8               pos=i+1;
9               break;
10          }
11    }
12    return pos;
13
14  }
```

Output:

```
C:\Users\Dell\Desktop\DS LAB\Practical 2\5.exe
Enter the string in which position of letter c is to be known:
Search
5
--------------------------------
Process exited after 24.84 seconds with return value 0
Press any key to continue . . .
```

6)Write a program to find sub string is there in given string or not?

C file:

1.c | first.h | 2.c | second.h | 3.c | third.h | 5.c | f

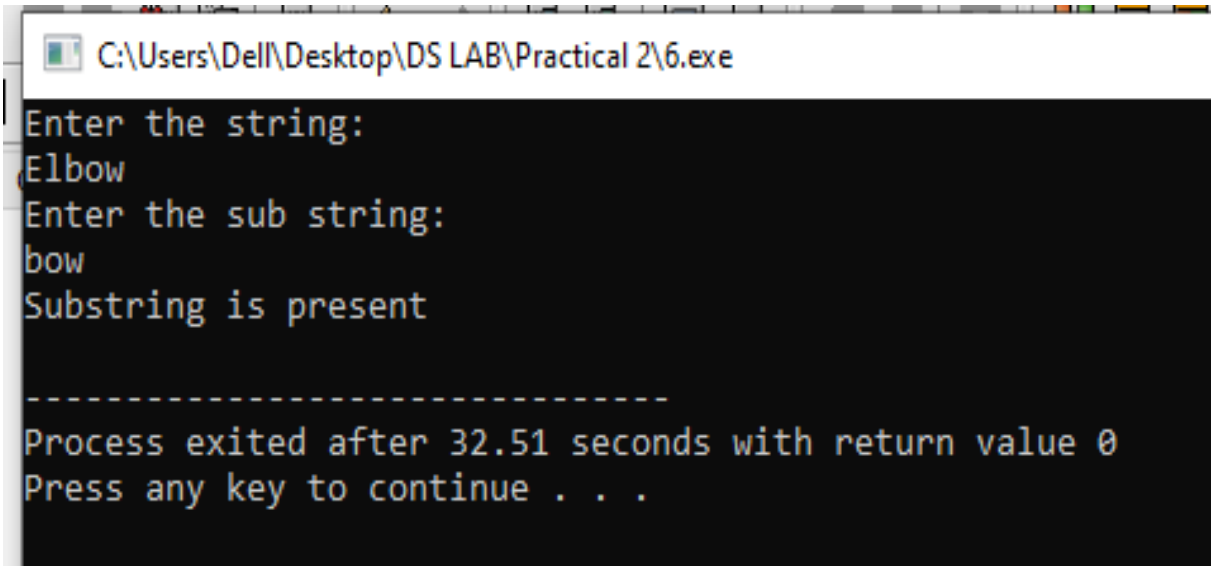
```c
#include<stdio.h>
#include "sixth.h"
int main()
{
    char string1[100];
    char substring[100];
    int i,flag;
    printf("Enter the string:\n");
    scanf("%s", string1);
    printf("Enter the sub string:\n");
    scanf("%s", substring);
    flag = subbstring(string1,substring);

    if(flag == 1)
    {
    printf("Substring is present\n");
    }

     else
     {
     printf("Sub string not present\n");
     }
    return 0;
}
```

Header file:

1.c | first.h | 2.c | second.h | 3.c | third.h | 5.c | fifth.h | 4.c

```c
int subbstring(char string1[],char substring[]){
    int count1 = 0, count2 = 0, i, j, flag;
    while (string1[count1] != '\0')
        count1++;
    while (substring[count2] != '\0')
        count2++;
    for (i = 0; i <= count1 - count2; i++)
    {
        for (j = i; j < i + count2; j++)
        {
            flag = 1;
            if (string1[j] != substring[j - i])
            {
                flag = 0;
                break;
            }
        }
        if (flag == 1)
            break;
    }
    return flag;
}
```

Output:



7) Write a program to generate reverse of a string.

C file:

1.c | first.h | 2.c | second.h | 3.c | third.h | 5.c | fifth.h | 4.c

```c
#include<stdio.h>
#include "seventh.h"
int main()
{
    char a[20];
    printf("Enter the string to be reversed:\n");
    scanf("%s", &a);
    printf("The reversed string is %s",reverse(a));
}

```

Header file:

1.c | first.h | 2.c | second.h | 3.c | third

```
1  char* reverse(char *s){
2      int length=0,i;
3      char temp;
4
5      while(*(s+length)!='\0'){
6          length++;
7      }
8      for(i=0;i<length/2;i++){
9          temp=*(s+i);
10         *(s+i)=*(s+length-i-1);
11         *(s+length-i-1)=temp;
12     }
13     return s;
14 }
```

Output:

C:\Users\Dell\Desktop\DS LAB\Practical 2\7.exe

```
Enter the string to be reversed:
World
The reversed string is dlroW
--------------------------------
Process exited after 2.981 seconds with return value 28
Press any key to continue . . .
```