ASSIGNMENT 18

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Q1. Write a program to display length of input string.

Code:

```c
//this program returns the lenght of the input
#include <stdio.h>

int main()
{
    char s[100];
    int i;

    printf("Enter a string: ");
    scanf("%s", s);

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

    printf("Length of string: %d", i);
    return 0;
}
```

Output:

```
Enter a string: assumption
Length of string: 10
```

Q2. Write a program to display frequency of a letter in a string.

Code:

```c
//this program displays the frequency of a letter in a string
#include <stdio.h>
#include <string.h>

int main()
{
    char b[100], ch, i=0, count=0;
    printf("Enter a string: ");
    gets(b);
    printf("Enter a character to find a frequency: ");
    scanf("%c", &ch);

    while(b[i])
        if(ch==b[i++])
            ++count;

    printf("Frequency of %c = %d", ch, count);
    return 0;
}
```

Output:

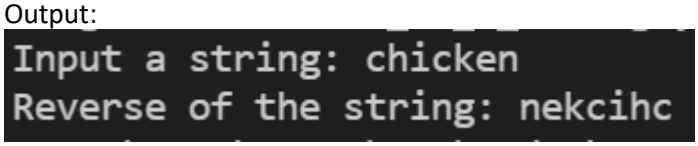
```
Enter a string: weekly
Enter a character to find a frequency: e
Frequency of e = 2
```

Q3. Write a program to display reverse of a string.

Code:

```c
//this program displays the reverse of the imput string
#include <stdio.h>

int main()
{
   char s[1000], r[1000];
   int begin, end, count = 0;

   printf("Input a string: ");
   gets(s);

   while (s[count] != '\0')
      count++;

   end = count - 1;

   for (begin = 0; begin < count; begin++)
   {
      r[begin] = s[end];
      end--;
   }
   r[begin] = '\0';
   printf("Reverse of the string: %s\n", r);
   return 0;
}
```

Output:

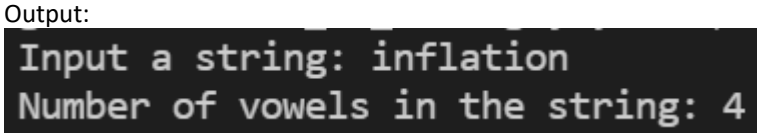


Q4. Write a program to display the number of vowels in a string.

Code:

```c
//this program displays the number of vowels in a string
#include <stdio.h>

int main()
{
  int c = 0, count = 0;
  char s[1000];

  printf("Input a string: ");
  gets(s);

  while (s[c] != '\0') {
    if (s[c] == 'a' || s[c] == 'A' || s[c] == 'e' || s[c] == 'E' || s[c] == 'i' || s[c] == 'I' || s[c]
=='o' || s[c]=='O' || s[c] == 'u' || s[c] == 'U')
      count++;
    c++;
  }

  printf("Number of vowels in the string: %d", count);

  return 0;
}
```

Output:



Q5. Write a program to concatenate 2 strings.

Code:

```c
//this program concatenates  string s2 to  string s1
#include <stdio.h>

int lenght(char*s)
{
    int k=-1;
    while(s[++k]);
    return k;
}

int main()
{
    char s1[100], s2[100], ch;
    int i, j;
    printf("Enter first string: ");
    scanf("%s",s1);
    scanf("%c", &ch);
    printf("Enter second string: ");
    scanf("%s",s2);

    i=0;
    j=lenght(s1);
    while(s1[j++]=s2[i++]);
    printf("After concatenation: %s",s1);
    return 0;
}
```

Output:

```
Enter first string: pine
Enter second string: apple
After concatenation: pineapple
```

Q6. Write a program to determine if the 2 given strings are same or not.

Code:

```c
//this program determines of the given string are same or not
#include<stdio.h>
#include<conio.h>
int main()
{
    char str1[50], str2[50];
    int i=0, chk=0, a;
    printf("Enter First String: ");
    gets(str1);
    printf("Enter Second String: ");
    gets(str2);
    while(str1[i]!='\0' || str2[i]!='\0')
    {
        if(str1[i]!=str2[i])
        {
            a=i;
            chk = 1;
            break;
        }
        i++;
    }
    if(chk==0)
        printf("\nStrings are Equal");
    else
    {
        printf("\nStrings are not Equal");
        printf("\nLetter discrepancy at index %d: ", a);
    }
    getch();
    return 0;
}
```

Output:

```
Enter First String: abhinash
Enter Second String: abhinav

Strings are not Equal
Letter discrepancy at index : 6
```

Q7. Write a program to determine the largest element in a matrix.

Code:

```c
//this program finds the largest element in a matrix
#include <stdio.h>

int ele_max(int mat[5][4])
{
    int i, j, max, sum=0, a[5];
    max=mat[0][0];
    for(i=0;i<5;i++)
    {
        for(j=0;j<4;j++)
        {
            sum+=mat[i][j];
            if(mat[i][j]>max)
                max=mat[i][j];
        }
        a[i]=sum;
        sum=0;
    }
    printf("Maximum element: %d\n\n", max);
    for(i=0;i<5;i++)
        printf("Sum of row %d: %d\n", i+1, a[i]);
}

int main()
{
    int a[5][4]={{1,2,3,4},{11,12,13,14},{5,6,7,8},{15,16,17,18},{21,22,23,24}}, i, j;

    ele_max(a);
    return 0;
}
```

Output:

```
Maximum element: 24

Sum of row 1: 10
Sum of row 2: 50
Sum of row 3: 26
Sum of row 4: 66
Sum of row 5: 90
```