LAB 8

Objective(s):

To understand programming with Pointer, String and Function call by reference.

1. **Write a program to find biggest among three numbers using pointer.**

```
/*Write a program to find biggest among three numbers using
pointer.
*/


#include<stdio.h>
#include<conio.h>
int main()
{
    int *a,*b,*c,x,y,z;
    printf("Enter three numbers:\t");
    scanf("%d%d%d",&x,&y,&z);
    printf("\n");
    a=&x;
    b=&y;
    c=&z;
    if(*a>*b)

    {   if(*a>*c)

        {
            printf("%d is largest.",*a);
        }
        else
        {
    }       printf("%d is largest.",*c);
        }

    else
    {
        if(*b>*c)
        {
```

```
            printf("%d is largest.",*b);
        }
        else
        {
            printf("%d is largest.",*c);
        }
    }
    getch();
    return 0;
}
```

2. Write a program to find the sum of all the elements of an array using pointers.

```
/*Write a program to find the sum of all the elements
of an array
using pointers.*/

#include<stdio.h>
#include<conio.h>
int sum_ar(int *,int);
int main()
{
    int c,i,sum=0;
    printf("How many numbers to be added in the
array?:\t");
    scanf("%d",&c);
    int num[c];
    for(i=0;i<c;i++)
    {
        printf("\nEnter element of num[%d]:\t",i);
        scanf("%d",num+i);
    }
    printf("\nThe sum=%d",sum_ar(num,c));
    getch();
    return 0;
}
int sum_ar(int *k,int a)
{
    int s=0,i;
    for (i=0;i<a;i++)
    {
        s=s+*(k+i);
    }
    return s;
```

```
}
```

3. Write a program to swap value of two variables using function & pointer.

```
/*Write a program to swap value of two variables
using function &
pointer.*/


#include<stdio.h>
#include<conio.h>
void swap(int *,int *);
int main()

{
    int n1,n2;
    printf("Enter two number:\t");
    scanf("%d %d",&n1,&n2);
    printf("\n Before swapping a=%d, b=
    %d",n1,n2); swap(&n1,&n2);
    printf("\n After swapping a=%d, b=%d",n1,n2);
    getch();
    return 0;


}

void swap(int *a, int *b)
{
    int c;
    c=*a;
    *a=*b;
    *b=c;
}
```

4. Write a program to read a string and check for palindrome without using string related function (a string is palindrome if its half is mirror by itself eg: abcdcba).

```
/*Write a program to read a string and check for

palindrome without
```

```
using string related function (a string is palindrome
if its half is
mirror by itself eg: abcdcba).*/

#include<conio.h>

#include<stdio.h>
int main()
{
    int i,j,flag=0,l=0;
    char st[40];
    printf("Enter any string:\t");
    scanf("%s",st);
    for(i=0;st[i]!='\0';i++)
    {
        l=l+1;
    }
    for(i=0,j=l-1;i<l/2;i++,j--)
    {
        if(st[i]!= st[j])
        {
            flag=flag+1;
            break;
        }
    }
    if(flag==1)
    {
        printf("\nNot palindrome");
    }
    else
    {
        printf("\nPalindrome");
    }
    getch();
    return 0;


}
```

5. Write a program to read a sentence and count the number of characters &words in that sentence.

```
/*Write a program to read a sentence and count the
number of
```

```
characters &words in that sentence.*/

#include<stdio.h>
#include<conio.h>

int main()
{
    int i,l=0,ch=0,w=1;
    char s[100];
    printf("Enter any sentence:\t");
    scanf("%[^\n]s",s);
    for(i=0;s[i]!='\0';i++)
    {
        l=l+1;
    }
    for(i=0;i<l;i++)
    {
        if(s[i]!=' ')
        {
            ch=ch+1;
        }
        else if(s[i+1]!=' '&&s[i+1]!='\0')
        {
            w=w+1;
        }
    }
    printf("\nNo. of characters:\t%d",ch);
    printf("\nNo of words:\t%d",w);
    getch();
    return 0;
}
```

6. Write a program to read a sentence & delete all the white spaces.
   Replace all “.” by “:”.

```
/*Write a program to read a sentence & delete all
the white spaces.
Replace all “.” by “:”.*/
#include<stdio.h>
#include<conio.h>
#include<string.h>
int main()
```

```
{
    char s[100];
    int i,l=0,j;
    printf("Enter a sentence:\t");
    scanf("%[^\n]s",s);
   l=strlen(s);
    for(i=0;i<l;i++)
    {
        if(s[i]==' ')
        {
            for(j=i;j<l;j++)
            {
                s[j]=s[j+1];
            }
            l--;
        }
        if(s[i]=='.')
        {
            s[i]=':';
        }
    }
    printf("\n\n");
   printf("%s",s);
   getch();
   return 0;

}

#include<stdio.h>

int main()
{
    char ch1[100],ch2[100];
  int i;
  printf("enter a statement :");
  gets(ch1);
  int space=0;
  for(i=0;ch1[i]!='\0';i++)
  {

         if(ch1[i]==' ')
         {
             space=space+1;
         }
```

```
            else
              {

            if(ch1[i]=='.')
              {

              }
              }ch2[i-space]=ch1[i];



    }
    ch2[i-space]='\0';
    printf("\nentered sentence :%s",ch1);
    printf("\nnew sentence :%s",ch2);
  } return 0;
```

7. Write a program to copy one string to another string with and without using string handling function.

```
/*Write a program to copy one string to another
string without using string handling function.*/

#include<stdio.h>
#include<conio.h>
int main()
{
    char s1[100],s2[100];
    int i;
    printf("Enter a string:\t");
    scanf("%[^\n]s",s1);
    printf("\nString in s1: %s",s1);
    for(i=0;s1[i]!='\0';i++)
    {
        s2[i]=s1[i];
    }
    s2[i]='\0';
    printf("\nString copied to s2:
    %s",s2); getch();
    return 0;
}
```

```
/*Write a program to copy one string to another
string using string handling function.*/

#include<stdio.h>
#include<conio.h>
#include<string.h>
int main()
{
    char s1[100],s2[100];
    int i;
    printf("Enter a string:\t");
   scanf("%[^\n]s",s1);
   printf("\nString in s1: %s",s1);
   strcpy(s2,s1);
    printf("\nString copied to s2:
    %s",s2); getch();
    return 0;
}
```

8. Write a program to concatenate two strings.

```
/*Write a program to concatenate two strings.*/


#include<stdio.h>
#include<conio.h>
#include<string.h>
int main()
{
    char s1[50],s2[50],s3[100];
    printf("Enter string s1:\t");
    scanf("%[^\n]s",s1);
    printf("Enter string s2:\t");
    scanf(" %[^\n]s",s2);
    printf("\ns1=%s",s1);
    printf("\ns2=%s",s2);
    strcat(s1,s2);
    printf("\nThe concatinated string =
    %s",s1); getch();
    return 0;

}
```

9. Write a program to compare two strings.

```
/*Write a program to compare two strings.*/


#include<stdio.h>
#include<conio.h>
int main()
{
    char s1[50],s2[50];
    printf("Enter string s1:\t");
    scanf("%[^\n]s",s1);
    printf("Enter string s2:\t");
    scanf(" %[^\n]s",s2);
    printf("\n%d",strcmp(s1,s2));
    getch();
    return 0;

}
```

10. Write a program to sort 5 string words stored in an array of pointers.

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
#include<stdlib.h>
int main()
{
    int i,j;
    char **s;
    char *temp;
    s=(char **)calloc(5,sizeof(char));
    for(i=0;i<5;i++)
    {
        *(s+i)=(char *)calloc(20,sizeof (char));
    }
    temp=calloc(20,sizeof(char));
    for(i=0;i<5;i++)
    {
        printf("Enter word:\t");
        scanf("%s",s[i]);
```

```
    }

    for(i=0;i<4;i++)
    {
        for(j=i+1;j<5;j++)
        {
            if(strcmp(s[i],s[j])>0)
            {
                strcpy(temp,s[j]);
                strcpy(s[j],s[i]);
                strcpy(s[i],temp);
            }
        }
    }
    printf("\n\nSorted words:\n");
    for(i=0;i<5;i++)
    {
        printf("\n%s",s[i]);
    }
    getch();
    return 0;
}
```

11. Write a program to print the following pattern:

```
U N UNIV
UNIVER
UNIVERSI
UNIVERSITY
UNIVERSI
UNIVER
UNIV

U N
```

```
#include<stdio.h>
#include<conio.h>
int main()
{
    char s[]="UNIVERSITY";
    int i,j;
    for(i=1;i<6;i++)
    {
        for(j=0;j<(i*2);j++)
        {
            printf("%c ",s[j]);
        }
        printf("\n");

    }
    for(i=4;i>=1;i--)
    {
        for(j=0;j<(i*2);j++)
        {
            printf("%c ",s[j]);
        }
        printf("\n");
    }
getch();
return 0;
}
```