

**King Saud University  
Collage of Applied Medical Sciences  
Biomedical Technology Department**

***BMT 485  
Level 9  
Lab 5***

***More C language functions***

## **Objectives**

Upon completion of this lab you'll be able to understand the following points

- Decision making using switch ... case statement
- Arrays, strings, and strings functions
- Pointers
- Far pointers
- Structures
- Stack LIFO
- First In First Out (FIFO)
- Linked lists
- Unions

## **Introduction**

This lab starts on using the C language statements that control the program flow and explain how to made decision.

## **Pre-requisite**

"Subjects to be understood before launch this lab"

No special pre-requisites are needed.

## **Required equipments**

- PC and BorlandC under DOS

## Experiment steps

- Decision making using switch ... case statement

**Switch (operand)**

```
{  
Case “: ”:  
//body of this case  
Break;  
Case “: ”:  
Break;  
Default:  
}
```

**Conditional operator**

**Max=(num1>num2) ? num1 : num2;**

**This statement is equal to the following code**

**If(num1<num2)**

**Max=num2;**

**Else**

**Max=num1;**

**Example**

**abs=(num<0) ? -num : num;**

- Arrays and strings

**int x[10];**

**float y[10];**

**char ch[80];**

```

void main (void)
{
int temp[7];
int day,sum;
    for(day=0;day<7;day++)
    {
        printf("\n Enter temperature for day%d: ",day);
        scanf("%d",&temp[day]);
    }
sum=0;
    for(day=0;day<7;day++)
        sum=sum+temp[day];
printf("Average is %d",sum/7);
}

```

**Initialize an array**

```
int table[5]={10,20,30,40,50};
```

**Sorting an array?? Report**

**Write a program to enter an integer array of 10 integers and to sort it then display the sorted array on the screen**

- **Strings**

```
printf("%s", "greatings");
```

```

void main (void)
{
char name[80];
printf("\n Enter your name: ");
scanf("%s",name);
}

```

```
void main(void)
```

```

{
char [80]
}

```

- **Pointers**

**Define a pointer → int \*ptr**

**Put a value to the variable that the pointer points to → \*ptr=40;**

**void rets2(int \*, int \*);**

**void main (void)**

**{**

**int x,y;**

**rets2(&x,&y);**

**printf("\n first is %d second is %d",x,y);**

**getch();**

**}**

**void rets2(int \*px, int \*py)**

**{**

**\*px=3;**

**\*py=4;**

**}**

**//////////**

**void addcon(int \*px,int \*py);**

**void main (void)**

**{**

**int x=4,y=6;**

**addcon(&x,&y);**

**printf("first is %d second is %d");**

**getch();**

**}**

**void addcon(int \*px,int \*py)**

**{**

**\*px=\*px+10;**

**\*py=\*py+10;**

**}**

////////////////////////////////////

```
void main(void)
{
int num[]={92,81,70,69,58};
int index;
for(index=0;index<5;index++)
printf("\n %d",*(num+index));
getch();

}
```

////////////////////////////////////

```
void main(void)
{
float temp[40];
float sum=0.0;
int num,day=0;
float *ptr;
ptr=temp;
do
{
printf("\n Enter temperature for the day%d",day++);
scanf("%f",ptr);
}while(*(ptr++)>0);
ptr=temp;
num=day-1;
for(day=0;day<num;day++)
sum=sum+*(ptr+day);
printf("the Average is %f",sum/num);
getch;
}
```

////////////////////////////////////

## **String functions and pointers**

**strchr(string, character);**// scan a given string for the first occurrence of a given character <string.h>

**on success return a pointer to the first occurrence**

**on error return a null**

**#include <string.h>**

**void main(void)**

**{**

**char ch,line[80],\*ptr;**

**puts("Enter the sentence to be searched: ");**

**gets(line);**

**printf("Enter a character to search for: ");**

**ch=getche();**

**ptr=strchr(line,ch);**

**printf("\n String starts at address %u\n",line);**

**printf("\n the first occurrence of the character is at address %u\n",ptr);**

**printf("the searched character position is at %d (starting from 0)"ptr-line);**

**getch();**

**}**

## **Structures**

**////////////////////**

**void main (void)**

```
{  
    struct easy  
    {  
        int num;  
        char ch;  
    };  
    struct easy st1;  
    st1.num=100;  
    st1.ch='d';  
}
```