**LAB # 10**

**OBJECT**

***Implementation of Arrays***

**THEORY**

## Arrays

Arrays are the collection of similar data elements of certain type, placed contiguously in memory. If you have similar type of data variables, which are used in the same way all the time during program execution, then for convenience you can organize these elements and give a unique variable name to the collection of these data elements.

## Array definition

Arrays are defined generally as:

type array\_name [array size] ;

The type describes the data type of the array, array\_name is the unique identifier by which the array can be accessed and size describes the number of elements the array can store.

For example:

int day [7];

This describes an array ‘day’ of type integer and this array can store 7 records.

## Reading or writing into an array

Once an array is described then its individual elements can be read or written. The element of an array can be referred by the array name including the subscript. This subscript is a number included in the brackets.

For example:

day [4]

This describes the 4th element of the array ‘day’.

## Selection of data type of the array

The data type of the array is selected according to the need of the program elements. For example if simple non decimal number are to be stored in the array then you can describe an array of integers or you can describe an array of data type float or double for decimal numbers.

## Limit of an array

Limit of an array is the maximum number of element it can store. If the number of the element is unknown then it is convenient to define the limit of the array.

## Example-1

This program describes an array of 10 integers and prints.

#include “stdio.h’

void main (void)

{

int arr [10] ;

int i,j;

for ( i = 0 ; i < 10 ; i ++ )

{

printf (“Enter element at %d position:”,i);

scanf(“%d”, &arr[i]);

}

for ( j = 0 ; j < 10 ; j ++ )

{

printf (“Element at position %d is : %d\n”, j, arr[j]) ;

}

**TASKS TO BE PERFORMED**

1. Write a program to print elements of an array in reverse order.

# PROGRAM

#include<stdio.h>

int reverse();

int main(){

reverse();

getchar();

}

int reverse(){

int a[5];

for(int i=0;i<=5;i++){

printf("\nEnter number: ");

scanf("%d",&a[i]);

}

printf("\nAnswer in reverse: ");

for(int x=5;x>=0;x--){

printf("\t%d",a[x]);

}

}

1. Write a program that accepts temperature of 7 days from user and print there average using array.

# PROGRAM

#include<stdio.h>

int temp();

int main(){

temp();

}

int temp(){

float temp[6], sum=0.0, average;

for(int x=1;x<=7;x++){

printf("Enter temperature of day %d: ",x);

scanf("%f",&temp[x]);

sum+=temp[x];

}

average=sum/7;

printf("\nAverage weather for seven day will be: %f",average);

}

1. Write a program to search a number in an array of 10 elements.

# PROGRAM

#include<stdio.h>

int find();

int main(){

find();

}

int find(){

int a[30], ele, num, i;

printf("\nEnter no of elements :");

scanf("%d", &num);

printf("\nEnter the values :");

for (i = 0; i < num; i++) {

scanf("%d", &a[i]);

}

printf("\nEnter the elements to be searched :");

scanf("%d", &ele);

i = 0;

while (i < num && ele != a[i]) {

i++;

}

if (i < num) {

printf("Number found at the location = %d", i + 1);

} else {

printf("Number not found");

}

return (0);

}