Assignment VI

1. **What is pointer and explain its applications. Write a program that uses pointer to copy an array of double.**

Ans: Pointer is the variable that holds address of another variable of same data type.

The application of pointer are explained below:-

* Pointer allow C to support dynamic memory management.
* Pointer reduce length and complexity of the programs.
* Pointer are more efficient in handling arrays and data tables.
* They increase the execution speed and thus reduce the program execution time.
* Pointer can be used to return multiple value from a function via function arguments.
* The use of pointer arrays to character string results in saving of data storage space in memory.
* Pointer permit reference to functions and thereby facilitating passing of functions as arguments to other functions.
* Pointer provide an efficient tool for manipulating dynamic data structure such as structures, linked list, queues, stacks and trees.

**Program that uses pointer to copy an array of double.**

#include<stdio.h>

#include<conio.h>

1. **Write a function that is passed with an array of n pointer which return the maximum.**

Ans:- A program with a function that is passed with an array of n pointers which returns the maximum is given below:

#include<stdio.h>

int max(int \*parr, int n){

int i;

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

if (\*parr < \*(parr + i)){

\*parr = \*(parr+i);

}

}

return \*parr;

}

int main()

{

int n,i,maximum;

printf("How many numbers do you want ? :");

scanf("%d",&n);

int arr[n];

printf("Enter %d numbers : \n",n);

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

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

}

maximum = max(arr,n);

printf ("The MAXIMUM number you entered is %d",maximum);

return 0;

}

1. **Justify that pointer is jewel in C language.Write a function that is passed an array of n pointers to float and returns a newly created array that contains those n float value in reverse order.Assume any necessary data**.

Ans:- A pointer is a derived data type in C. Pointer are undoubtedly one of the most distinct and exciting features of C language . It has added power and flexibility to the language.

Pointer are more efficient in handling arrays and tables. Pointer can be used to support dynamic memory management .Pointer reduce length and complexity of programs.

It increases the execution speed and thus reduce the program execution time by following characters. So we conclude that the real power of C lies in a proper use of pointers.

Thus, pointer is jewel in C language.

***Program***

#include<stdio.h>

#include<conio.h>

Int main(){

1. **Write a function that uses pointer to search for address of the given integer in a given array. It the given integer is found , the function return its address; otherwise return null.**

Ans:-

1. Write a program that uses pointer to copy an array of integer.

Ans:-

#include<stdio.h>

#include<conio.h>

int main()

{

int n;

int i;

printf("\nEnter the number of element in the array:") ;

scanf("%d",&n);

int \*p,a1[n];

p=&a1[n];

printf("Enter %d element:",n);

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

scanf("%d",&a1[i]);

}

printf("\nThe element of the array are:");

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

printf("\na1[%d]%d\t",i,\*(a1+i));

}

printf("\n\nthe copied array is:\n");

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

printf("\na2[%d]=%d\t",i,\*(a1+i));

}

return 0;

}

1. **Write a function that is passed through the array of n pointers to float and return a newly created array that contain hose n float values.**

Ans:-

1. **Explain the pointer to structure with example**.

Ans:-

1. **Explain the pointer arithmetic with example.**

Ans:-

1. **Write a program to sort ‘n’ number in ascending order using dynamic memory.**

Ans:-

1. **What is dynamic memory allocation (DMA) ? How can you use it in C ?**

Ans:

1. **What are the advantage over dynamic memory allocation over static memory allocation?**

Ans:

1. **How is malloc() function different from calloc() function?**

Ans:-

1. **Write a program to read number of employee, ‘n’ working in a company . Reserve the memory required to store age of ‘n’ employee using malloc() function. Read age of ‘n’ employees from user and count the number of employees of age over 80 years.**

Ans:-

1. **Write a program to read a matrix of size m\*n entered by the user and display its transpose of matrix using dynamic memory allocation (DMA).**

Ans:-