**POINTER WITH MULTI-DIMENSIONAL ARRAY**

|  |  |
| --- | --- |
| 10 | 100 |
| 20 | 200 |
| 30 | 300 |

arr[0][0] =10

arr[0][1] =100

arr[1][0] = 20

arr[1][1] = 200

arr[2][0] = 30

arr[2][1] = 300

/\* program to print the values and address of the array element\*/

#include<stdio.h>

main()

{

int arr[3][2]= {

{10,100},

{20,200},

{30,300}

};

int I,j;

for(i=0;i<3;i++)

{

printf(“address of %d array = %u\n”,i,&arr[i]);

for(j=0;j<2;j++)

printf(“value = %d\n”,arr[i][j]);

}

}

Output:

address of 0 array = 1000

value = 10

value = 100

address of 1 array = 1004

value = 20

value = 200

address of 2 array = 1008

value = 30

value = 300

1-D array

arr = arr[0] = \*(arr+0)

arr[1] = \*(arr+1)

arr[i] = \*(arr+i)

**2-D array**

arr[0][1] = \*(arr[0]+1) = \*(\*(arr+0)+1)

arr[i][j] = \*(arr[i]+j) = \*(\*(arr+i)+j)

**3-D array**

arr[i][j][k] = \*(arr[i][j]+k)

= \*(\*(arr[i]+j)+k)

= \*(\*(\*(arr+i)+j)+k)

**ARRAY OF POINTERS:**

#include<stdio.h>

main()

{

int \*arr[3];

int a = 5, b = 10, c = 15, i;

arr[0] = &a;

arr[1] = &b;

arr[2] = &c;

for( i=0;i<3;i++ )

{

printf(“address = %u\t”,arr[i]);

printf(“value = %d\n”, \*(arr[i]));

}

}