

The background consists of a central horizontal band of dark gray, which is wider than the other sections. On either side of this band are vertical panels of a lighter purple color, featuring a subtle diamond or checkerboard pattern. The top and bottom sections of the image are solid light gray.

ARRAY

TYPES OF ARRAY

TYPES OF ARRAY

1. **One Dimension Array**
2. **Two Dimension Array**
3. **Three Dimension Array**

```
#include <iostream.h>
#include<conio.h>
void main()
{
clrscr();
    {
char a[6]="yogesh";
cout<<a[5]<<endl;
    }
getch();
}
```

```
#include <iostream.h>
#include<conio.h>
void main()
{
    clrscr();
    {
        char a[6]="yogesh";
        Int i;
        for(i=0;i<6;i++)
            cout<<a[i];
    }
    getch();
}
```

One Dimension Array

```
void main()
{
int a[5],i,sum;
cout<<"enter the five numbers for array:"<<endl;
for(i=0;i<5;i++)
{
cin>>a[i];
}
cout<<"numbers are as Follows:"<<endl;
for(i=0;i<5;i++)
{
cout<<"a["<<i<<"]="<<a[i]<<endl;
}}
```

2D ARRAY

Two Dimension Array

	Column 1	Column 2	Column 3	Column 4
Row 1	<code>x[0][0]</code>	<code>x[0][1]</code>	<code>x[0][2]</code>	<code>x[0][3]</code>
Row 2	<code>x[1][0]</code>	<code>x[1][1]</code>	<code>x[1][2]</code>	<code>x[1][3]</code>
Row 3	<code>x[2][0]</code>	<code>x[2][1]</code>	<code>x[2][2]</code>	<code>x[2][3]</code>

Different ways to initialize two dimensional array

```
int c[2][3] = {{1, 3, 0}, {-1, 5, 9}};
```

```
int c[][3] = {{1, 3, 0}, {-1, 5, 9}};
```

```
int c[2][3] = {1, 3, 0, -1, 5, 9};
```

Two Dimension Array

```
#include<iostream.h>
#include<conio.h>
void main()
{
int a[3][2]={{2,-5},{4,0},{9,1}};
clrscr();
for(int i=0;i<3;i++)
{
for(int j=0;j<2;j++)
{
cout<<"a["<<i<<"]["<<j<<"]="<<a[i][j]<<endl;
}
} getch(); }
```

Example - Two Dimension Array

```
void main()
{
int arr[3][3];
int i,j;
cout<<"Enter 9 Number:"<<endl;
for(i=0;i<3;i++)
{
for(j=0;j<3;j++)
{
cin>>arr[i][j];
}
}

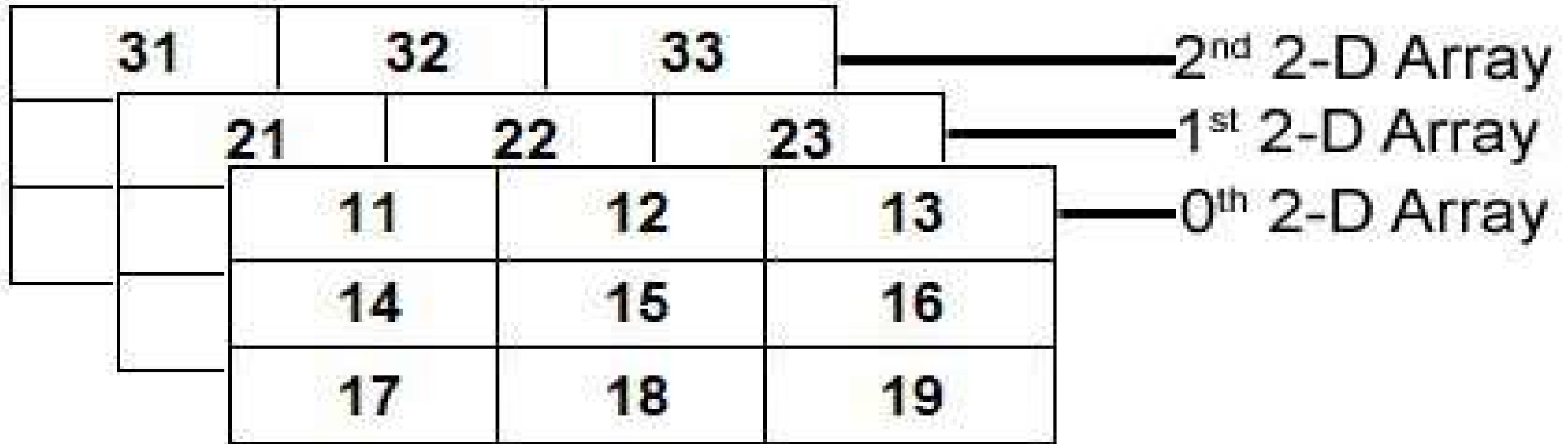
cout<<"number are as follows:"<<endl;
{
for(i=0;i<3;i++)
{
for(j=0;j<3;j++)
{
cout<<"\t"<<arr[i][j];
}
cout<<"\n"<<endl;
}
} getch(); }
```

3D ARRAY

Three Dimension Array

- ✓ A 3D array is essentially an array of arrays of arrays:
- ✓ it's an array or collection of 2D arrays,
- ✓ and a 2D array is an array of 1D array.
- ✓ It may sound a bit confusing, but as you practice working with multidimensional arrays, you start to grasp the logic.
- ✓ The next diagram will help you to understand:

Three Dimension Array



<----- 0 th 2D Array ----->									<----- 1 st 2D Array ----->									<----- 2 nd 2D Array ----->								
11	12	13	14	15	16	17	18	19	21	22	23	24	25	26	27	28	29	31	32	33	34	35	36	37	38	39
1000	1002	1004	1006	1008	1010	1012	1014	1016	1018	1020	1024	1026	1028	1030	1032	1034	1036	1038	1040	1042	1044	1046	1048	1050	1052	1054

```
void main()
{
int i,j,k, a[2][2][2];
cout<<"enter values"<<endl;
for(i=0;i<2;i++)
{
for(j=0;j<2;j++)
{
for(k=0;k<2;k++)
{
cin>>a[i][j][k];
}
}
}
}
```

```
for(i=0;i<2;i++)
{
for(j=0;j<2;j++)
{
for(k=0;k<2;k++)
{
cout<<"a["<<i<<"]["<<j<<"]["<<k<<"]="<<a[i][j][k]<<endl;
} } } }
```

Example - Three Dimension Array

```
#include<stdio.h>
#include<conio.h>
void main()
{
int i, j, k;
int arr[3][3][3]=
    {
        {
            {11, 12, 13},
            {14, 15, 16},
            {17, 18, 19}
        },
        {
            {21, 22, 23},
            {24, 25, 26},
            {27, 28, 29}
        },
        {
            {31, 32, 33},
            {34, 35, 36},
            {37, 38, 39}
        }
    },
};
```

```
clrscr();  
cout<<":::3D Array Elements:::\n\n"<<endl;  
for(i=0;i<3;i++)  
{  
for(j=0;j<3;j++)  
{  
for(k=0;k<3;k++)  
{  
cout<<"\t"<<arr[i][j][k];  
}  
cout<<"\n"<<endl;  
}  
cout<<"\n"<<endl;  
} getch(); }
```

Three Dimension Array

:::3D Array Elements:::

11	12	13
14	15	16
17	18	19
21	22	23
24	25	26
27	28	29
31	32	33
34	35	36
37	38	39

35	38	33
34	32	39

FINDING AVERAGE

```
void main()
{
    double i,count,sum, average ,intputArray[50];
    clrscr();
    cout<<"Enter the number of element"<<endl;
    cin>>count;
    cout<<"enter "<<count<<"elements\n"<<endl;
    for(i=0;i<count;++i)
    {
        cin>>intputArray[i];
    }
```

```
sum=0;
for(i=0;i<count;i++)
{
    sum +=intputArray[i];
}
average=sum/count;
cout<<"Average="<<average;
getch(); }
```

ARRAY with FUNCTION

Array with Function

```
#include<iostream.h>
#include<conio.h>
void display(int);
void main()
{
clrscr();
int i;
int marks[]={23,34,45,62,78};
for(i=0;i<5;i++)
{
display(marks[i]);
}
getch();
}
```

```
void display(int m)
{
cout<<"\n\n"<<m;
cout<<"\t modified array is:"<<m+2;
}
```

THANKS