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**Labsheet-5 (Array)**

**1.**

```
#include <stdio.h>
```

```
#include <stdlib.h>
```

```
int main()
```

```
{
```

```
    int m[3][3] = {0}, i,j,det ;
```

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

```
    {
```

```
        for (j=0 ; j<3; j++)
```

```
        {
```

```
            printf("Please enter the value of (%d,%d): ",i+1,j+1);
```

```
            scanf("%d", &m[i][j]);
```

```
        }
```

```
    printf("\n");
```

```
}
```

```
printf("You just input this matrix: \n");
```

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

```
{
```

```
    for (j=0 ; j<3; j++)
```

```
    {
```

```
        printf("%2d ",m[i][j]);
```

```
    }
```

```
    printf("\n");
```

```
}
```

```
det = ((m[0][0]*((m[1][1]*m[2][2])-(m[2][1]*m[1][2])))
```

```
        -(m[0][1]*((m[1][0]*m[2][2])-(m[2][0]*m[1][2])))
```

```
        +(m[0][2]*((m[1][0]*m[2][1])-(m[2][0]*m[1][1]))));
```

```
printf( "The determinant of this matrix is: %d",det);
```

```
return 0;
```

```
}
```

## 2.

```
#include <stdio.h>
#include <stdlib.h>

int main()
{
    int a[5][5]={0}, i,j,k;

    for (i=0; i<5; i++)
    {
        for (k=1; k<=5-i; k++)
        {
            printf(" ");
        }
        for (j=0; j<=i; j++)
        {
            if ((j==0) || (j==i))
            {
                a[i][j]=1;
            }
            else
            {
                a[i][j] = a[i-1][j-1]+a[i-1][j];
            }
            printf("%d ", a[i][j]);
        }
        printf("\n");
    }
    return 0;
}
```

## 3.

```
#include <stdio.h>
#include <stdlib.h>

int main()
{
    int m[3][3]={0}, i,j, sc=0, ec=2, sr=0, er=2;
    printf("\tFor (3x3) matrix\n");

    for (i=0; i<3; i++)
    {
        for (j=0; j<3; j++)
```

```

    {
        printf("Please enter the value of (%d,%d): ",i+1,j+1);
        scanf("%d",&m[i][j]);
    }
}
printf("\nYour inputed matrix is:\n");
for (i=0; i<3; i++)
{
    for (j=0; j<3; j++)
    {
        printf("%3d ", m[i][j]);
    }
    printf("\n");
}

printf("\nSpirally: ");
for (i=sc; i<=ec; i++)
{
    printf("%d ", m[sr][i]);
}

sr+=1; //sr=1

for (i=sr; i<=er; i++)
{
    printf("%d ", m[i][ec]);
}
ec-=1; //ec=1

for (i=ec; i>=sc; i--)
{
    printf("%d ", m[er][i]);
}
er-=1; //er=1
for (i=sr; i<=er; i++)
{
    printf("%d ", m[i][sc]);
}
sc+=1;
for(i=sc; i<=ec; i++)
{
    printf("%d ", m[sr][i]);
}
return 0;
}

```