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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;

}