Assignment no 16

1. #include<stdio.h>

int main(){

int A[3][3] = {{1, 1, 1},{2, 2, 2},{3, 3, 3}};

int B[3][3] = {{2, 1, 3},{2, 4, 2},{5, 3, 3}};

int C[3][3];

int i, j;

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

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

C[i][j]=A[i][j]+B[i][j];

}

printf("Result matrix is \n");

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

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

printf("%d ",C[i][j]);

printf("\n");

}

return 0;

}

2. #include<stdio.h>

int main(){

int A[3][3] = {{1, 1, 1},{2, 2, 2},{3, 3, 3}};

int B[3][3] = {{2, 1, 3},{2, 4, 2},{5, 3, 3}};

int C[3][3];

int i, j;

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

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

C[i][j]=A[i][j]\*B[i][j];

}

printf("Result matrix is \n");

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

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

printf("%d ",C[i][j]);

printf("\n");

}

return 0;

}

3. #include<stdio.h>

void transpose(int arr[][3]){

int j=0,i;

printf("transpose of a matrix is\n");

while(j<3){

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

printf("%d ",arr[i][j]);

}

j++;

printf("\n");

}

}

int main(){

int ary[3][3]={{1,2,3},{4,5,6},{7,8,9}},i,j;

printf("before transpose of a matrix \n");

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

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

printf("%d ",ary[i][j]);

}

printf("\n");

}

transpose(ary);

return 0;

}

4. #include<stdio.h>

int main(){

int ary[3][3]={{1,2,3},{4,5,6},{7,8,9}},i,j,sum=0;

while(j<3){

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

if(i+j==2)

sum=sum+ary[i][j];

}

j++;

}

printf("%d",sum);

return 0;

}

5. #include<stdio.h>

int main(){

int ary[3][3]={{1,2,3},{4,5,6},{7,8,9}},i,j,sum=0;

while(j<3){

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

if(i==j)

sum=sum+ary[i][j];

}

j++;

}

printf("%d",sum);

return 0;

}

6. #include<stdio.h>

int main(){

int ary[3][3]={{1,2,3},{4,5,6},{7,8,9}},i=0,j,sor,soc;

while(i<3){

sor=0;

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

sor=sor+ary[i][j];

}

printf("%d is the sum of %d row\n\n",sor,i+1);

i++;

}

printf("\n");

j=0;

while(j<3){

soc=0;

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

soc=soc+ary[i][j];

}

printf("%d is the sum of %d column\n\n",soc,j+1);

j++;

}

return 0;

}

7. #include<stdio.h>

int main(){

int ary[5][5]={{11,21,31,41,51},{61,72,84,92,10},{11,12,13,14,15},{16,17,18,19,20},{21,22,23,24,25}},i=0,j;

while(i<5){

for(j=0;j<5;j++){

if(i<j)

ary[i][j]=0;

}

i++;

}

i=0;

while(i<5){

for(j=0;j<5;j++){

if(ary[i][j]==0)

printf("%d ",ary[i][j]);

else{

printf("%d ",ary[i][j]);

}

}

printf("\n");

i++;

}

return 0;

}

8. #include<stdio.h>

int main(){

int ary[5][5]={{11,21,31,41,51},{61,72,84,92,10},{11,12,13,14,15},{16,17,18,19,20},{21,22,23,24,25}},i=0,j;

while(i<5){

for(j=0;j<5;j++){

if(i>j)

ary[i][j]=0;

}

i++;

}

i=0;

while(i<5){

for(j=0;j<5;j++){

if(ary[i][j]==0)

printf("%d ",ary[i][j]);

else{

printf("%d ",ary[i][j]);

}

}

printf("\n");

i++;

}

return 0;

}

9. #include<stdio.h>

int main(){

int count\_zero=0,count\_nonzero=0,ary[10][10],n,i,j;

printf("Enter the no of elements of a matrix in a row and coloumn (row and columns are of same size)F : ");

scanf("%d",&n);

printf("Enter the elements of a matrix : \n");

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

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

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

}

printf("\n");

}

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

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

if(ary[i][j]==0){

count\_zero++;

}

else{

count\_nonzero++;

}

}

}

if(count\_zero > count\_nonzero){

printf("the matrix is a sparse matrix");

}

else{

printf("the matrix is not a sparse matrix");

}

return 0;

}

10. #include<stdio.h>

int main(){

int ary[4][4]={{1,1,0,0},{1,0,0,0},{1,1,1,1},{1,1,1,0}},row,i,j,count,gre=0;

for(i=0;i<4;i++){

count=0;

for(j=0;j<4;j++){

if(ary[i][j]==1){

count++;

}

}

if(i%2){

if(count>gre){

gre=count;

row=i;

}

}

else{

if(count>gre){

gre=count;

row=i;

}

}

}

printf("row number %d has the highest 1's",row+1);

return 0;

}