2D array with random

```
#include <stdio.h>
#include <st dli b.h>
#include <ti me.h >
int main(){
       int a[3][4];
       int sum1[3] = {0,0,0};
       int sum2[4] = {0,0,0,0};
        sra nd( tim e(N ULL));
        for(int x = 0; x < 3;x++){
               for (int y = 0; y < 4;y++){
                        a[x][y] = rand() % 10;
                        pri ntf ("%d " ,a[ x][y]);
               }
                pri ntf ("\n ");
       }
       int count1 = 0;
        for(int ax = 0; ax < 3;ax++){
               for (int ay = 0; ay < 4;ay++){
                        sum 1[c ount1] += a[ax]
[ay];
               }
                cou nt1++;
       }
       int count2 = 0;
        for(int bx = 0;bx < 4;bx++){
               for (int by = 0;by <3; by++){
                        sum 2[c ount2] += a[by]
[bx];
               }
                cou nt2++;
       }
        pri ntf ("Sum of rows:");
       for (int c = 0;c < 3;c++){
                pri ntf (" %d", sum 1[c]);
       }
        pri ntf ("\nSum of column s:");
       for (int d = 0;d < 4;d++){
                pri ntf (" %d", sum 2[d]);
```

2D array with random (cont)

```
>  }
}
```

Lab1 wk10

```
#include <stdio.h>
void check(int a,float b, double c){
        pri ntf ("The integer is %d",a);
        pri ntf ("\nThe floating point number is
%f",b);
        pri ntf ("\nThe double precision number is
%lf",c);
}
int main(){
       int a;
        float b;
        double c;
        pri ntf ("Enter an integer: ");
        sca nf( " %d", &a);
        pri ntf ("Enter a floating point number:
");
        sca nf( " %f", &b);
        pri ntf ("Enter a double precision number
");
        sca nf( " %lf " ,&c);
        che ck( a,b,c);
}
Enter an integer: 3
Enter a floating point number: 4.5
Enter a double precision number 5.3456
The integer is 3
The floating point number is 4.500000
The double precision number is 5.345600
```

bonuslab wk10(find distance)

```
#include <stdio.h>
#include <ma th.h >
double euc_di st( double a,double b,double
c,double d){
        double x = sqrt(p ow( c-a ,2) +po w(d -
b,2));
        return x;
}
int main(){
```

bonuslab wk10(find distance) (cont)

```
>    double a,b,c,d,z;
   printf("Please enter a value for x1: ");
   scanf("%lf",&a);
   printf("Please enter a value for y1: ");
   scanf("%lf",&b);
   printf("Please enter a value for x2: ");
   scanf("%lf",&c);
   printf("Please enter a value for y2: ");
   scanf("%lf",&d);
   z = euc_dist(a,b,c,d);
   printf("The distance between the points is: %lf",z);
}
Please enter a value for x1: 20.5
Please enter a value for y1: 55
Please enter a value for x2: 60
Please enter a value for y2: 40.7
The distance between the points is: 42.008809
```

lab1 wk11

```
#include <stdio.h>
#define USD 32.86;
#define JPY 0.29;
float THB2US D(float THB){
        float x = THB / USD;
        return x;
}
float THB2JP Y(float THB){
        float y = THB / JPY;
        return y;
}
void main(){
        float THB = 5000;
        pri ntf ("%.2f THB = %.2f USD\n", THB ,TH -
B2U SD( THB));
        pri ntf ("%.2f THB = %.2f JPY" ,TH B,T -
HB2 JPY (THB));
}
5000.00 THB = 152.16 USD
5000.00 THB = 17241.38 JPY
```

Extralab#6

```
#include <stdio.h>
void findMi nMa x(int array[ ],int nElems,int
max,int min);
int main(){
       int nElems, min_, max_;
        pri ntf ("input n: ");
        sca nf( " %d", &n Elems);
       int array[ nEl ems];
        pri ntf ("input array of size n: ");
        for(int i = 0; i < nElems; i++){
                sca nf( " %d", &a rra y[i]);
       }
        fin dMi nMa x(a rra y,n Ele ms, &m ax_ ,& -
min_);
        pri ntf ("min is %d max is %d", min_,
max_);
        return 0;
}
void findMi nMa x(int array[ ],int nElems,int
max,int min){
       *min = array[0];
       *max = array[0];
       for (int i = 1; i < nElems ;i++){
               if (*min > array[i]){
                       *min = array[i];
               }
               if (*max < array[i]){
                       *max = array[i];
               }
       }
}
input n: 6
input array of size n: 1 2 3 4 5 6
min is 1 max is 6
```

swap using pointer

```
#include<stdio.h>
void sort_n ums(inta, int b, int *c);
void swap(int x, int y);
int a,b,c,A,B,*C;
int main(){
```

swap using pointer (cont)

```
>    printf("Enter 3 integers: ");
   scanf("%d %d %d",&a,&b,&c);
   A=&a;B=&b;C=&c;
   sort_nums(A,B,C);
   printf("Sorted integers: %d %d %d",A,B,*C);
}
void sort_nums(int a, int b, int *c){
   int loop = 1;
   while (loop == 1){
      if (a <b){
         swap(a, b);
      }
      if (b <c){
         swap(b, c);
      }
      if (a >= b && b >= c && a >= c){
         loop = 0;
      }
   }
}
void swap(int x, int y){
   int temp;
   temp = *x;
   x = y;
   *y = temp;
}
Enter 3 integers: 2 4 5
Sorted integers: 5 4 2
```

string(compare)

```
#include <stdio.h>
#include <st rin g.h>
struct person{
       char Name[2] [81];
       char Phone[2] [11];
} contact;
int main(){
```

string(compare) (cont)

```
>    printf("Enter Name#1: ");
   scanf("%s",contact.Name[0]);
   printf("Enter phone#1: ");
   scanf("%s",contact.Phone[0]);
   printf("Enter Name#2: ");
   scanf("%s",contact.Name[1]);
   printf("Enter phone#2: ");
   scanf(" %s",contact.Phone[1]);
   printf("Sort by: name\n");
   if (strncmp(contact.Name[0],contact.Name[1],81) < 0){ // first one
is less than second one
      printf("%s ",contact.Name[0]);
      printf("%s",contact.Phone[0]);
      printf("\n%s ",contact.Name[1]);
      printf("%s",contact.Phone[1]);
   }
   else if (strncmp(contact.Name[0],contact.Name[1],81) > 0){ // first
one is greater than second one
      printf("%s ",contact.Name[1]);
      printf("%s",contact.Phone[1]);
      printf("\n%s ",contact.Name[0]);
      printf("%s",contact.Phone[0]);
   }
   else{ // == 0 first one is equal to last one
      printf("%s ",contact.Name[0]);
      printf("%s",contact.Phone[0]);
      printf("\n%s ",contact.Name[1]);
      printf("%s",contact.Phone[1]);
   }
   printf("\n");
   printf("Sort by: phone\n");
   if (strncmp(contact.Phone[0],contact.Phone[1],11) < 0){
      printf("%s ",contact.Name[0]);
      printf("%s",contact.Phone[0]);
      printf("\n%s ",contact.Name[1]);
      printf("%s",contact.Phone[1]);
   }
   else if (strncmp(contact.Phone[0],contact.Phone[1],11) > 0){
```

string(compare) (cont)

```
>        printf("%s ",contact.Name[1]);
        printf("%s",contact.Phone[1]);
        printf("\n%s ",contact.Name[0]);
        printf("%s",contact.Phone[0]);
    }
    else{
        printf("%s ",contact.Name[0]);
        printf("%s",contact.Phone[0]);
        printf("\n%s ",contact.Name[1]);
        printf("%s",contact.Phone[1]);
    }
}
```

```
Enter Name#1: Alice
Enter phone#1: 0819998888
Enter Name#2: Mallory
Enter phone#2: 0810001111
Sort by: name
Alice 0819998888
Mallory 0810001111
Sort by: phone
Mallory 0810001111
Alice 0819998888
```

Extralab#4

```
#include<stdio.h>
int main()
{
        int n,i=0, cou nt=0;
        char a[80], b[8 0],c;
         pri ntf ("First string :");
        c = getchar();
         while ((i<80) && (c != '\n')) {a[i] = c;
i++; c = getcha r();}
        a[i] = '\0';
        n = i;
         pri ntf ("Second string :");
        i=0;
        c = getchar();
```

Extralab#4 (cont)

```
>     while ((i<80) && (c != '\n')){b[i] = c; i++; c = getchar();}
    b[i] = '\0';
    for( i=n-1 ; i>=0 ;i-- )
    {
       if(a[i]+32 != b[i] && a[i] != b[i]+32 && a[i] != b[i]) count++;
    }
    printf("%d",count);
    return 0;
}
```

```
First string:hallo
Second string:hello
1
```

File I/O

```
#include <stdio.h>
#include <st dli b.h>
int calcul ate Age(int year);
struct birthdate{
        int day;
        int month;
        int year;
};
struct student{
        int id;
        char name[100];
         struct birthdate inform ation;
};
struct student studen t_i nfor;
int main(){
        int id, day, month, year, age;
        char name[80];
        FILE *inFile;
         inFile = fopen( " stu den t.t xt", " r");
        if (inFile == NULL) {
                pri ntf ("Failed to open the
file. \n");
                exi t(1);
        }
```

File I/O (cont)

```
>    while (fscanf(inFile, "%d %s %d %d %d", &student_infor.id, &student_infor.name, &student_infor.information.day, &student_infor.information.month, &student_infor.information.year) != EOF){
       printf("Read %d %s %d %d %d\n", student_infor.id, student_infor.name, student_infor.information.day, student_infor.information.month, student_infor.information.year);
       / copy the data into the Student struct /
   }
   age = calculateAge(student_infor.information.year);
   fclose(inFile);
   inFile = fopen("student_age.txt","w");
   fprintf(inFile,"Student ID: %d",student_infor.id);
   fprintf(inFile,"\nName: %s",student_infor.name);
   fprintf(inFile,"\nBirthdate: %d/%d/%d",student_infor.information.day,student_infor.information.month,student_infor.information.year);
   fprintf(inFile,"\nAge: %d",age);
   fclose(inFile);
}
int calculateAge(int year){
   int x = 2018 - year;
   return x;
}
Read 31257 Alice 14 12 1993
```

File I/O #2

```
#include <stdio.h>
#include <st dli b.h>
float covert (float x);
int main(){
        float f[6];
        float c[6];
       FILE *Data;
       Data = fopen( " f.t xt", " r");
       if (Data == NULL){
                pri ntf ("ER ROR ");
                exi t(1);
       }
       for (int x = 0;x < 6;x++){
                fsc anf (Da ta, " %f", &f [x]);
```

File I/O #2 (cont)

```
>   }
   fclose(Data);
   Data =fopen("c.txt","w");
   for (int x = 0;x < 6;x++){
      fprintf(Data,"%f",covert(f[x]));
      if (x < 5){
         fprintf(Data,"\n");
      }
   }
   fclose(Data);
   printf("finished");
}
float covert(float x){
   float z;
   z = ((x -32.0) * (1.8));
   return z;
}
```

Extralab#2

```
#include <stdio.h>
int main(){
       int x,a,b,c;
        pri ntf ("a");
        sca nf( " %d", &x);
       a = x / 2;int ax = 0;int ay = a - 2;int bx = x - 2;int by = 1;
       for (int y = 0;y < x/2;y++){
                for(int alpha = 0;alpha < ax;alp - ha++){
                        pri ntf ("1");
                }
                if (ax != a){
                        pri ntf ("2");
                }
                for (int beta = bx;beta > 0;beta-- ){
                        pri ntf ("1");
                }
                if (ax != a){
                        pri ntf ("2");
```

Extralab#2 (cont)

```
>       }
      for(int alpha = 0;alpha < ax;alpha++){
         printf("1");
      }
      bx -= 2;
      ax++;
      printf("\n");
   }
   for (int alpha = 0;alpha < a;alpha++){
      printf("1");
   }
   printf("3");
   for (int alpha = 0;alpha < a;alpha++){
      printf("1");
   }
   printf("\n");
   for (int y = 0;y < x/2;y++){
      for(int alpha = ay;alpha >= 0;alpha--){
         printf("1");
      }
      if (ay != a){
         printf("2");
      }
      for (int beta = 0;beta < by;beta++ ){
         printf("1");
      }
      if (ay != a){
         printf("2");
      }
      for(int alpha = ay;alpha >= 0;alpha--){
         printf("1");
      }
      by += 2;
      ay--;
      printf("\n");
   }
```

Extralab#2 (cont)

```
>}
a5
21112
12121
11311
12121
21112
```

Extralab#8

```
#include<stdio.h>
int main()
{
        int age_12 ,su m=0 ,i, j=0 ,a[ 1000];
         typedef struct TitleN ameAge
        {
                char tt[100];
                char name[80];
                int age;
         }data;
        data A;
         pri ntf ("Input your title: ");
         sca nf( " %s", &A.tt);
         pri ntf ("Input your Name:");
         sca nf( " %s", &A.name);
         pri ntf ("Input your Age:");
         sca nf( " %d", &A.age);
         age_12 = A.age - 12;
         if( age_12 >12) age_12 = 12;
         pri ntf ("Hello ");
         if( A.age >= 20 ) printf ("%s.",A.tt);
         pri ntf ("%s " ,A.n ame);
        for( i=1 ; i<= A.age ; i++) {sum+=i;}
         pri ntf ("\nSum of the number 1 to Age:
%d\n",sum);
        for( i=1 ; i<A.age ; i++)
        {
                if( i%3 == 0 || i%5 == 0 )
                {
```

Extralab#8 (cont)

```
>            a[j] = i;
          j++;
       }
    }
    a[j] = '\0';
    int n=j;
    printf("The multiples of 3 or 5: ");
    for( j=0 ; j<=n-1 ; j++)
    {
       if(j!=n-1)
          printf("%d,",a[j]);
       else printf("%d",a[j]);
    }
    for(i=1 ; i<13 ; i++)
    {
       printf("\n%dx%d = %d",age_12,i,age_12*i);
    }
    return 0;
}
Input your title:mr
Input your Name:phon
Input your Age:16
Hello phon
Sum of the number 1 to Age: 136
The multiples of 3 or 5: 3,5,6,9,10,12,15
4x1 = 4
4x2 = 8
4x3 = 12
4x4 = 16
4x5 = 20
4x6 = 24
4x7 = 28
4x8 = 32
4x9 = 36
4x10 = 40
4x11 = 44
```

Extralab#8 (cont)

```
> 4x12 = 48
```

Extralab#7

```
#include<stdio.h>
int main()
{
        int i=0;
        char a[80],c;
         pri ntf ("Input your number: ");
        c = getchar();
         while( i<80 && c != '\n')
        {
                a[i] = c;
                i++;
                c = getchar();
        }
        a[i] = '\0';
        for( i=i-1 ; i>=0 ; i--) printf -
("%c " ,a[i]);
         return 0;
}
Input your number: 12345
54321
```

Extralab#5

```
#include<stdio.h>
int main()
{
        int N,i=0, sum=0;
         pri ntf ("SIZE: ");
         sca nf( " %d", &N);
        int a[N],b[N];
         pri ntf ("Please enter number such as a=
[a1, a2,..]: ");
         for(i=0 ; i<N ;i++) { scanf( " %d", &a -
[i]); }
         pri ntf ("Please enter number such as b=
[b1, b2,..]: ");
         for(i=0 ; i<N ;i++) { scanf( " %d", &b -
[i]); }
         for(i=0 ; i<N ;i++) { sum += a[i]*b[i]; }
         pri ntf ("Do t-p roduct = %d", sum);
```

Extralab#5 (cont)

```
>     return 0;
}
SIZE: 4
Please enter number such as a=[a1,a2,..]: 1 2 3 4
Please enter number such as b=[b1,b2,..]: 1 2 3 4
Dot-product = 30
```

GCD without loop

```
#include <stdio.h>
int gcd(int a, int b)
{
       if (b == 0)
                return a;
        return gcd(b, a % b);
}
int main()
{
       int a,b;
        pri ntf ("Input two number: ");
        sca nf( " %d% d",&a, &b);
        pri ntf ("The GCD of %d and %d is %d", -
a,b ,gc d(a ,b));
        return 0;
}
```

Extralab#3

```
#include <stdio.h>
#define pie 3.14
float Circum fer enc efu nct ion(int a,float *b);
float Areafu nct ion(int a,float *b);
int main(){
        flo at Area,Circum fer enc e,a ,b;int x;
       Area = &a;
        Cir cum ference = &b;
        sca nf( " %d", &x);
        Cir cum fer enc efu nct ion (x, Cir cum -
fer ence);
        Are afu nct ion (x, Area);
        pri ntf ("%.2f %.2f\n", Circum fer ence, Area);
```

Extralab#3 (cont)

```
> }
float Circumferencefunction(int a,float *b){
   b = 2 pie * a;
}
float Areafunction(int a,float *b){
   b = pie a * a;
}
3
18.84 28.26
```

Extralab#1

```
#include<stdio.h>
int main()
{
       int a[32] = {0,1},i;
        for(i=1 ; i<31 ; i++)
       {
                a[i+1] = a[i] + a[i-1];
                pri ntf ("%d " ,a[ i-1]);
               if(i != 30)
                        pri ntf (",");
       }
        return 0;
}
0 1 1 2 3 5 8 13 21 34 55 89 144 233 377 610 987
1597 2584 4181 6765 10946 17711 28657
46368 75025 121393 196418 317811 514229
```

Monster game(evolved one)

```
#include <stdio.h>
#include <st rin g.h>
struct monster{
       char name[80];
       int attack;
       int hp;
}monst ers[3];
struct monster monste rs[3] = {{"bone",20,50},
{"snot",30,100},{"plague",50,70}};
int PlayerHP = 100;
```

Monster game(evolved one) (cont)

```
> int *current_playerHP;
int *current_monsterHP;
int main(){
    char choice;
    int dmg;
    int Remaining;
    current_playerHP = &PlayerHP;
    int loop = 1;
    char choose[7] = {0};
    while (loop == 1){
        printf("\nEnter the 1st character of Monster's name: ");
        scanf("%s",&choose);
        printf("Enter the attack power from 1 to 100: ");
        scanf("%d",&dmg);
        if(strcmp(choose,monsters[0].name) == 0){
            printf("Monster: %s",monsters[0].name);
            current_monsterHP = &monsters[0].hp;
            current_playerHP = &PlayerHP;
            if (dmg > *current_monsterHP){
                *current_monsterHP = 0;
                printf("\nHP: %d",*current_monsterHP);
                printf("\nYour HP: %d",*current_playerHP);
                printf("\nYou Won");
            }
            else if(monsters[0].attack >= *current_playerHP){
                printf("\nHP: %d",*current_monsterHP);
                *current_playerHP = 0;
                printf("\nYour HP: %d",*current_playerHP);
                printf("\nYou Lose");
                break;
            }
            else{
                *current_monsterHP -= dmg;
                printf("\nHP: %d",*current_monsterHP);
                *current_playerHP -= monsters[0].attack;
                printf("\nYour HP: %d",*current_playerHP);
```

Monster game(evolved one) (cont)

```
>           }
        }
        else if(strcmp(choose,monsters[1].name) == 0){
            printf("Monster: %s",monsters[0].name);
            current_monsterHP = &monsters[1].hp;
            current_playerHP = &PlayerHP;
            printf("\nCurrent HP: %d",*current_monsterHP);
            printf("\nAttack power: %d",dmg);
            if (dmg > *current_monsterHP){
                *current_monsterHP = 0;
                printf("\nHP: %d",*current_monsterHP);
                printf("\nYour HP: %d",*current_playerHP);
                printf("\nYou Won");
            }
            else if(monsters[1].attack >= *current_playerHP){
                printf("\nHP: %d",*current_monsterHP);
                *current_playerHP = 0;
                printf("\nYour HP: %d",*current_playerHP);
                printf("\nYou Lose");
                break;
            }
            else{
                *current_monsterHP -= dmg;
                printf("\nHP: %d",*current_monsterHP);
                *current_playerHP -= monsters[1].attack;
                printf("\nYour HP: %d",*current_playerHP);
            }
        }
        else if(strcmp(choose,monsters[2].name) == 0){
            printf("Monster: %s",monsters[0].name);
            current_monsterHP = &monsters[2].hp;
            current_playerHP = &PlayerHP;
            printf("\nCurrent HP: %d",*current_monsterHP);
            printf("\nAttack power: %d",dmg);
            if (dmg > *current_monsterHP){
                *current_monsterHP = 0;
```

Monster game(evolved one) (cont)

```
>              printf("\nHP: %d",*current_monsterHP);
            printf("\nYour HP: %d",*current_playerHP);
            printf("\nYou Won");
         }
         else if(monsters[2].attack >= *current_playerHP){
            printf("\nHP: %d",*current_monsterHP);
            *current_playerHP = 0;
            printf("\nYour HP: %d",*current_playerHP);
            printf("\nYou Lose");
            break;
         }
         else{
            *current_monsterHP -= dmg;
            printf("\nHP: %d",*current_monsterHP);
            *current_playerHP -= monsters[2].attack;
            printf("\nYour HP: %d",*current_playerHP);
         }
      }
      else{
         printf("Invalid Input");
      }
   }
}
```

Enter the 1st character of Monster's name: bone
Enter the attack power from 1 to 100: 2
Monster: bone
HP: 48
Your HP: 80

find min,range,mean(pointer)

```
#include <stdio.h>
float findMe an(int *num){
         float a=0;
        for (int x = 0; x < 5;x++){
                a += *num + x;
        }
        a = a / 5;
```

find min,range,mean(pointer) (cont)

```
>    return a;
}
int findMin(int *num){
   int a = (*num);
   for (int x = 0;x <= 4;x++){
      if (a > *(num + x)){
         a = *(num + x);
      }
   }
   return a;
}
int findRange(int num[],int z){
   int a = (*num);
   for (int x = 0;x < 4;x++){
      if (a <= *(num + x)){
         a = *(num + x);
      }
   }
   int c = a - z;
   return c;
}
int main(){
   int num[5];
   printf("Enter 5 integers: ");
   scanf("%d %d %d %d %d",&num[0],&num[1],&num[2],&num[3],&n-
um[4]);
   printf("Mean: %.3f and Min: %d and Range: %d",findMean(num),f-
indMin(num),findRange(num,findMin(num)));
}
```

Enter 5 integers: 39 100 -8 7 66
Mean: 41.000 and Min: -8 and Range: 108

Lab3 wk11

```
#include <stdio.h>
#define N 4
int gcd(int num1, int num2) {
        // Parameter to store the GCD
        int result;
```

Lab3 wk11 (cont)

```
>    int loop1 = 1;
   while(num1 != num2){
      if(num1 > num2)
         num1 -= num2;
      else
         num2 -= num1;
   }
   return num1;
}
int main() {
   int num[N]; // Input numbers
   int result; // GCD of the input numbers
   printf("Enter %d numbers: ", N);
   for (int i=0 ; i<N ; i++) {
      scanf("%d", &num[i]);
   }
   result = gcd(num[0],num[1]);
   result = gcd(result,num[2]);
   result = gcd(result,num[3]);
   printf("GCD of ");
   for (int i=0 ; i<N ; i++) {
      printf("%d ", num[i]);
   }
   printf("is %d\n", result);
   return 0;
}
Enter 4 numbers: 122 134 153 187
GCD of 122 134 153 187 is 1
```

lab3 wk10

```
#include <stdio.h>
#include <ti me.h >
#include <st dli b.h>
int check(int a,int x){
        int z;
        if (a > x){
                z = 1;
```

lab3 wk10 (cont)

```
>    }
   else if(a < x){
      z = 2;
   }
   else{
      z = 3;
   }
   return z;
}
int main(){
   srand(time(NULL));
   int loop = 1,x,y,count = 10,random = rand() % 100 + 1;
   while (count != 0){
      //printf("%d ",random);
      printf("Enter your guess: ");
      scanf("%d",&y);
      x = check(y,random);
      if (x == 1){
         printf("Wrong number :( Your guess was too high.\n");
         count--;
         printf("You have %d guesses left. Try again\n\n",count);
      }
      else if (x == 2){
         printf("Wrong number :( Your guess was too low.\n");
         count--;
         printf("You have %d guesses left. Try again\n\n",count);
      }
      else{
         printf("Hooray, you have won!\n");
         break;
      }
   }
   if (count == 0){
      printf("Sorry, you lose\n");
   }
}
```

lab3 wk10 (cont)

> Enter your guess: 1
Wrong number :(Your guess was too low.
You have 9 guesses left. Try again

bonuslab wk9

bonuslab wk9 (cont)

```
>                 }
            }
        }
        if (check == 1){
            printf("The matrix is not symmetric.");
        }
        else{
            printf("The matrix is symmetric.");
        }
        loop1 = 0;
    }
  }
}
```

Enter the number of rows and columns: 3 3
Enter element 0,0: 1
Enter element 0,1: 1
Enter element 0,2: 1
Enter element 1,0: 1
Enter element 1,1: 1
Enter element 1,2: 1
Enter element 2,0: 1
Enter element 2,1: 1
Enter element 2,2: 1
The matrix is symmetric.

```
#include <stdio.h>
int main(){
       int rows,c ols ,loop1 = 1;
        pri ntf ("Enter the number of rows and
columns: ");
        sca nf( "%d %d", &r ows ,& cols);
        while (loop1 == 1){
               if (rows != cols){
                        loop1 = 0;
                        pri ntf ("That matrix must
be a square matrix.");
               }
                else{
                       int matrix [ro ws] [cols];
                       int tmatri x[r ows ][c ols];
                       int count1 = 0,count2 = 0;
                       for (int x = 0;x < rows;x++)
{
                                for (int y = 0;y <
cols;y++){
                                        pri ntf -
("Enter element %d,%d: " ,x,y);
                                        sca -
nf( " %d", &m atr ix[ x][y]);
                                        tma tri -
x[c oun t1] [co unt2] = matrix [x][y];
                                        cou nt1++;
                                       if (count1
>= rows){
                                                -
cou nt2++;
                                                -
count1 = 0;
                                        }
                                }
                       }
                       int check = 0;
                       for (int xt = 0;xt <
rows;x t++){
                                for (int yt = 0;yt <
cols;y t++){
                                        if (matri -
x[x t][yt] != tmatri x[x t][ yt]){
                                                -
check = 1;
                                                -
break;
```