Q.1 Write a Program to print the below pattern using nested for loop.
41
41 42
41 42 43
41 42 43 44
41 42 43 44 45

Ans:

```c
// Online C compiler to run C program online
#include <stdio.h>


int main(){
int i,j;

 for (i = 41; i <=45; i++) {
      for (j = 41; j <= i; j++) {
         printf("%d ", j);
      }
      printf("\n");
   }
   return 0;
}
```

o/p:
41
41 42
41 42 43
41 42 43 44
41 42 43 44 45

=== Code Execution Successful ===

Q.2 Write a Program to print the below pattern using nested for loop.
11
12 13
14 15 16
17 18 19 20
21 22 23 24 25

Ans:

```c
// Online C compiler to run C program online
#include <stdio.h>

int main() {
    int k = 11;
    for(int i = 1; i <= 5; i++) {
        for(int j = 1; j <= i; j++) {
            printf("%3d", k);
            k++;
        }
        printf("\n");
    }
    return 0;
}
```

o/p:
```
11
 12 13
 14 15 16
 17 18 19 20
 21 22 23 24 25
```

=== Code Execution Successful ===

Q.3 Write a Program to print the below pattern using nested for loop.
```
        5
      4 5
    3 4 5
  2 3 4 5
1 2 3 4 5
```

Ans:

```c
// Online C compiler to run C program online
#include <stdio.h>

int main() {
for(int i=1;i<=5;i++){
    for(int j=1;j<=5;j++){
        if(i+j>=6){
```

```
        printf("%d",j);
     }else{
         printf(" ");
     }

         }
    printf("\n");
}

    return 0;
}
```

o/p:

```
        5
      4 5
    3 4 5
  2 3 4 5
1 2 3 4 5
```

=== Code Execution Successful ===

Q.4 Write a Program to print the below pattern using nested for loop.
```
1 0 1 0 1
  1 0 1 0
    1 0 1
      1 0
        1
```

Ans:

```
// Online C compiler to run C program online
#include <stdio.h>

int main() {
    int i, j, k;
 for(i =5; i >=1; --i) {
      for(k = 5; k > i; k--) {
         printf("  ");
}
      for(j = i; j >= 1; --j) {
     if(j % 2 == 1)
```

```
{
    printf("1 ");
    }
    else{
printf("0 ");
}
}
    printf("\n");
 }
 return 0;
}
```

o/p:

```
1 0 1 0 1
  0 1 0 1
    1 0 1
      0 1
        1
```


=== Code Execution Successful ===

Q.5 Write a Program to print the below pattern using nested for loop.

```
1                 1
1 2             2 1
1 2 3         3 2 1
1 2 3 4     4 3 2 1
1 2 3 4 5 5 4 3 2 1
```


Ans:

```
// Online C compiler to run C program online
#include <stdio.h>

int main() {
    int i, j;
    for (i = 1; i <=5; i++) {
        for (j = 1; j <= i; j++) {
    printf("%d ", j);
        }
 for (j =i; j <=4; j++) {
    printf("    ");
```

```
      }
      for (j = i; j >= 1; j--) {
   printf("%d", j);
         if (j != 1) {
      printf(" ");
         }
      }
  printf("\n");
    }
    return 0;
}
```

o/p:

```
1                    1
1 2                2 1
1 2 3            3 2 1
1 2 3 4        4 3 2 1
1 2 3 4 5 5 4 3 2 1
```

=== Code Execution Successful ===

Q.6 Write a Program to print the below pattern using nested for loop.
```
        5
      4 5 4
    3 4 5 4 3
  3 3 4 5 4 3 2
1 2 3 4 5 4 3 2 1
```

Ans:
```
// Online C compiler to run C program online
#include <stdio.h>

int main() {

int n = 5;
for (int i = n; i >= 1; i--) {
for (int j = 5; j >= 5 - i; j--) {
printf(" ");
}
for (int j = i; j <= n; j++) {
printf("%d ", j);
}
```

```
for (int j = n - 1; j >= i; j--) {
printf("%d ", j);
}
printf("\n");
}
return 0;
}
```

o/p:

```
      5
     4 5 4
    3 4 5 4 3
   2 3 4 5 4 3 2
  1 2 3 4 5 4 3 2 1
```

=== Code Execution Successful ===

Q.7 Write a Program to print the below pattern using nested for loop.

```
* * * * *
*       *
* * * * *
*       *
*       *
```

Ans:

```
// Online C compiler to run C program online
#include <stdio.h>
int main() {
for (int i = 1; i <= 5; i++) {
if (i == 1 || i == 3) {
printf("\n* * * * *");
} else {
printf("\n*       *");
}
}
return 0;
}
```

o/p:

```
* * * * * *
*         *
* * * * * *
*         *
*         *
```

=== Code Execution Successful ===