

Indian Institute of Information Technology (IIIT)
Pune

Computer Programming Lab.

1st Semester

Academic Session 2023-2024

Assignment-6

Name: Aashutosh Bharti

Group : G1 – SECTON A

Q1.

a.

```
1  #include <stdio.h>
2  int main (){
3      int n;
4      scanf ("%d", &n);
5      for (int i = 1; i<=n ; i++){
6          for (int j = 1 ; j<=n ; j++){
7              printf ("* ");
8          }
9          printf ("\n");
10     }
11 }
12
```

```
5
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
```

b.

```
15  #include <stdio.h>
16  int main (){
17      int n;
18      scanf ("%d", &n);
19      for (int i = 1; i<=n ; i++){
20          for (int j = 1 ; j<=n ; j++){
21              printf ("%d ", j);
22          }
23          printf ("\n");
24      }
25  }
```

5

1 2 3 4 5

1 2 3 4 5

1 2 3 4 5

1 2 3 4 5

1 2 3 4 5

c.

```
28
29 #include <stdio.h>
30 int main (){
31     int n;
32     scanf ("%d", &n);
33     for (int i = 1; i<=n ; i++){
34         for (int j = 1 ; j<=i ; j++){
35             printf ("%d ", j);
36         }
37         printf ("\n");
38     }
39 }
40
```

input

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

d.

```
42 #include <stdio.h>
43 int main (){
44     int n;
45     scanf ("%d", &n);
46     for (int i = 1; i<=n ; i++){
47         for (int j = 1 ; j<=i ; j++){
48             printf ("* ");
49         }
50         printf ("\n");
51     }
52 }
53
```



input

```
5
*
* *
* * *
* * * *
* * * * *
```

e.

```
1  #include <stdio.h>
2  int main () {
3      int n , a=1;
4      scanf ("%d", &n);
5      for (int i = 1; i<=n ; i++){
6          for (int j = 1 ; j<=i ; j++){
7              printf ("%d ", a);
8              a++;
9          }
10         printf ("\n");
11     }
12 }
```

input

```
5
1
2 3
4 5 6
7 8 9 10
11 12 13 14 15
```

f.

```
54 #include <stdio.h>
55 int main () {
56     int n ;
57     scanf ("%d", &n);
58     for (int i = 1; i<=n ; i++){
59         for (int j = 1 ; j<=n-i ; j++){
60             printf (" ");
61         }
62         for (int j = 1; j<=i ; j++){
63             printf ("*");
64         }
65         printf ("\n");
66     }
67 }
```

input

```
5
*
* *
* * *
* * * *
* * * * *
```

g.

```
70 #include <stdio.h>
71 int main () {
72     int n ; //6
73     scanf ("%d" , &n);
74     for (int i = 1 ; i <= n ; i++){
75         for (int j = 1 ; j <= n ; j++ ){
76             if (j <= i ){
77                 printf ("*");
78             }
79         }
80         printf ("\n");
81     }
82
83     for (int i = 1 ; i <= n-1 ; i++){
84         for (int j = 2 ; j <= n ; j++ ){
85             if ( i < j ){
86                 printf ("*");
87             }
88         }
89         printf ("\n");
90     }
91 }
92 }
```

6
*
**

**
*

h.

```
96 #include <stdio.h>
97 int main (){
98     int n ; //6
99     scanf ("%d" , &n);
100     for (int i = 1 ; i <= n ; i++){
101         for (int j = 1 ; j <= n-i ; j++ ){
102             printf (" ");
103         }
104         for (int j=1; j<=i ; j++){
105             printf ("* ");
106         }
107         printf ("\n");
108     }
109
110     for (int i = 1 ; i <= n-1 ; i++){
111         for (int j = 1 ; j <= i ; j++ ){
112             printf (" ");
113         }
114         for (int j=1; j<=n-i ; j++){
115             printf ("* ");
116         }
117         printf ("\n");
118     }
119 }
120
```

input

5

```

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

i.

```
122  #include <stdio.h>
123  int main () {
124      int n;
125      scanf ("%d", &n);
126      for (int i = 1; i<=n ; i++){
127          for (int j = 1 ; j<=i ; j++){
128              printf ("%d ", i);
129          }
130          printf ("\n");
131      }
132  }
```

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

J.

```
135  #include <stdio.h>
136  int main () {
137      int n;
138      scanf ("%d", &n);
139      char c = '@';
140      for (int i = 1; i<=n ; i++){
141          c++;
142          for (int j = 1 ; j<=i ; j++){
143              printf ("%c ", c);
144          }
145          printf ("\n");
146      }
147  }
```

5
A
B B
C C C
D D D D
E E E E E

k.

```
1  #include <stdio.h>
2  int main () {
3      int n;
4      scanf ("%d", &n);
5      int c = n+1;
6      for (int i = 1; i<=n ; i++){
7          c--;
8          for (int j = 1 ; j<=i ; j++){
9              printf ("%d ", c);
10             }
11             printf ("\n");
12         }
13     }
```

input

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

```
1  #include <stdio.h>
2  int main () {
3      int n;
4      scanf ("%d", &n);
5
6      for (int i = 1; i<=n ; i++){
7          int c = '@';
8          for (int j = 1 ; j<=i ; j++){
9              c++;
10             printf ("%c ", c);
11         }
12         printf ("\n");
13     }
14 }
```

input

```
5
A
A B
A B C
A B C D
A B C D E
```

```

1  #include <stdio.h>
2  int main () {
3      int n;
4      scanf ("%d", &n);
5      // int c = n+1;
6      for (int i = 1; i<=n ; i++){
7          // c--;
8          for (int j = 1 ; j<=n-i+1 ; j++){
9              printf ("%d ", n-i+1 );
10             }
11             printf ("\n");
12         }
13     }

```

input

```

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

```

m.

```

main.c
1  #include <stdio.h>
2  int main () {
3      int n;
4      scanf ("%d", &n);
5      // int c = n+1;
6      for (int i = 1; i<=n ; i++){
7          // c--;
8          for (int j = 1 ; j<=n-i+1 ; j++){
9              printf ("%d ", j );
10             }
11             printf ("\n");
12         }
13     }

```

input

```

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

```

n.

```
main.c
1  #include <stdio.h>
2  int main () {
3      int n;
4      scanf ("%d", &n);
5      for (int i = 1; i<=n ; i++){
6          for (int j = 1 ; j<=n ; j++){
7              if (i <= j){
8                  printf ("%d ", j);
9              }
10             }
11             printf ("\n");
12         }
13     }
```

input

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

O.

```
main.c
1  #include <stdio.h>
2  int main () {
3      int n;
4      scanf ("%d", &n);
5      for (int i = 1; i<=n ; i++){
6          for (int j = 1 ; j<=n-i+1 ; j++){
7              printf ("%d ", i);
8          }
9          printf ("\n");
10     }
11 }
```

input

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

p.

```
main.c
1 #include <stdio.h>
2 int main (){
3     int n;
4     scanf ("%d", &n);
5     for (int i = 1; i<=n ; i++){
6         int a = i;
7         for (int j = 1 ; j<=n ; j++){
8             if (j<=i){
9                 printf ("%d ", a);
10                a--;
11            }
12        }
13        printf ("\n");
14    }
15 }
```

input

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

q.

q.

```
1 #include <stdio.h>
2 int main (){
3     int n;
4     scanf ("%d", &n);
5     for (int i = 1; i<=n ; i++){
6         int a = n-i+1;
7         for (int j = 1 ; j<=n ; j++){
8             if (j<=i){
9                 printf ("%d " , a );
10            }
11            a++;
12        }
13        printf ("\n");
14    }
15 }
```

input

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

r.

r.

```
1  #include <stdio.h>
2  int main ()
3  {
4      int n ;
5      scanf ("%d", &n);
6      for (int i = 1 ; i<=n ; i++){
7          int a = n;
8          for (int j = 1 ; j<=n-i+1; j++){
9              printf ("%d ", a);
10             a--;
11         }
12         printf ("\n");
13     }
```

input

5

5 4 3 2 1

5 4 3 2

5 4 3

5 4

5

S.

```
main.c
1  #include <stdio.h>
2  int main (){
3      int n ;
4      scanf ("%d", &n);
5      for (int i = 1 ; i<=n ; i++){
6          int a = n-i+1;
7          for (int j = 1 ; j<=n-i+1; j++){
8              printf ("%d ", a);
9              a--;
10         }
11         printf ("\n");
12     }
13 }
```

input

5

5 4 3 2 1

4 3 2 1

3 2 1

2 1

1

t.

```

2  #include <stdio.h>
3  int main()
4  {
5      int n ;
6      scanf ("%d" , &n);
7      for (int i =1 ; i <= n ; i++){
8          for (int j=1 ; j<=i-1 ;j++){
9              printf (" ");
10         }
11         for (int j = 1 ; j <= n-i+1 ; j++){
12             printf ("* ");
13         }
14         printf ("\n");
15     }
16
17     return 0;
18 }
19

```

input

```

8
* * * * *
 * * * * *
  * * * *
   * * *
    * *
     *
      *
       *
        *

```

u.


```

1
2 #include <stdio.h>
3 int main()
4 {
5     int n ;
6     scanf ("%d" , &n);
7     for (int i =1 ; i <= n ; i++){
8         for (int j=1 ; j<=n-i ;j++){
9             printf (" ");
10        }
11        for (int j = 1 ; j <= i ; j++){
12            printf ("* ");
13        }
14        printf ("\n");
15    }
16
17    return 0;
18 }
19

```

input

```

5
    *
  * *
 * * *
* * * *
* * * * *

```

V.

```

1
2  #include <stdio.h>
3  int main()
4  {
5      int n ;
6      scanf ("%d" , &n);
7      for (int i =1 ; i <= n ; i++){
8          for (int j=1 ; j<=i ;j++){
9              if (j%2 == 0){
10                 printf ("0 ");
11             }
12             else {
13                 printf ("1 ");
14             }
15         }
16         printf ("\n");
17     }
18
19     return 0;
20 }
21

```

input

```

5
1
1 0
1 0 1
1 0 1 0
1 0 1 0 1

```

w.

```

1  #include <stdio.h>
2  int main()
3  {
4      int n ;
5      scanf ("%d" , &n);
6      for (int i =0 ; i < n ; i++){
7          for (int j=0 ; j<i ;j++){
8              if (i % 2 == 0){
9                  printf ("%d" , 2*j+2);
10             }
11             else {
12                 printf ("%d", 2*j+1 );
13             }
14             }
15             printf ("\n");
16         }
17         return 0;
18     }
19 }
20

```

input

6
1
24
135
2468
13579

x.

```

1  #include <stdio.h>
2  int main()
3  {
4      int n ;
5      int temp =1 ;
6      scanf ("%d" , &n);
7      for (int i =0 ; i < n ; i++){
8          for (int j=0 ; j<=i ;j++){
9
10             if (temp==1){
11                 printf ("%d", temp);
12                 temp--;
13             }
14         else {
15             printf ("%d", temp);
16             temp++;
17         }
18         printf ("\n");
19     }
20     return 0;
21 }
22

```

input

```

5
1
01
010
1010
10101

```

y.

```

2  #include <stdio.h>
3  int main()
4  {
5      int n ;
6      scanf ("%d" , &n);
7      for (int i =1 ; i <= n ; i++){
8          for (int j=1 ; j<=i-1 ;j++){
9              printf (" ");
10         }
11         for (int j = 1 ; j <= n-i+1 ; j++){
12             printf ("* ");
13         }
14         printf ("\n");
15     }
16
17     return 0;
18 }
19

```

input

```

5
* * * * *
* * * *
* * *
* *
*

```

z.