

Assignment 8

j 1 2 3 4 5

1 - i = 1 *
2 * *
3 * * *
4 * * * *
5 * * * * *

i j
1 1
2 1 2
3 1 2 3
4 1 2 3 4
5 1 2 3 4 5

i j
1 j <= 1
2 j <= 2
3 j <= 3
4 j <= 4
5 j <= 5

Generalize = $j \leq i$

```
#include<stdio.h>
```

```
int main()
```

{

```
    int i, j;  
    for(i=1; i <= 5; i++)
```

{

for ($j=1$; $j \leq 5$; $j++$)

{

if ($j \leq i$)

printf (" * ");

else

printf (" ");

{

printf ("\n");

{

?

2 -

*

* *

* * * *

* * * *

#include <stdio.h>

int main()

{

int i, j;

for ($i=1$; $i \leq 5$; $i++$)

{

for ($j=1$; $j \leq 5$; $j++$)

{

if ($j \geq 6-i$)

printf (" * ");

else

printf (" ");

{

printf ("\n");

{

3 * * * * *
 * * * * *
 * * * * *
 * * * * *
 *

#include <stdio.h>

int main()

{

 int i, j;

 for(i=1; i <= 5; i++)

{

 for(j=1; j <= 5; j++)

{

 if (j <= 6-i)

 printf(" * ");

 else

 printf(" - ");

}

 printf("\n");

}

}

4

* * * * *

* * * * *

* * * * *

* * * * *

*

#include <stdio.h>

in main ()

int i, j;

for (i = 1; i <= 5; i++)

for (j = 1; j <= 5; j++)

if (j >= i)

printf (" * ");

else

printf (" ");

printf ("\n");

3.

i = 1 2 3 4 5 6 7 8 9

5.

j=1	*
2	* * *
3	* * * * *
4	* * * * * *
5	* * * * * * *

i j

1 5

$j \geq 5 \text{ } \& \& \text{ } j \leq 5$

2 4 5 6

$j \geq 4 \text{ } \& \& \text{ } j \leq 6$

3 3 4 5 6 7

$j \geq 3 \text{ } \& \& \text{ } j \leq 7$

4 2 3 4 5 6 7 8

$j \geq 2 \text{ } \& \& \text{ } j \leq 8$

5 1 2 3 4 5 6 7 8 9

$j \geq 1 \text{ } \& \& \text{ } j \leq 9$

$j \geq 6-i \text{ } \& \& \text{ } j \leq 4+i$

```
#include <stdio.h>
```

```
int main()
```

```
{
```

```
    int i, j;
```

```
    for (i=1; i<=5; i++)
```

```
{
```

```
    for (j=1; j<=9; j++)
```

```
{
```

```
        if (j>=6-i && j<=4+i)
```

```
            printf("*");
```

```
        else
```

```
            printf(" ");
```

```
}
```

```
    printf("\n");
```

```
}
```

```
3
```

1	2	3	4	5	6	7	8	9	j
6	-	*	*	*	*	*	*	*	i
*	*	*	*	*	*	*	*	*	2
*	1	*	*	*	*	*	*	*	3
A	*	*	*	*	*	*	*	*	4
*									5

```
int main()
```

```
{
```

```
    int i, j;
```

```
    for (i=1; i<=5; i++)
```

```
{
```

```
    for (j=1; j<=9; j++)
```

{

```
if (j >= i & j <= 10 - i)
```

```
printf(" * ");
```

else

```
printf("   ");
```

}

```
printf("\n");
```

}

}

7

i	1	2	3	4	5	6	7	8	9
j	*	*	*	*	*	*	*	*	
1	*	*	*	*	*	*	*	*	
2	*	*	*	*	*	*	*	*	
3	*	*	*	*	*	*	*	*	
4	*	*	*	*	*	*	*	*	
5	*	*	*	*	*	*	*	*	

```
#include<stdio.h>
```

```
int main()
```

{

```
int i, j;
```

```
for (i = 1; i <= 5; i++)
```

{

```
for (j = 1; j <= 9; j++)
```

{

```
if (j >= 6 - i || j <= 4 + i)
```

```
printf(" * ");
```

else

```
printf("   ");
```

}

}

```
printf("\n");
```

j 1 2 3 4 5 6 7 - i

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

i j

1 4

$j >= 4 \text{ } \& \& \text{ } j <= 4$

2 3 4 5

$j >= 3 \text{ } \& \& \text{ } j <= 5$

3 2 3 4 5 6

$j >= 2 \text{ } \& \& \text{ } j <= 6$

4 1 2 3 4 5 6 7

$j >= 1 \text{ } \& \& \text{ } j <= 7$

$j >= 5-i \text{ } \& \& \text{ } j <= 3+i$

#include<stdio.h>

int main()

{

int i, j, k;

for (i=1 ; j <= 4 ; i++)

{

k = 1 ;

for (j=1 ; j <= 7 ; j++)

{

if (j >= 5-i && j <= 3+i)

{

printf("%d", k);

~~if k < 4 ? k++ : k-1~~

}

else

printf(" ") ;

}

printf("\n");

}

9 - 1 2 3 4 5 6
1 2 3 4 3 2 1
1 2 3 2 1
1 2 1
1

#include <stdio.h>

int main()

{

 int i, j, k;

 for (i=1; i<=4; i++)

{

 k = 1;

 for (j=1; j<=7; j++)

{

 if (j>=i && j<=8-i)

{

 printf("%d", k);

 if (k<4 ? k++ : k-1)

{

 else

 printf("%d", k);

 printf(" ");

}

 printf("\n");

}

}

j	1	2	3	4	5	6	7	8	9
11 - i		A							
2		A	B	A					
3		A	B	C	B	A			
4		A	B	C	D	C	B	A	
5		A	B	C	D	E	D	C	B

#include < stdio.h >

int main()

{

 int i, j;

 char k;

 for(i=1; i<=5; i++)

{

 k = 'A';

 for(j=1; j<=9; j++)

{

 if (j >= 6-i && j <= 4+i)

{

 printf("%c", k);

 j < 5 ? k++ : k--;

}

 else

 printf(" ");

}

 printf("\n");

}

}

12- ~~j 1 2 3 4 5 6 7 i~~

A	B	C	D	C	B	A
A	B	C	B	A		
A	B	A				
A						

i j

1 1 2 3 4 5 6 7

2 2 3 4 5 6

3 3 4 5

4 4

i

$j \geq 1 \text{ } \& \& \text{ } j \leq 7$

$j \geq 2 \text{ } \& \& \text{ } j \leq 6$

$\leftarrow \text{d.c. } j \geq 3 \text{ } \& \& \text{ } j \leq 5$

$j \geq 4 \text{ } \& \& \text{ } j \leq 4$

$j >= i \text{ } \& \& \text{ } j <= 8-i$

#include <stdio.h>

int main()

{

 int i, j;

 char k;

 for (i=1; i<=4; i++)

{

 k = 'A';

 for (j=1; j<=7; j++)

{

 if ($j \geq i \text{ } \& \& \text{ } j \leq 8-i$)

{

 printf("%c", k);

 j<4 ? k++ : k--;

}

 else

 printf(" ");

}

 printf("\n");

}

}

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

13. 1	A	B	C	D	E	F	G	F	E	D	C	B	A
2	A	B	C	D	E	F		F	E	D	C	B	A
3	A	B	C	D	E			E	D	C	B	A	
4	A	B	C	D					D	C	B	A	
5	A	B	C						C	B	A		
6	A	B							B	A			
7	A									A			

```
#include <stdio.h>
```

```
int main()
```

```
int i, j;
char k;
```

```
for (i = 1; i <= 7; i++)
```

```
k = 'A'
```

```
for (j = 1; j <= 13; j++)
```

```
if (j <= 8 - i || j >= 6 + i)
```

↳ i = 1
↳ j = 1
↳ k = A

```
printf("%c", k);
```

```
j < 7 ? k++ : k--;
```

```
}
```

```
else
```

```
{
```

```
if (j == 7)
```

```
K--;
```

```
printf(" ");
```

```
}
```

```
3
```

```
printf("\n");
```

2	1	2	3	4	5	6	7
10-i	1	2	3	4	3	2	1
2	1	2	3		3	2	1
3	1	2			2	1	
4	1				1		

```
#include <stdio.h>
```

```
int main( )
```

{

```
int i, j, k;
```

```
for (i=1; i<=4; i++)
```

{

```
k = 1;
```

```
for (j=1; j<=7; j++)
```

{

```
if (j<=5-i || j>=3+i)
```

{

```
printf(" %d", k);
```

```
j<4 ? k++ : k--;
```

{

```
else
```

{

```
if (j==4)
```

```
k--;
```

```
printf(" ");
```

{

```
printf("\n");
```

{

{