Lec-2

05/05/24 4:45 PM

N = 5

* * * * *

N = 10

* * * * * * * * * *

* * * * *

(n-time)

```
int i = 1
while (i <= n){
    System.out.print("*");

    i++;
}
```

n = 5

1 ≤ 5 i = 1
2 ≤ 5 i = 2
3 ≤ 5 i = 3
4 ≤ 5 i = 4
5 ≤ 5 i = 5
i = 6

```
public static void main(String[] args) {
        // TODO Auto-generated method stub
        int n = 5;
        int i = 1;
        ~~int star = n;~~
        while (i <= star) {
            System.out.print("* ");

            i++;
        }

    }
```

n = 5 ✓

1 <= 5
2 <= 5
3 <= 5
4 <= 5
5 <= 5

i = ~~1~~ ~~2~~ ~~3~~ ~~4~~ ~~5~~ 6

* * * * *

Ques 1:

n = 5

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

Nested Loop

→ int Row = 1
→ int Star = n;
while (Row <= n){
  // Star print
  int i = 1;
  while (i ≤ star) {
    Syso("*");
    i++;
  }
  // next Prep
  Row++
  Syso()
}

n = 5 ✓

i = 2

Star

Row = ~~1~~ ~~2~~ 3 4 ~~5~~ 6

3 ≤ 5
4 ≤ 5
5 ≤ 5
6 ≤ 5

```
public static void main(String[] args) {
    // TODO Auto-generated method stub
    int n = 5;
    int row = 1;
    int star = n;
    while (row <= n) {

        // star
        int i = 1;
        while (i <= star) {
            System.out.print("* ");
            i++;
        }
        // next Perp
        row++;
        System.out.println();

    }
}
```

1 ≤ 5
2 <= 5
3 <= 5
4 <= 5
5 ≤ 6

Row = ~~1~~ ~~2~~ ~~3~~ 4 5

Star = 5

Ques 2:

n = 5

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

Row = 1 to N

int Row = 1
int Star = 1

while (Row ≤ n){
  // star
  int i = 1
  while (i ≤ Star){
    Syso("*");
    i++
  }
  // next prep
  Syso(); Row++
  Star++
}

only star print

```
public static void main(String[] args) {
        // TODO Auto-generated method stub
        int n = 5;
        int row = 1;
        int star = 1;
        while (row <= n) {
            // star
            int i = 1;
            while (i <= star) {
                System.out.print("* ");
                i++;
            }
            // next Perp
            row++;
            System.out.println();
            star++;

        }
    }
```

Row ≤ n
1 ≤ 5
2 ≤ 5
3 <= 5
4 <= 5
5 <= 5
6 <= 5

N = 5

Star = ~~1~~ ~~2~~ ~~3~~ ~~4~~ ~~5~~ 6

Row = ~~1~~ ~~2~~ ~~3~~ ~~4~~ ~~5~~ 6

```
public static void main(String[] args) {
        // TODO Auto-generated method stub
        int n = 5;
        int row = 1;
        int star = n;
        int space = 0;
        while (row <= n) {
            // space
            int i = 1;
            while (i <= space) {
                System.out.print("--");
                i++;
            }

            // star
            int j = 1;
            while (j <= star) {
                System.out.print("* ");
                j++;
            }

            // next Row Prep
            System.out.println();
            row++;
            space++;
            star--;
        }
    }
```

Row = ~~1~~ ~~2~~ ~~3~~ ~~4~~ 5
Space = ~~0~~ ~~1~~ ~~2~~ 3 4
Star = ~~5~~ ~~4~~ 3 2

Ques 5:

n = 5

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

int Star = N
int Space = 0
int Row = 1

loop (Row <= n) {
  // space
  ① int i = 1
    while (i <= space) {
    i++
  }
  // star
  ② int j = 1
    while (j ≤ star) {
    j++
  Row++ Syso() Star--
  Space++
}

Ques 9:
n = 5

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

N = 5
int Row = 1
int Space = n-1
int Star = 1

loop (Row ≤ N) {
  // space

  // Star

  // next Row Prep
  Syso() Star += 2;

```
public static void main(String[] args) {
        // TODO Auto-generated method stub
        int n = 5;
        int row = 1;
        int star = 1;
        int space = n - 1;
        while (row <= n) {
            // space
            int i = 1;
            while (i <= space) {
                System.out.print("  ");
                i++;
            }
            // star
            int j = 1;
            while (j <= star) {
                System.out.print("* ");
                j++;
            }
            // next row prep
            System.out.println();
            row++;
            star += 2;// star = star+2;
            space--;

        }
```

Row = ~~1~~ ~~2~~ 3
Star = ~~1~~ ~~3~~ 5
Space = ~~3~~ 2

n = 5 ✓

Ques 12:
n = 5

```
        *
      * ! *
    * ! * ! *
  * ! * ! * ! *
* ! * ! * ! * ! *
```

J = 2 → !
J = 2, 4

Ques 21:

n = 5

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

int Row = 1
int Star = 1
int Space = 2×n-3

While (Row ≤ n){
  // star
  int i = 1;
  while (i <= star){
    Syso (*)
    i++
  }
  // space
  int j = 1
  while (j ≤ Space){
    Syso (' ');
    j++
  }
  // Star
  loop k
  Row++ Star-- Star++
}

```
public static void main(String[] args) {
        // TODO Auto-generated method stub
        int n = 5;
        int row = 1;
        int star = 1;
        int space = 2 * n - 3;
        while (row <= n) {
            // star
            int i = 1;
            while (i <= star) {
                System.out.print("* ");
                i++;

            }
            // space
            int j = 1;
            while (j <= space) {
                System.out.print("  ");
                j++;
            }
            // star
            int k = 1;
            while (k <= star) {
                System.out.print("* ");
                k++;
            }
            // next row Prep
            System.out.println();
            row++;
            star++;
            space -= 2;

        }

    }
```

1 ≤ 5
2 ≤ 5
3 ≤ 5
4 ≤ 5
5 ≤ 5
Row = n

Row = ~~1~~ 2 3 4 5
Star = ~~1~~ 2 3 4 5
Space = ~~7~~ 5 3 1 -1

Ques 22:
n = 5

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

-1
1
3
5
7

int Row = 1
int Star = n;
int Space = -1

loop (Row ≤ n) {
  // Star
  // space
  // Star
  // nextRow
}

```
public static void main(String[] args) {
        int n = 5;
        int row = 1;
        int star = n;
        int space = -1;
        while (row <= n) {
            // star
            int i = 1;
            while (i <= star) {
                System.out.print("* ");
                i++;

            }
            // space
            int j = 1;
            while (j <= space) {
                System.out.print("  ");
                j++;
            }
            // star
            int k = 1;
            if (row == 1) {
                k = 2;
            }
            while (k <= star) {
                System.out.print("* ");
                k++;
            }
            // next row Prep
            System.out.println();
            row++;
            star--;
            space += 2;
        }

    }
```

1 ≤ 5
1 <= 2

Row = ~~1~~ ~~2~~ ~~3~~ 4 5
Star = ~~5~~ ~~4~~ ~~3~~ 2 1
Space = ~~-1~~ ~~1~~ ~~3~~ 5 7