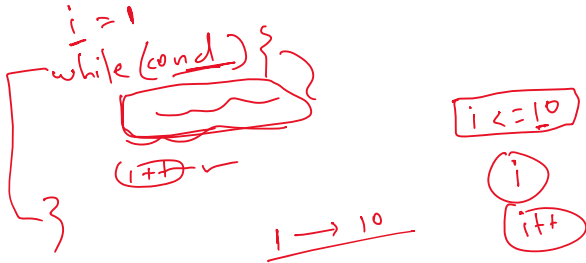


Loops

- ↳ ① for
- ② while ✓
- ③ do-while
- ④ forEach



```
int i = 1; //
int n = 10;
while (i <= n) {
    System.out.println(i);
    i++;
}
```

1 <= 10 → 1
2 <= 10 → 2
⋮
10 <= 10 → 10
11 <= 10 → ✗

Ques 1:
n = 5

→ * * * * *

→ * * * * *

→ * * * * *

→ * * * * *

→ * * * * *

identify → type of task
n = 5
row = 1 2 3 4 5
star = n

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

1 <= 5
2 <= 5
3 <= 5
4 <= 5
5 <= 5
6 <= 5

Ques 2:
n = 5

→ *

→ * *

→ * * *

→ * * * *

→ * * * * *

→ *

→ * *

→ * * *

→ * * * *

→ * * * * *

row = 1 2 3 4 5
star = 1 2 3 4 5

```
int n = 5;
int star = n;
int row = 1;
while (row <= n) {
    // Star
    int i = 1;
    while (i <= star) {
        System.out.print("* ");
        i++;
    }
    row++; star++;
    // Next line prep
    System.out.println();
}
```

```

- / *
-> * * *
- 2 * * *
-> * * * * *

```

}

Ques 2:
n = 5

```

- *
- * *
- * * *
- * * * *
- * * * * *

```

row = 1 star = 1

while(row <= n) {

```

    // star
    int i = 1
    while(i <= star) {
        cout << "*"
        i++
    }

```

→ row++, star++
// next line pref
→ cout << "\n"

}

Ques 4:
n = 5

```

-> - - - - *
- - - - *
- - - *
- - *
- *

```

n = 5

row = 1 2 3 4 5 6

space = n - 1 4 3 2 1 0
star = 1 2 3 4 5 6

while(row <= n) {

```

    // space
    int i = 1
    while(i <= space) {
        cout << " "
        i++
    }

```

```

    // star
    int j = 1
    while(j <= star) {
        cout << "*"
        j++
    }

```

```

    row++
    space--
    star++
    // next

```

}

```

-> - - - - *
-> - - - *
-> - - *
-> - *
-> *

```