⟹ Revision

- While loop
- Pattern Question
- Number Theory
- String
- functions

While

syntax)

initialization
while (condition) {
    //Statement (काम)
    inc/dec ;
}

nth power of 10 using while loop

```
public static void main(String[] args) {
    Scanner scn = new Scanner(System.in);
    int n = scn.nextInt();
                          (6)
    int ans = solve(n);
    System.out.println(ans);
}

                                  (6)
public static int solve(int n) {
    int ans = 1;
    while ( n-- > 0 ) {
        ans = ans * 10;
    }
    return ans;
}
```

return something

ans = 1;

n > 0 } 6 > 0 } ans = 10;

5 > 0 } ans = 100

4 > 0 } ans = 1000

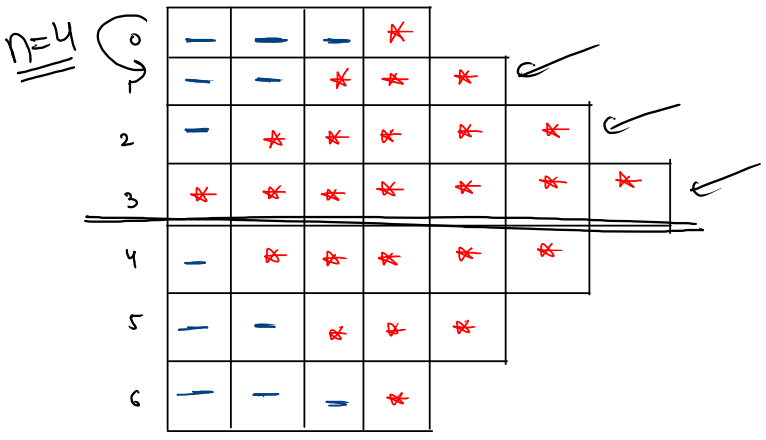
3 > 0 } ans = 10,000

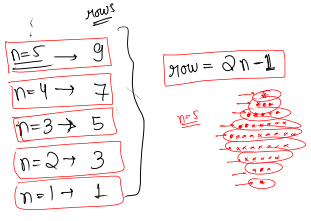
2 > 0 } ans = 1,00,000

1 > 0 } ans = 10,00,000

0 > 0 } ✗

GKSTR29_Pattern_12_Diamond






```
int row = 2*n-1; // 7
int sp = n-1;
int st = 1;
for(int i=0; i<row; i++){
    for(int j=0; j<sp; j++){
        Syso(" ");
    }
    for(int j=0; j<st; j++){
        Syso("*");
    }
    if(i<row/2){    //3
        sp--;
        st+=2;
    }else{
        sp++;
        st-=2;
    }
    Sysoln();
}
```

n=4

```
for(int i=0; i<n; i++)
```

```java
public static void main(String[] args) {
    Scanner scn = new Scanner(System.in);
    int n = scn.nextInt();

    int row = 2 * n - 1;
    int st = 1;
    int sp = n - 1;
    for (int i = 0; i < row; i++) {

        for (int j = 0; j < sp; j++) {
            System.out.print(" ");
        }

        for (int j = 0; j < st; j++) {
            System.out.print("*");
        }

        if (i < row / 2) {
            sp--;
            st += 2;
        } else {
            sp++;
            st -= 2;
        }
        System.out.println();
    }
}
```

String

String str = "a2AB32+-54ZzK";

0 1 2 3 4 5 6 7 8 9 10 11 12

str.substring(start idx, end index + 1);

str.substring(3, 9)

↳ "B32+-5"

str.length() ⟶ 13 (int)

str.charAt(9) ⟶ 9 (char)

String str = "Jatinanshmadan";

str.substring(5,9) → "ansh"

str.substring(6,11) → "nshma"

str.substring(8,13) → "hmada"

str.substring(10,14) → "adan"

str.substring(5,16) → error

str.substring(9) → "madan"

str.substring(6,7) → "n"