dry run

```
public static void main(String[] args) {
    int turn = 1;
    for (char ch = 'a'; ch <= 'z'; ch++) {
        if (turn % 2 == 0) {
            char ch1 = (char)(ch - 32);
            System.out.println(ch1);
        } else {
            System.out.println(ch);
        }
        turn++;
    }

}
```

turn :- 1 2 3 4 5 6

ch :- a b c d e f

a B c D e F ..... z

GKSTR15 Print_Even

1) → from 0 to n by +2

2) → from 0 to n by +1, if n is even then print

1)
```
for (int i=0 ; i<=n ; i+=2){
    Syso(i);
}
```

2)
```
for ( int i=0 ; i<=n ; i++){
    if ( i %. 2 == 0){
        Syso (i);
    }
}
```

Code

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

    for (int i = 0; i <= n; i += 2) {
        System.out.println(i);
    }
}
```

→ String

String str = "abCDe";
0 1 2 3 4

1) str.length(); //5

2) str.charAt(index); // 'C'
2

Print Alternate Elements of a String

String str = "Geekster";
0 1 2 3 4 5 6 7

i <= len (8)

loop 1) from 0 to str.length() by +2

1.1) char ch = str.charAt(i);

1.2) concatenate ch with the answer

Code

```
public static void main(String[] args) {
    Scanner scn = new Scanner(System.in);
    String str = scn.nextLine();

    for (int i = 0; i < str.length(); i += 2) {
        char ch = str.charAt(i);
        System.out.print(ch);
    }
}
```

o/p

KsKae

str = "KushKhare" X

0 1 2 3 4 5 6 7 8 10

i=0, (0<9) ✓ ch='K'

i=2, (2<9) ✓ ch='s'

i=4, (4<9) ✓ ch='K'

i=6, (6<9) ✓ ch='a'

i=8, (8<9) ✓ ch='e'

i=10, (10<9) x

Code

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

    String ans = "";
    for (int i = 0; i < str.length(); i += 2) {
        char ch = str.charAt(i);
        ans = ans + ch;
    }
    System.out.println(ans);
}
```

str = "AbhikPatra";

0 1 2 3 4 5 6 7 8 9

ans = "";

---

i = 0, ch = 'A', ans = "" + 'A';

ans = "A"

---

i = 2, ch = 'h', ans = "A" + 'h'

ans = "Ah"

---

i = 4, ch = 'k', ans = "Ah" + 'k'

ans = "Ahk"

---

i = 6, ch = 'a', ans = "Ahka"

---

i = 8, ch = 'r', ans = "Ahkar"

---

i = 10, ch = X

Reverse The String

String str = "geekster";

0 1 2 3 4 5 6 7

↳ from 0 to str.length by +1

```
String ans = "";
for(int i=0; i < str.length(); i++){
    char ch = str.charAt(i);
    ans = ch + ans;
}
Syso(ans);
```

code

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

    String ans = "";
    for (int i = 0; i < str.length(); i++) {
        char ch = str.charAt(i);
        ans = ch + ans;
    }
    System.out.println(ans);
}
```

str = "manish";
0 1 2 3 4 5

ans = ""

i = 0, ch = 'm', ans = 'm' + "" = "m"

---

i = 1, ch = 'a', ans = 'a' + "m" = "am"

---

i = 2, ch = 'n', ans = 'n' + "am" = "nam"

---

i = 3, ch = 'i', ans = i + nam = inam

---

i = 4, ch = 's', ans = s + inam = "sinam"

---

i = 5, ch = 'h', ans = "hsinam"

nth power of 2

int n = 4;

ans = 2^4 = 16

$2^4 = \underbrace{2 * 2 * 2 * 2}_{4}$

```
int ans = 1;
for(int i=1; i<=n; i++){
    ans = ans * 2;
}
```

```java
public static void main(String[] args) {
    Scanner scn = new Scanner(System.in);
    int n = scn.nextInt();
    int ans = 1;
    for (int i = 1; i <= n; i++) {
        ans = ans * 2;
    }
    System.out.println(ans);
}
```

n = 5

ans = 1

i = 1, ans = 1 * 2 = 2

i = 2, ans = 2 * 2 = 4

i = 3, ans = 4 * 2 = 8

i = 4, ans = 8 * 2 = 16

i = 5, ans = 16 * 2 = 32

i = 6 X