0 1 2 3 4
String str = "a c d e";

char ch = str.charAt(4) // 'e'
= str.charAt(1) // 'b'
= str.charAt(0) // 'a'

```java
public static void main(String[] args) {
    char ch = scn.next().charAt(index: 0);
    // System.out.println("my Character is: " + ch);
    if (ch >= 'a' && ch <= 'z')
        System.out.println(x: "character is lower case");
    else if (ch >= 'A' && ch <= 'Z')
        System.out.println(x: "character is upper case");
    else
        Systemx: .out.println("Invalid Input");
}
```

a → 10
b - 11
c - 12
d = 13
e = 14
:
:
z = 36

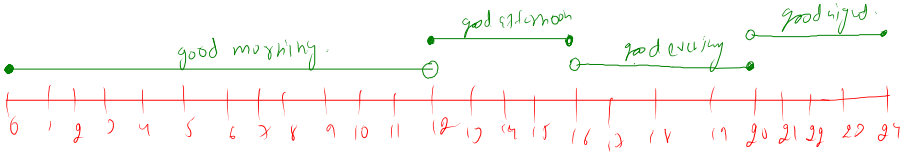
a = 10
:
:
z = 96

A → 100
B → 101
C = 102
D = 103
E = 104
:
:
Z = 126

[a, z] → lower case
[A, Z] → upper case

- WAP to input hour(24 hour format) and print good morning(<12) / good afternoon(<=16) / good evening(<=20) / good night.
- Jumble the order of if- else in last ques to show how it gives wrong output, explain importance of order in if ,else if .
- Difference between if-if-if and if-else if-else.
- Discuss report card problem and give practice work.

Nested if (10 mins)
- Syntax
- Instead of if(A && B) we can nest two if(A) -> if(B)
- Will look at it's use later in the course




```java
if (time < 12)
    System.out.println(x: "good morning");
else if (time <= 16)
    System.out.println(x: "good afternoon");
else if (time <= 20)
    System.out.println(x: "good evening");
else
    System.out.println(x: "good night");
```

correct
→ loose bound condition

```java
int time = scn.nextInt();
// System.out.println("my Character is: " + ch);
if (time < 12)
    System.out.println(x: "good morning");
else if (time <= 20)
    System.out.println(x: "good evening");
else if (time <= 16)
    System.out.println(x: "good afternoon");
else
    System.out.println(x: "good night");
```

wrong.
→ if - else order always matter

```java
if (n >= 0 && n <= 10)
    System.out.println(x: "number in between 1 to 10");
if (n > 10 && n <= 20)
    System.out.println(x: "number in between 11 to 20");
if (n > 20 && n <= 30)
    System.out.println(x: "number in between 21 to 30");
if (n > 30)
    System.out.println(x: "number is greater then 30");
```

if() → 25
print → 11

h = 27

(a) (if - else - if) is always better than (if if if)

2 numbers = 2, 3, 5, 7, 11

if n is multiple of 5

if n is multiple of 7

if n

```java
public static void main(String[] args) {
    int n = 10; 5
    int i = 1;
    while (i <= n) {
        System.out.println(i);
        i++;
    }
}
```

while (condition) {
    task;
}

only fix time

```java
for (int i = 1; i <= n; i++) {
    System.out.println(i);
}
```

① ③ ② ④

① condition
② task
③ increment

n = 5

1
2
3
4
5

1
2
3
4
5

(1 → 2 → 1 → 2 → 1 → 2 → 1 → 2)

```java
public static void main(String[] args) {
    int val = scn.nextInt();
    for (int i = 1; i <= 10; i++) {
        System.out.println(val + " X " + i + " = " + (val * i));
    }
}
```

1/2 = 0 ==

1/2 = 0.5 x divide = 2

no of steps required to make given number zero. by dividing only with 2

n = 17/2 = 8
= 8/2 = 4
= 4/2 = 2
= 2/2 = 1
= 1/2 = 0

5 steps

val = 5

i = 1 2 3 4 5 6 7 8 9 10

5 X 1 = 5
5 X 2 = 10
5 X 3 = 15
5 X 4 = 20
5 X 5 = 25
5 X 6 = 30

5 X 7 = 35
5 X 8 = 40
5 X 9 = 45
5 X 10 = 50