

⇒ Type-Casting // converting one data-type
to another

↳ Implicit :- automatic conversion based
on priority of data type

↳ Explicit :- forceful conversion

Ex :-

char c = 'a' ; 97
int i = 100 ;

Implicit :- int ans = (c + i) ; // 197

Explicit :-

char ans = char (c + i) ;

Ques convert a character digit into int digit

$$\begin{array}{c} \text{i/p} := \underline{\underline{'7'}} \\ \text{o/p} := \underline{\underline{7}} \end{array}$$

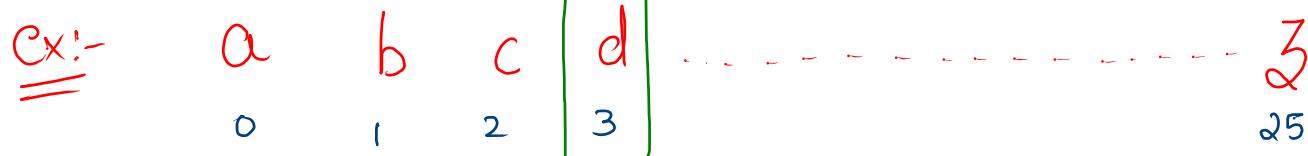
i/p :- char ch = '7' ;

o/p :- int num = ch - '0' ; // 7

Subtracted character type of smallest value of that range.

'0'	→ 48
'1'	→ 49
'2'	→ 50
'3'	→ 51
'4'	→ 52
'5'	→ 53
'6'	→ 54
'7'	→ 55
'8'	→ 56
'9'	→ 57

Ques find out the index value of any given small case alphabet.



i/p:- $\text{char ch} = \text{'d'};$

o/p:- $\text{int idx} = \text{ch} - \text{'a'};$

Note:-

'a' → 97

'b' → 98

'c' → 99

'd' → 100

,

'z' → 122

Toggle the character

i/p :- $ch = 'b' \rightarrow 'B'$

$ch = 'Z' \rightarrow '3'$

$ch = 'D' \rightarrow 'd'$

if $char c = 'b'$
 $char ans = \underline{\underline{(char)(c - 32)}}$;

~~logic~~

$'a' \rightarrow 97 \xleftarrow{32} 'A' \rightarrow 65$

$'b' \rightarrow 98 \qquad \qquad 'B' \rightarrow 66$

$'c' \rightarrow 99 \qquad \qquad 'C' \rightarrow 67$

$'d' \rightarrow 100 \qquad \qquad 'D' \rightarrow 68$

,

,

,

,

,

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$'z' \rightarrow 122 \qquad \qquad 'Z' \rightarrow 90$

Code

```
public static void main(String[] args) {  
    Scanner scn = new Scanner(System.in);  
    char ch = scn.next().charAt(0);  
  
    if ( ch >= 'a' && ch <= 'z' ) {  
        char ans = (char)(ch - 32);  
        System.out.println(ans);  
    } else if ( ch >= 'A' && ch <= 'Z' ) {  
        char ans = (char)(ch + 32);  
        System.out.println(ans);  
    }  
}
```

Print character at 3rd index

```
public static void main(String[] args) {  
    Scanner scn = new Scanner(System.in);  
    String str = scn.nextLine();  
  
    int len = str.length();  
    if ( len >= 4 ) {  
        char ch = str.charAt(3);  
        System.out.println(ch);  
    } else {  
        System.out.println("Small string");  
    }  
}
```

→ Concatenation (+)

String str1 = "abc";
 _{0 1 2}

String str2 = "ABC";
 _{0 1 2}

String ans1 = str1 + str2; // "abcABC";
 _{0 1 2 3 4 5}

String ans2 = str2 + str1; // "ABCabc";
 _{0 1 2 3 4 5}

String ans3 = str1 + "EFG" + str2; // "abcEFGABC"
 _{0 1 2 3 4 5}

String ans4 = str1 + 45; // "abc45"
 _{0 1 2 3 4}

Concatenate_Two_Strings

```
public static void main(String[] args) {  
    Scanner scn = new Scanner(System.in);  
    String str1 = scn.nextLine();  
    String str2 = scn.nextLine();  
  
    String ans = str1 + str2;  
    System.out.println(ans);  
}
```

string concatenate 2

i/p

```
str1 = "abhik";
```

```
str2 = "anubhav";
```

short + long + short

```
String ans = str1 + str2 + str1;  
// abhiKanubhavabhiK
```

Code

```
public static void main(String[] args) {  
    Scanner scn = new Scanner(System.in);  
    String str1 = scn.nextLine();  
    String str2 = scn.nextLine();  
  
    int len1 = str1.length();  
    int len2 = str2.length();  
  
    if (len1 > len2) {  
        String ans = str2 + str1 + str2;  
        System.out.println(ans);  
    } else {  
        String ans = str1 + str2 + str1;  
        System.out.println(ans);  
    }  
}
```

⇒ Loops (M. Imp)

↳ used to execute a particular piece of code multiple times.

Types of loops :-

- ↖ ↳ for loop ★
- ↖ ↳ while loop
- ↖ ↳ do while loop
- ↖ ↳ for each loop

→ for loops

Syntax:-

```
for ( initialization ; condition ; upgradation ) {  
    // Statement  
}
```

Note:- all 3 are optional

```
for ( initialization ; condition ; upgradation ) {  
    // Statement  
}
```

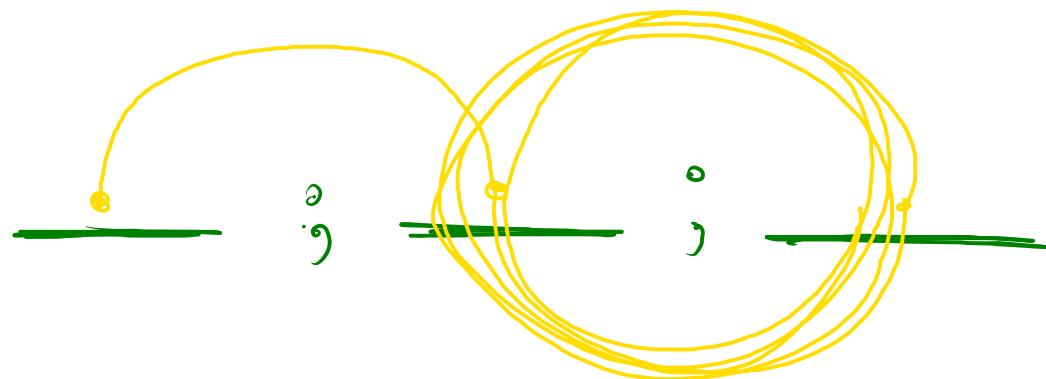
initialization :- from where to start

condition :- when will you stop

upgradation :- by how much to move

Ex:-

```
for (int i = 1; i <= 10; i++) {  
    Sys0(i);  
}
```



```

for ( int i = 1 ; i <= 10 ; i++ ) {
    Sys0(i);
}

```

\downarrow
 int $i = 1$, $\underline{1 \leq 10}$
 $i = 2$, $\underline{2 \leq 10}$
 $i = 3$, $\underline{3 \leq 10}$
 \vdots
 $i = 8$, $8 \leq 10$
 $i = 9$, $9 \leq 10$
 $i = 10$, $10 \leq 10$
 $i = 11$, $11 \leq 10 \times$

