

GOOD MORNING
EVERYONE ☺

Starting At 07:05 a.m.

Today's Content

1. char & char array
2. ASCII
3. Basic Type Casting
4. Questions

String

↳ Sequence of Characters

String s = "word@123";

System.out.println(s); → word@123

Character

Represents a single symbol

↳ Symbol can be anything

Alphabets

Numbers

Special
Characters

All characters
present on
keyboard

Alphabets

i. 'A' - 'Z'

[Uppercase Characters]

ii. 'a' - 'z'

[Lowercase Characters]

Numbers

'0' - '9'

[Numeric Characters]

Special Characters

'@', '#', '%', '&', '-', '.', ',', '-' ,.....

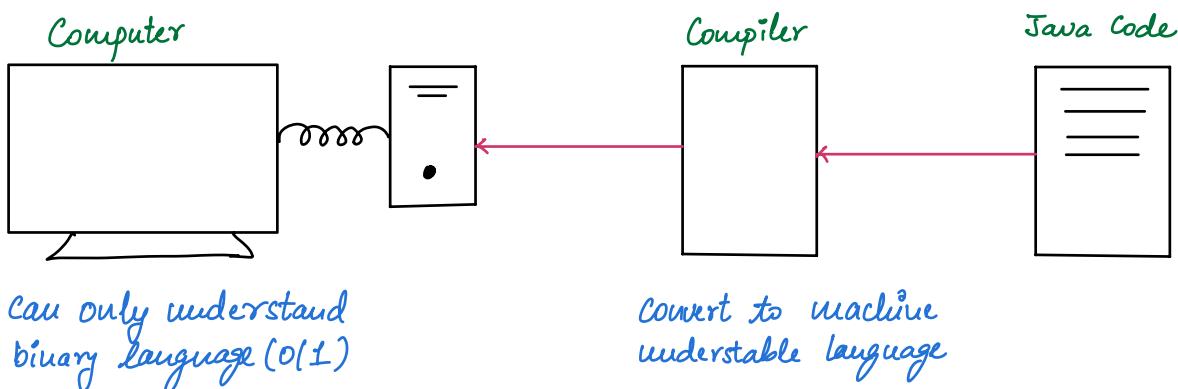
Total number of characters we have - 128 characters

Syntax

char name = 'Single Character';
 └→ single character should be in
 single-quoter (' ')

char ch = 'a';
System.out.println(ch); → a

char ch = 'ab';
 └→ more than one character
System.out.println(ch); → Error



i) Numbers → Binary Language

ii) Text → { Every char → Unique Number } → Binary Language

ASCII

American Standard Code for Information Interchange

Every character is associated with an integer value.

'A' → 65	'a' → 97	'0' → 48	
'B' → 66	'b' → 98	'1' → 49	Total : 128
'C' → 67	'c' → 99	'2' → 50	
'D' → 68	'd' → 100	'3' → 51	Range of ASCII value : 0-127
.	.	.	
.	.	.	
'Z' → 90	'z' → 122	'9' → 57	

Summary

1) Character Rules

- char to int, implicit type casting, we will get ASCII value of that character
- int to char, at times it can give you an error, hence use explicit type casting.

2) Character Properties

Converting character from Capital to small : add 32 to character

Converting character from small to Capital : subtract 32 from character

Range of Capital Characters : 65 to 90

Range of Small Characters : 97 to 122

3) Strings

String s = "Deepika";

Find length of string variable : name.length();

↳ length() is a function

Access ith character from String : name.charAt(i);

Concatenating Strings : use '+' operator

String s = "Hello";
s = s + " World";

System.out.println(s); // Hello World

Convert String to char[] : name.toCharArray();

Convert char[] to String : String.valueOf(ch); → char[]

Note: We cannot update characters at particular indexes in strings.
Prefer using `StringBuilder` to make any changes.

4) StringBuilder

`StringBuilder sb = new StringBuilder(name of string);`

- total number of characters : `name.length();`
- access any character : `name.charAt(index);`
- update character at any index : `name.setCharAt(index);`
- add at end : `name.append(char/string/etc.);`
- convert `StringBuilder` to `String` : `name.toString();`

Doubts

$$N = 5$$

1 1
 2 1 - 1
 3 1 - 2 - 1
 4 1 - 2 - 2 - 1
 5 1 - 2 - 3 - 2 - 1

i	space	Numbers (with space)
1	4	<u>1</u>
2	3	<u>1</u> <u>1</u>
3	-1	<u>1</u> <u>2</u> <u>1</u>
4	1	<u>1</u> <u>2</u> <u>2</u> <u>1</u>
5	0	<u>1</u> <u>2</u> <u>3</u> <u>2</u> <u>1</u>
i	$(N-i)$	

\downarrow
 $+1$

Loop 1 : $i \rightarrow i/2$
 Loop 2 : $i/2$ times

Observation 1 : In each row i numbers are getting printed

Observation 2 : In even rows, we have mirror image

Ques



ans \Rightarrow 6