DSA

Date :- 2nd September 2021

'Lecture → 1'

Steps :-

1. Open Pepcoding.com
2. Login / Signup
3. Go To Resources
4. Modules and lectures.

* As For Lecture1 → Go To 1. Basics of Programming
* Getting Started.

Java Begins

</> This Sign Signifies a Question

Q1 Print Z [Before This Lets Learn Some Basics]

(*) 1st Basic Skill in a Programming Language is To Print or get Output.

(*) 5 Basic Skills of a Programming Language

1. Print or get output
2. Variables
3. Conditionals
4. Loops
5. Taking Inputs

(*) Print in Java

↳ `System.out.print(" ");`

* System.out.print("Hello World");

Output => Hello World.

* System.out.print("Hello World");

System.out.print("Hello World");

Output => Hello WorldHello World

* we get the output in same line.

* System.out.print("Hello World \n");

System.out.print("Hello World");

Output => Hello world
Hello World

* Output next line में क्यों आया?

=> because "\n" enter मारने के लिए use करते हैं

=> So, जो cheez "/n" के बाद होगी वो next line से चली ✓ जाएगी

(*) system.out.println("Hello World");
system.out.println("Hello world");

Output => Hello world
Hello World

(*) So, Basic difference b/w println and print is :- println print करने के बाद enter मारता while print सिर्फ value को ही print करके देता।

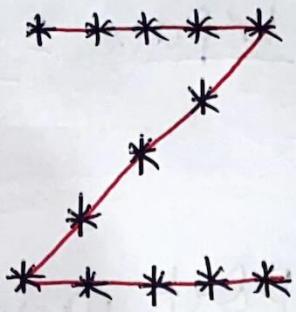
Lets Start Q1

Print Z

Given → you are required to print a 'Z' of size 5 using '*'

Input → no input

Output format →



Code & Dry Run

Dry Run:-

```
* * * * *    — ①
. . . *      — ②
. . *        — ③
. *          — ④
* * * * *    — ⑤
```

⇒ अब इसको line by line print करना होगा

⇒ now we will use "system.out.println" 5 times

⇒ हमें space का भी ध्यान रखना होगा

✱ As you can see in line ① & ⑤

→ हमें सारे 5 stars print करना है

✱ In line ② 3 spaces & 1 star

✱ In line ③ 2 spaces & 1 star

(*) In line (4) 1 space & 1 star

Code :-

```
import java.util.*;

Public Class Main {

Public static Void main (String [] args) {

System.out.println("*****");

System.out.println("**");
```

This is a mistake

why? => because we didn't account for spaces

```
System.out.println("...*");

System.out.println("..*");
```

(*) These dots represent spaces but during the coding you need not write them. They are only for understanding purposes.

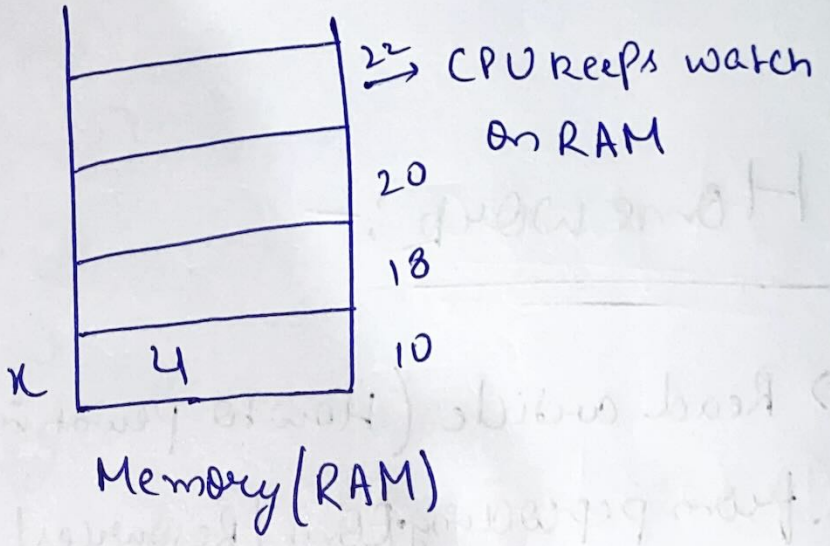
```
System.out.println(".*");

System.out.println("*****");
```

}}

Variables (Basic Skill #2)

* Variable is basically a container which stores a value

* $x = 4$



⇒ Computer memory RAM has memory locations & address for each location

⇒ When we write "$x = 4$" computer CPU finds 1st empty address in RAM and assigns it a value 4 & starts calling that address as 'x'

⇒ When we write $x = 4$; we feel the statement is complete but we need to specify the type of variable also. Now when we write :⇒ $int\ x = 4$;

⇒ This means we are telling computer that x is an integer & it has value 4.

(*) Lets try :-

```
int x = 4;
System.out.println(x);
System.out.println("X");
```

Output :- 4

X.

Homework :-

=> Read article (How to Print in Java) from pepcoding.com | Resources |

=> Code Print Z

=> Read article on (Variables)

=> Solve MCQ on Variables

BOOK Recommendation

↳ Head First Java

Homework

MCQ

Q what is output of following code :-

```
int a = 10;  -(1)
int b = 20;  -(2)
a = a+b;  -(3)
b = a-b;  -(4)
a = a-b;  -(5)
System.out.println(a+" "+b);
```

Soln ✱ when line (1) runs CPU allocates a memory location 'a' with value 10.

✱ when line (2) runs another memory location is taken with 'b' with a value 20.

✱ when line (3) runs; right side is evaluated & answer is assigned to left side so, 30 is assigned to 'a'

✱ when line (4) runs 30-20=10 is assigned to 'b'.

✱ For line (5) 'a' gets value 20.