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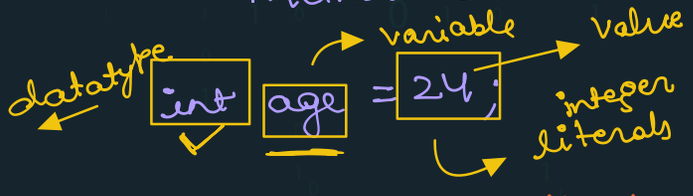
Literals & Variables

- Literals
- Variables → how to create a variables → unique
- Rules for Naming a variables
- Comparison operator
- data-types
- How to take an input from the user → Scanner class, scn object, methods ( )



Literals :

- fixed value that we can use directly in our program.

Eg → 3, 9, 11.76, 'c', "Krishna"

Types of Literals :

- Integers : Numeric values without decimal
  → 3, 9311, -117, etc
- Floating Number → Numeric value that contains decimals
  → 13.99, -7.67, etc

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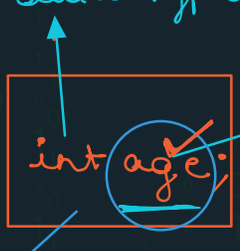
Character → 'c', 'k', '#' '$'
'1', '2' → character

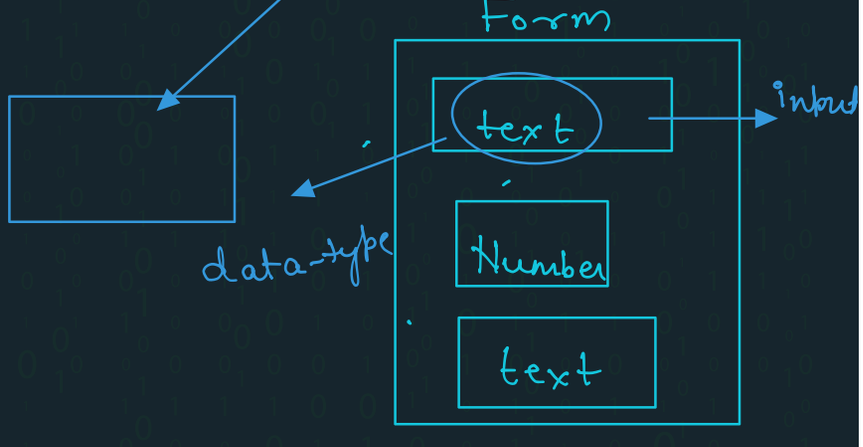
String → text "hello"
↳ collections of characters
'k' 'r' 'i' 's' 'h' 'n' 'a'
"krishna"

Variables :

Variables are used to store data, so that we can use it later on

data-types
variable name





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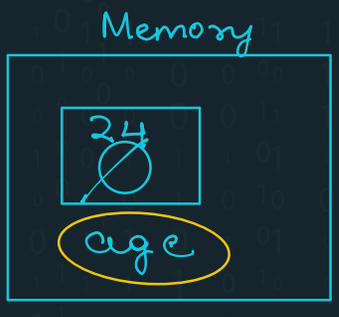
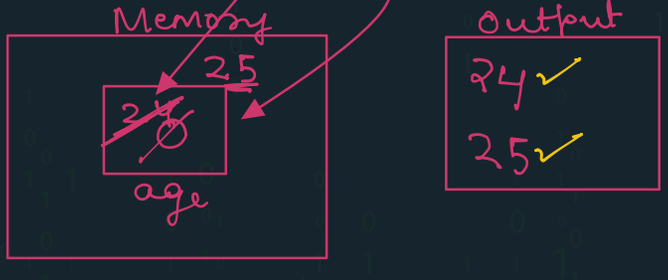
```
int age; // declaration
age = 24; // assigning the value;
```




```
int age; // declaration
age = 24;// assigning the value;
System.out.println(age);
age = 25; // re-assigning the value ;
System.out.println(age);
```




```
public static void main(String[] args) {
  int age = 24; // declaration + assigning the value;
  System.out.println(age);
```

comment

Data-types

- Integer [-∞ , ∞] → Numeric value
  - → int → short ; long
- Floating Numer [-∞ , ∞] → Decimals
  - double
  - float

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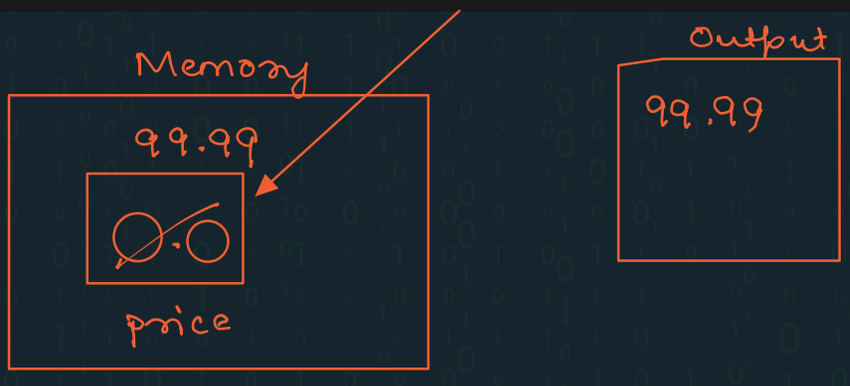
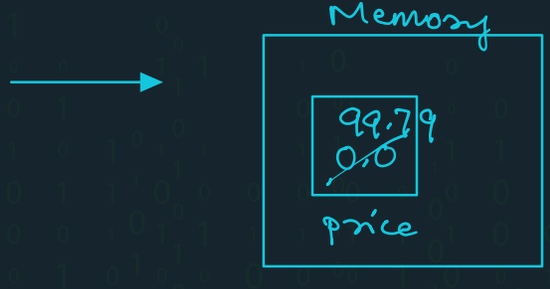
```java
public static void main(String[] args) {
    double price = 99.99;
    System.out.println(price);
}
```




```java
ic class Main {
public static void main(String[
    float price = 99.79f;
    System.out.println(price);
}
```



Double VS Float

Decimals

80kg

range → double > float

accuracy
100 kg
double

accuracy
50 kg
float

→ size()

→ ISRO calculation

→ value ↓

→ accuracy ↑

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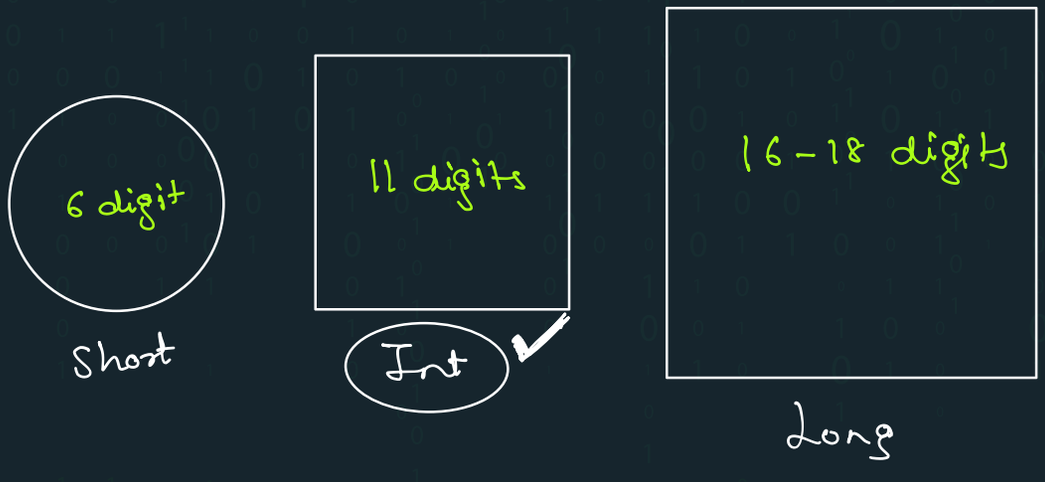
1.999999 → double . → more accuracy

1.98 → 1-3% error

Short VS Int VS Long → data type (Integer)



3967 → Short

4 digits

33678914 → int

- character datatype → char
- Text value → String
- boolean datatype → true / false

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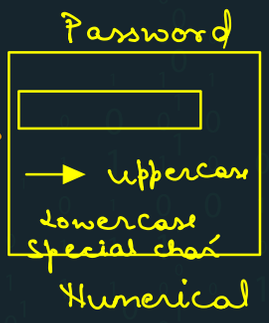
Rules for Naming A Variable :

1) Variables consists of alphabets, digits, $, _ (underscore)

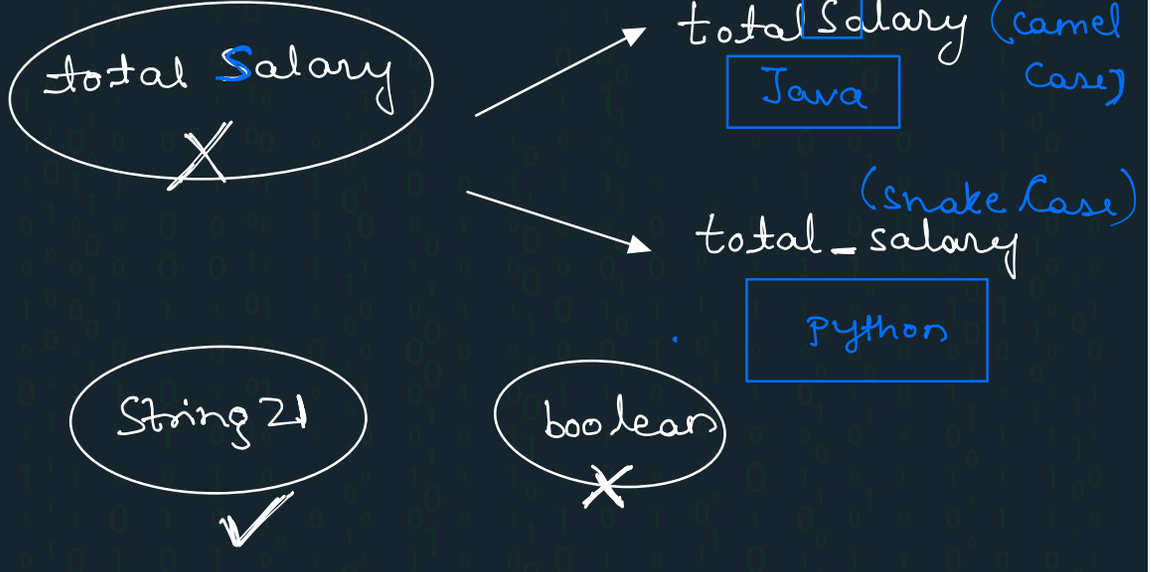


2) Variable cannot start with a Number.

3) Java keyword → Predefined ✗

Eg → static, class, double, boolean, String

Eg: salary ✓, 21salary ✗, _salary ✓, salary_21 ✓



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Data -Types Range , Bytes?

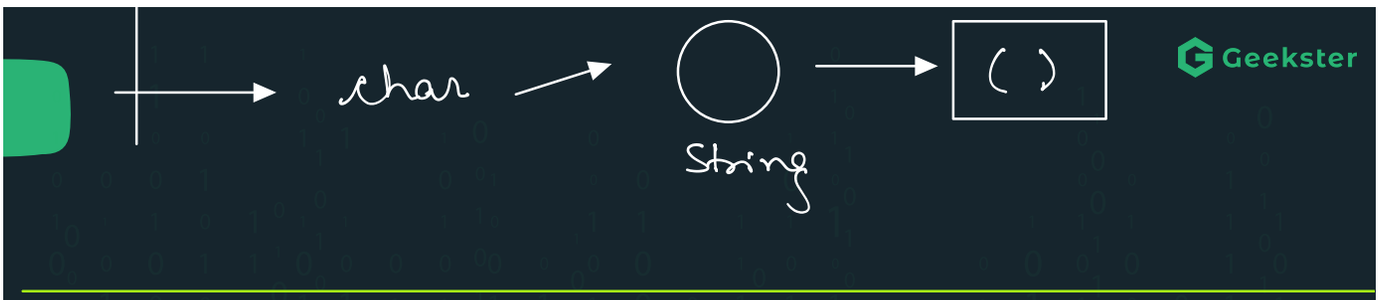
- Int → 4 bytes
  - → $[-2^{32}, 2^{32}-1]$
  - → [-2147483648, 2147483647)
- double → 8 bytes
- float → 4 bytes
- char → 2 bytes
- boolean → 1 bytes

Scanner Class - How to take an input from the user?

```
int age = 24;
```
→ programmer

```
int age = ____.();
```

- Int
- Decimal [Double / float]
- String
  - method1
  - method2
- Boolean



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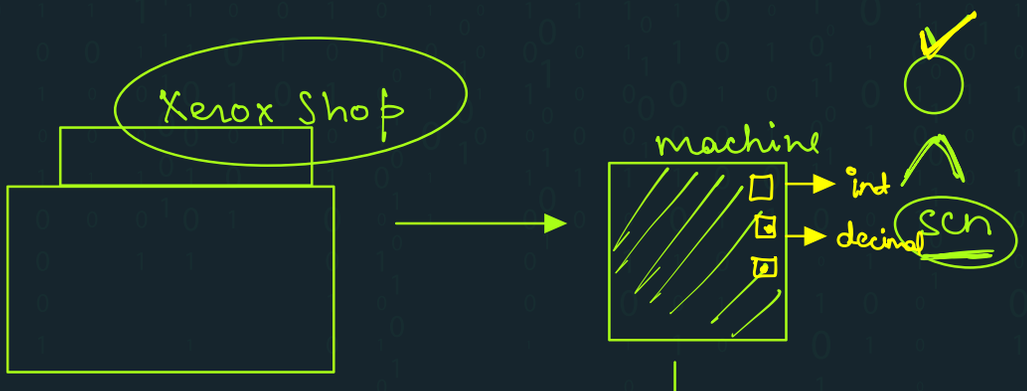
```
Scanner scn = new Scanner(System.in);
int age = scn.nextInt();
System.out.println(age);
```

class obj int value method



Integer

int age = 24;

scn.nextInt();

obj name

```
Scanner scn = new Scanner(System.in);
int age = scn.nextInt();
System.out.println(age);

double price = scn.nextDouble();
System.out.println(price);
```

Integer

Decimal

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```
    Scanner scn = new Scanner(System.in);
    int age = scn.nextInt();
    System.out.println(age);

    double price = scn.nextDouble();
    System.out.println(price);

    float item_price = scn.nextFloat();
    System.out.println(item_price);
}
```

obj.name

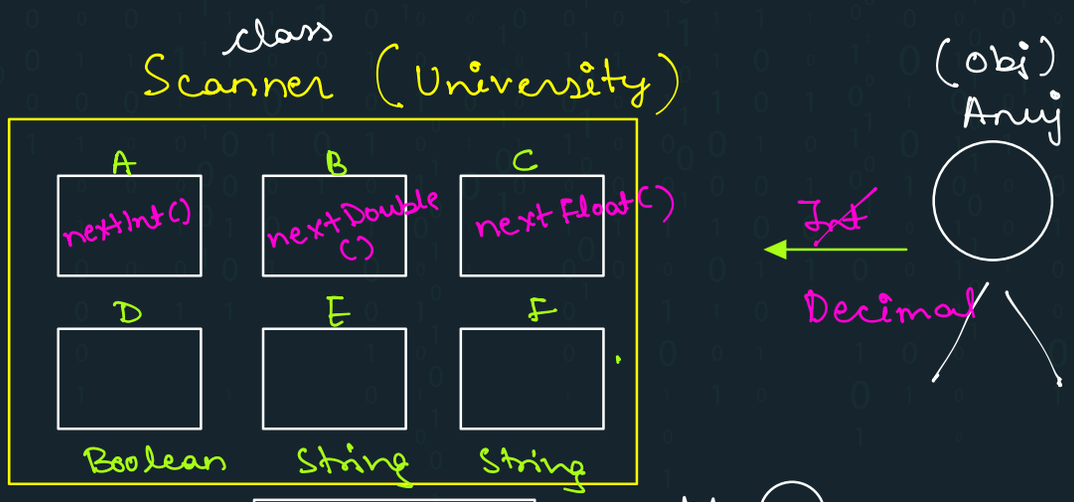
Int

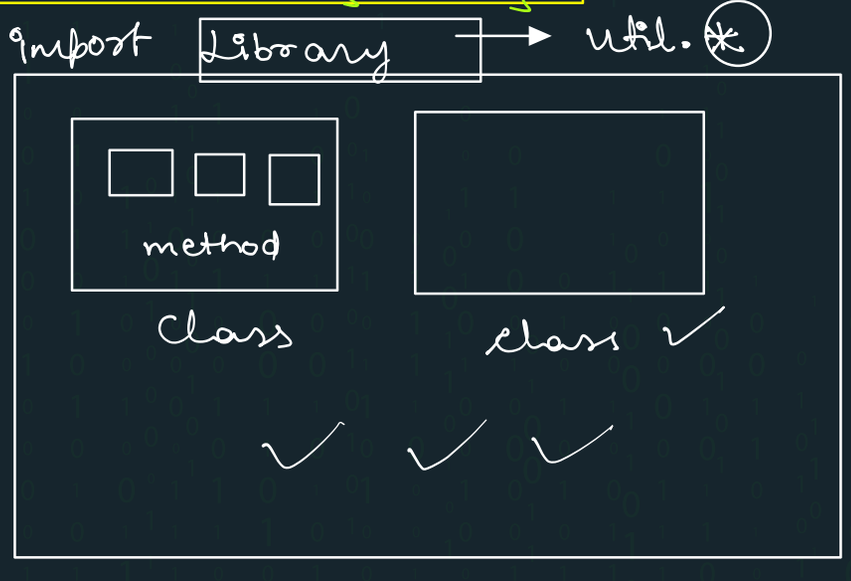
int age = □

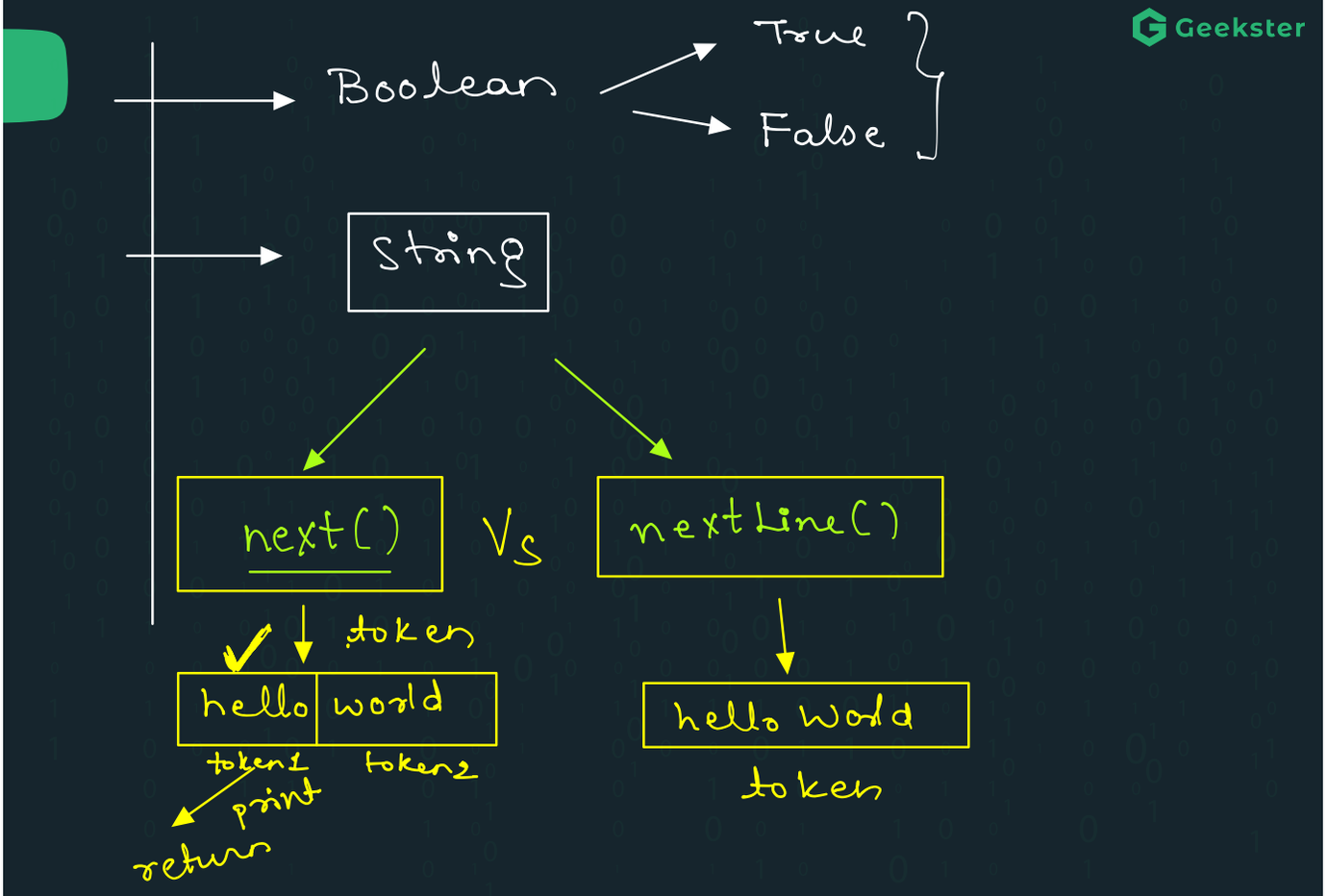
user

Double

Float








```
String str = scn.next();
System.out.println(str);
```

Hello

Hello | World
token1 token2

Hello

```
String str1 = scn.nextLine();
System.out.println(str1);
```

until the next line Enter

Hello my name is Krishna

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Comparison Operator: → T/F

< Less than	7 < 6 → F 63 < 67 → T
<= less than or equal to	7 <= 7 → T
> greater than	6 > 5 → T 6 > 9 → F
>= greater than or equal to	75 >= 73 → T 71 >= 89 → F
== comparison	25 == 23 → F 21 == 21 → T
!= not equal to	71 != 7 → F 71 != 3 → T

→ System.out.println( )

comparison operator

True | False

Sum and Difference of x and y

Problem | Submissions | Leaderboard | Discussions

You will be given two integers x and y. You have to print the sum of x and y in the first line, and the difference of x and y in the second line.

First integer input should be stored in x, Second integer input should be stored in y.

Input Format

In the first line the value of x will be given and in the second line the value of y will be given.

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```
Scanner scn = new Scanner(System.in);
int x = scn.nextInt();
int y = scn.nextInt();
int sum = x+y;
int diff = x-y;
print(sum);
print(diff);
```

4 variables

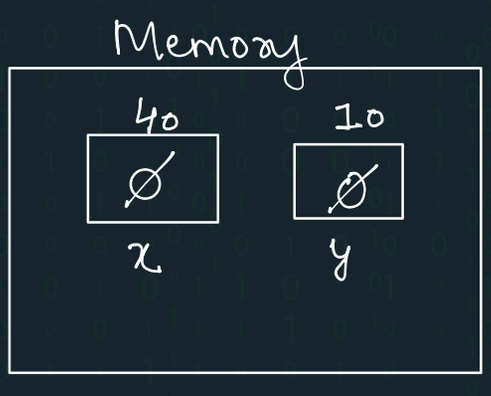
More space

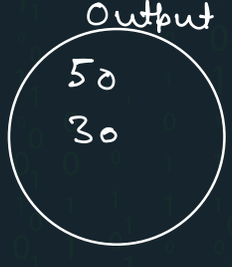
```
print(x+y);
print(x-y);
```

```
/* Enter your code here. Read input from STDIN.
Scanner scn = new Scanner(System.in);
int x = scn.nextInt();
int y = scn.nextInt();
System.out.println(x+y);
System.out.println(x-y);
```

(40 + 10) → 50

(40 - 10) → 30





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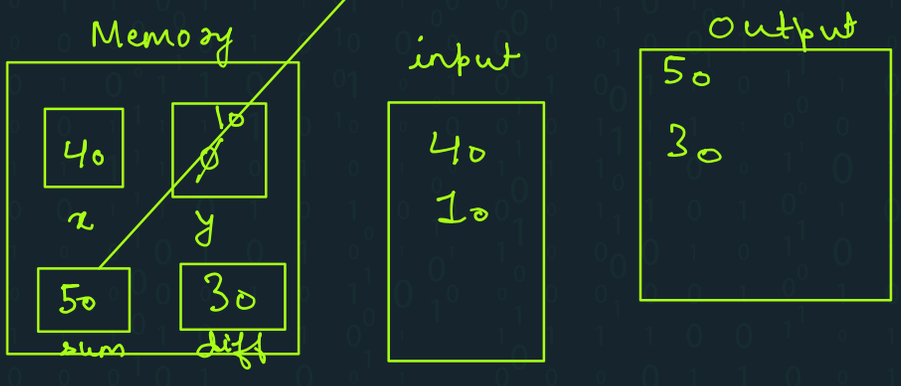
```
Scanner scn = new Scanner(System.in);
int x = scn.nextInt();
int y = scn.nextInt();
int sum = x + y;
int diff = x - y;
System.out.println(sum);
System.out.println(diff);
```



Area and Perimeter 5

Problem | Submissions | Leaderboard | Discussions

Take length and breadth of the rectangle as input. And print area of the rectangle in the first line and perimeter of the rectangle in the second line.

→ Scanner class →

```
int l = scn.nextInt();
    b = ";
int area = l * b;
int peri = 2*(l+b);
print(area);
print(peri);
```

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```
public static void main(String[] args) {
  /* Enter your code here. Read input from
  Scanner scn = new Scanner(System.in);
  int length = scn.nextInt();
  int breadth = scn.nextInt();

  int area = length * breadth;
  int perimeter = 2 * (length + breadth);
  System.out.println(area);
  System.out.println(perimeter);
```

→ 200

→ 60

7/6*5%4

1*5

5%4

= 1