L4 - Java
Practice Session (Warm Up)

RECAP

1. Conditional statements
   a) If-else
   b) If-else Ladder
   c) Ternary Operator

2. Switch

3. For Loop
   a) Initialisation
   b) Condition
   c) Updation

4. Problems:
   a) Print from 1 to N
   b) Print from N to 1

```
for (int i = 1; i <= N; i++)
    System.out.println(i);
```

More problems to try yourself

1. Print even numbers from 1 to N.
2. Print only those even numbers from 1 to N that are divisible by 7 also.
3. Print the table of a given number. E.g. 4, 8, 12, 16, 20, 24, 28, 32, 36, 40.

A problem - FizzBuzz

Given a number N, iterate i = 1 to N:

Print "FizzBuzz" if i is a multiple of both 3 and 5.

Print "Fizz" if i is a multiple of 3 only.

Print "Buzz" if i is a multiple of 5 only.

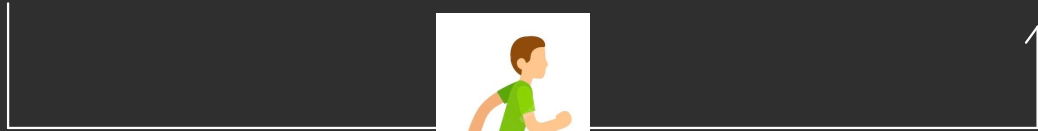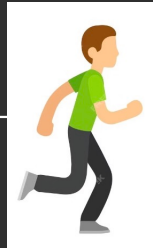Otherwise, print the value of i.
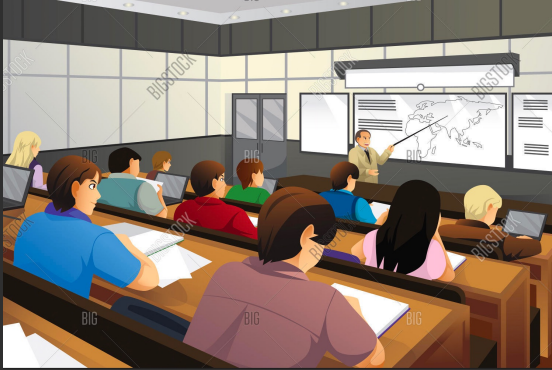
1

2

Fizz

4

Buzz

Fizz

7

8

Fizz

Buzz

11

Fizz

13

14

FizzBuzz

What if we want to stop and take a break?

```
for (int i = 1; i <= N; i++) {

    System.out.println (i);
    if (i == danger_num)
        break;


}
```

N = 5, danger_num = 3

1

2

3

N = 5, danger_num = 7

1

2

3

4

5

FizzBuzz Variation

The code has to stop as soon as the sum of the numbers printed becomes greater than $3*N$.

```
sum =0;

for (———————————)


    if (    %.5  &  %.3)
                → fizzbuzz
    elsef   %. 5)
                → Buzz
    eleif(  %. 3)
                → Fizz
    else {
            i   ⇒  sum += i;          (sum = sum + i);
    }
```

Let's do some
more problems?

What if we want to skip doing something?

- We'd broken up.
- We were on a break.
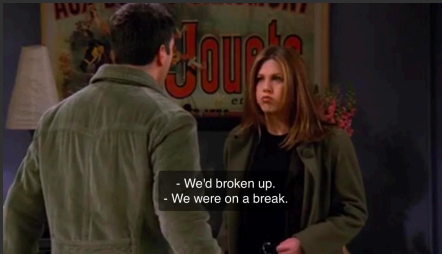
Print nothing
if i is a
multiple of 4.

if (i% 4 == 0)
  continue;

for (- -) {

  if (3 & 5)
    fizzbuzz
  else if (3)
    fizz
  else if (5)
    buzz
  else
    print(i)

}

Qn- Given a positive number, find the number of digits in that number.

Eg. 7 $\Rightarrow$ 1

48 $\Rightarrow$ 2

5461 $\Rightarrow$ 4

20000 $\Rightarrow$ 5

71305

/10 | 1

7130

2
/10 → 713 → 71
3
/10

4 /10 ↑ 7

0 ← 5 ← /10

```
for (int num = N; num > 0; num /= 10)
    digits++;
```

Sum of digits ?

sum = 0

$(n \% 10)$

↳ Unit's place digit of n.

~~Done~~

71305

sum = 5

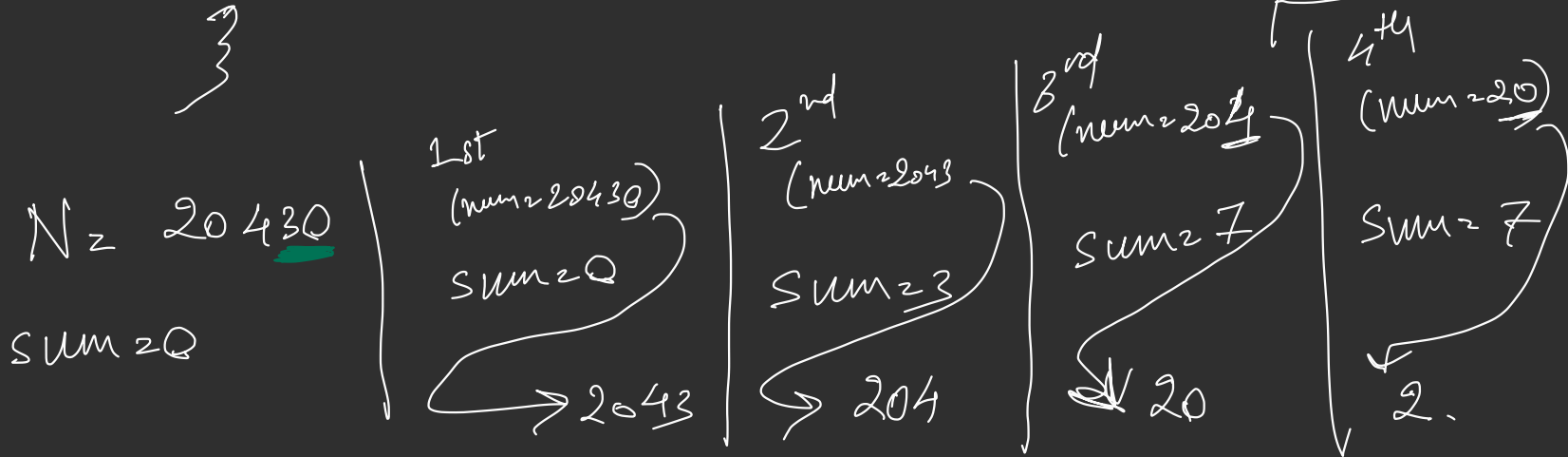/10

7130

sum = 5

/10

713

sum = 8

/10

71

sum = 9

/10

7

sum = 16

/10

0

```
sum = 0;

for ( num = N;   num > 0;   num /= 10) {

    int lastDigit = num % 10;

    sum += lastDigit;

}
```

$N = 20430$

$sum = 0$

1st (num = 20430)	2nd (num = 2043)	3rd (num = 204)	4th (num = 20)	5th (num = 2)
sum = 0	sum = 3	sum = 7	sum = 7	sum = 9
→ 2043	→ 204	→ 20	→ 2.	→ 0

N = 20

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

$L = 5095$ $R = 5101$

$5095 \Rightarrow 19$

$5096 \Rightarrow 20$

$5097 \Rightarrow 21$

$5098 \Rightarrow 22$

$5099 \Rightarrow 23$

$5100 \Rightarrow 6$

$5101 \Rightarrow 7$

```
for ( int N = l;  N <= r;  N++) {

            int sum = 0;
            for (int num = N;  num > 0;  num /= 10) {

                    int lastDigit = num % 10;
                    sum += lastDigit;
            }

            System. out. println ( sum);
}
```

$l = 5095$

$r = 5097$

```
19
20
21
```

$N = 5098$

Given a no. , check if it's a power of 2

$num = 2^K$

$2^{10} \rightarrow 2^9$

$2^2 \rightarrow 2^1 \rightarrow 1$

$2^3 \rightarrow 2^2$

2^8

$2^4 \leftarrow 2^5 \leftarrow 2^6 \leftarrow 2^7 \leftarrow$
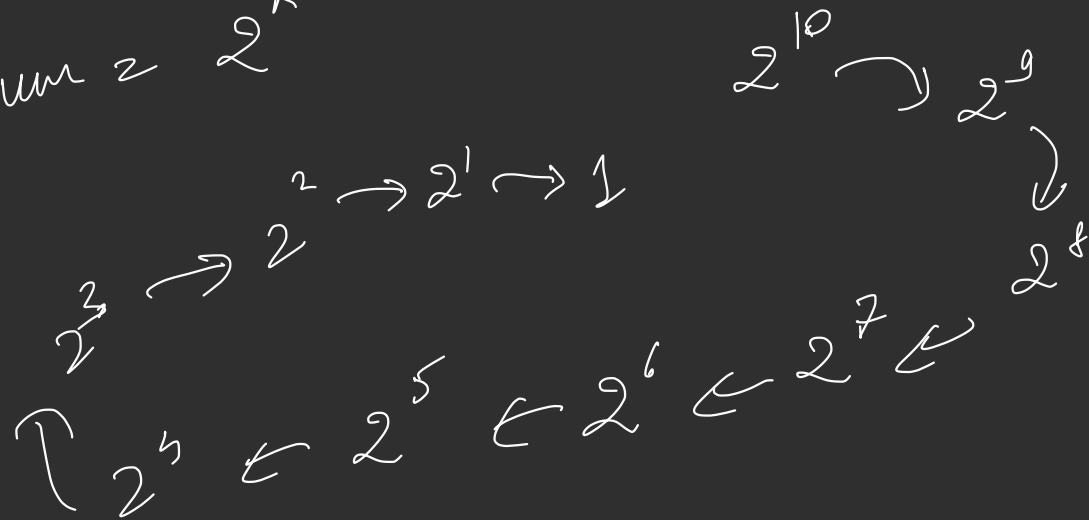
$num = 12 \rightarrow 6 \rightarrow 3$

```
while ( n%2 ==0)
        n/=2;

if (n==1)
        System.out.println ("Yes!"),;

else
        System.out.println ("No!"),;
```