Control Statements - 2

____ { Slack, WA }

Challenge-1 : Given a number N, check if it is odd/even.

I/p. N = 5 N = 6

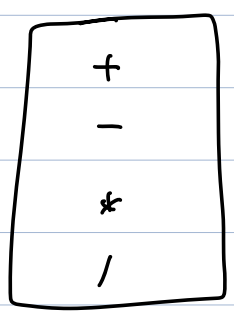
O/p: Odd Even

Divisible by 2 => even => remainder is 0

Not divisible by 2 => odd.

```
  2 <- quotient        3
2 ) 5 (              2 ) 6 (
    4                    6
    1 <- remainder       0
```

Get this => 1 => remainder <- 0



Arithmetic operators.

% => modulo operator

```
print(5 % 2)   # 1
print(6 % 2)   # 0
```

5 = 2*2 + 1

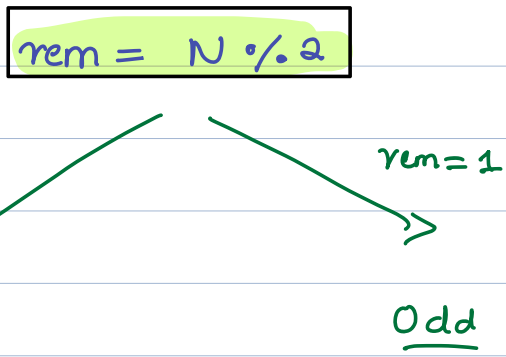
6 = 2*3 + 0

7 = 2*3 + 1

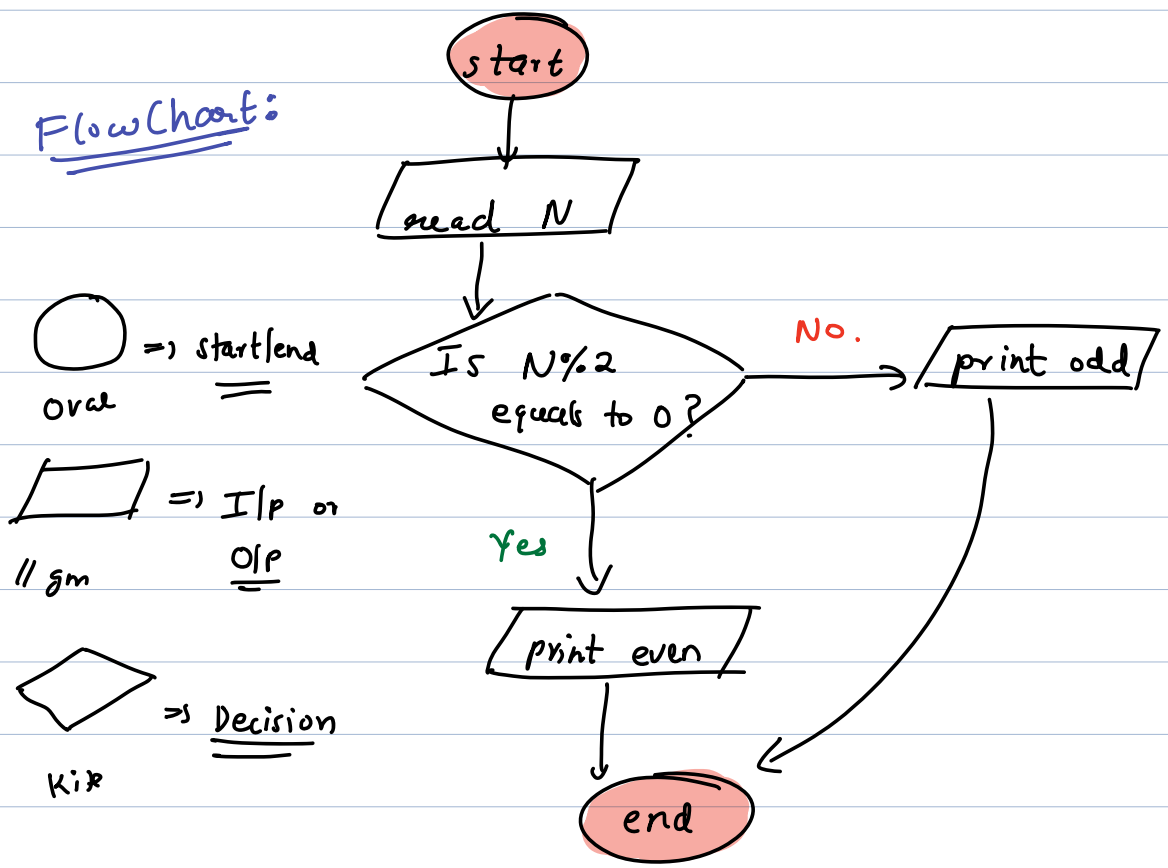
8 = 2*4

9 = 2*4 + 1

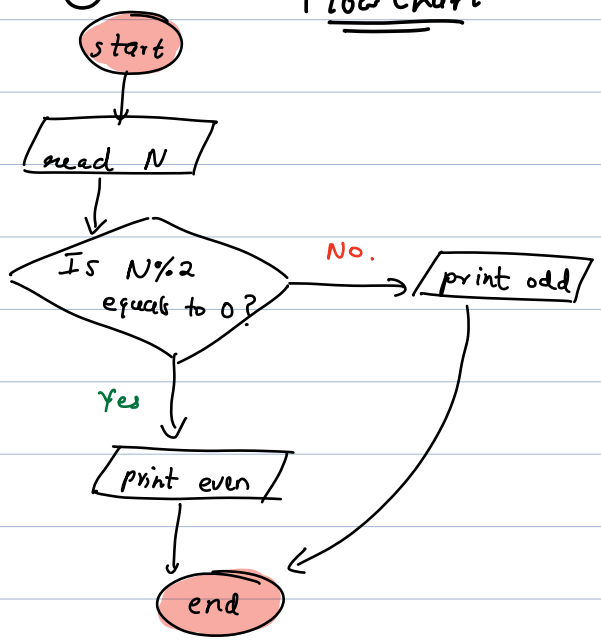
10 = 2*5


rem = N % 2
rem=0
rem=1
Even
Odd

FlowChart:


start
read N
Is N%2 equals to 0?
No.
print odd
Yes
print even
end
=> start/end
oval
=> I/p or O/p
// gm
=> Decision
Kite

① Flow Chart



② Pseudo Code

```
N = input
rem = N %2
if rem equals to 0
        print even
else
        print odd
```

③ Code

```
N = int (input())
rem = N %2
if rem == 0 :
        print ("even")
else :
        print ("odd")
```

Logical Operators

- or
- and
- ✓ not

any one of the condition must be True.

+ − * / % } Arithmetic

== >= <= < > != } Comparison

N = 124

A) Is it divisible by 2? (Yes ✓)

B) Is it divisible by 3? NO

Q1) Is it divisible by 2 or 3 ? YES.

↓ Any of them must be true ↓

Quiz. print(True or False) = True

Q2) Is it divisible by 2 and 3 both? No.

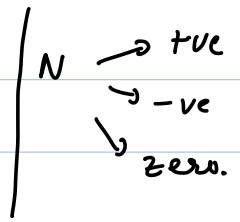
1) A likes B
2) B likes A.

} and

not (True) = False

not (False) = True.

```
if    month == 1 :
          print ('Jan')
elif  month == 2 :
          print ('Feb')
elif  month == 3 :
          print('March')
  .
  .
  .
elif  month == 12 :
          print('Dec')
```



month

1 → Jan

2 → Feb

3 → March

4

.

.

.

12 → Dec.

Challenge 2 : Given N, you need to check if the last digit of N is 4.

I/P : 1234 O/P : True

I/P : 1235 O/P : False

$1234 = 1000 + 200 + 30 + 4$

$123 = 100 + 20 + 3$

100 10 1

Decimal Number System

$9123 = (912) * 10 + 3$

$1234 = (123 * 10) + 4$

$123 = (12 * 10) + 3$

$9123 = (912 * 10) + 3$

```
        123
   10 ) 1234 (
        10
        ---
        23
        20
        ---
        34
        30
        ---
         4
```

```
        912
   10 ) 9123 (
        90
        ---
        12
        10
        ---
        23
        20
        ---
         3
```

rem = N % 10 => last digit

```
if rem == 4 :
    print ('Last digit is 4')
else :
    print ('Last digit is not 4')
```

Challenge 3 : Given N, check if it is even and it is having last digit as 4.

	(a) Last dig. as 4	(b) Even	res (a and b)
1234	✓	✓	True
123	X	X	False
126	X	✓	False.

```
rem = N % 2
lastdig = N % 10
if rem == 0 and lastdig == 4 :
    print('True')
else :
    print ('False')
```

even

last dig. 4.

Challenge 4: Print 'meow' 5 times.

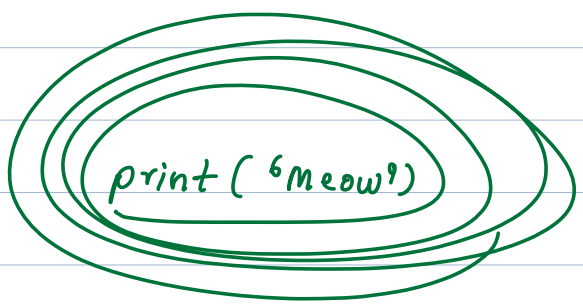
```
print('meow')
print('meow')
print('meow')
print('meow')
print('meow')
```

```
meow
meow
meow
meow
meow
```

DRY => Do not repeat yourself.

KISS => Keep it short & simple.

Loops

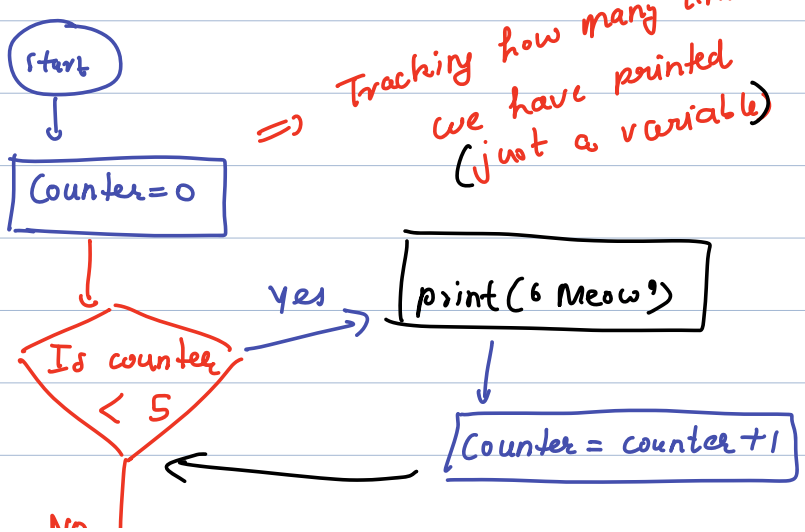


5 times.

=> While loops

rectangle

(perform/processing/variable)

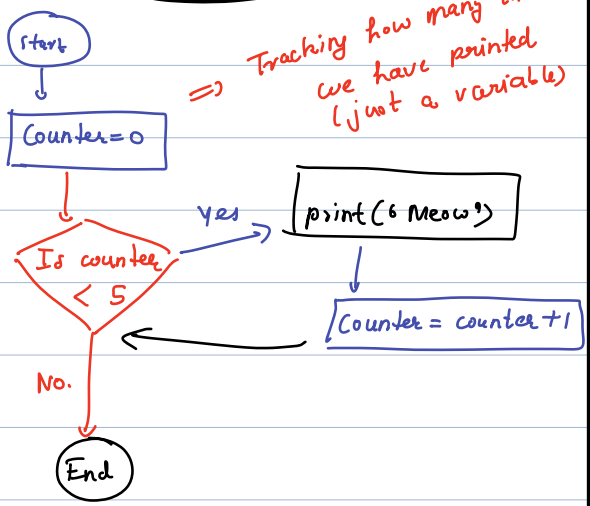


=> Tracking how many times we have printed (just a variable)

No.

End

Flowchart



=> Tracking how many times we have printed (just a variable)

Pseudo-Code:

```
i = 0
while i < 5
    print meow
    i = i+1
```

Python:

```
i=0
while i<5 :
    print('Meow')
    i= i+1
```

Keywords

Army

Start firing.

Start Firing.

reserved commands in Python

```
1- i = 0
2- print('The value of i is:', i)

3- while i < 5:
4-     print('Meow')
5-     i = i + 1
6-     print('The value of i is:', i)
```

```
The value of i is: 0
Meow
The value of i is: 1
Meow
The value of i is: 2
Meow
The value of i is: 3
Meow
The value of i is: 4
Meow
The value of i is: 5
```

i	i<5	i=i+1
0	True	i=1
1	True	i=2
2	True	i=3
3	True	i=4
4	True	i=5
5	False	

Output:

Meow

Meow

Meow

Meow

Meow

Doubts

a = 12 % 7 → 5

It gives only the remainder.

```
   1
7 ) 12 (
    7
   ---
    5
```

a = 12 / 7 → 1.7-

12 / 7 = 1.7

⇒ How to debug errors → syntax / logical errors.

1. Google the error name
2. Try to share it in your WA/Slack group.

Peer learning.

Ask TAs

4. Ask Mentors
5. Ask me on Slack

Comparison operators

>

<

>=

<=

5 > 7 ⇒ False

5 < 7 ⇒ True

Scaler
↳ Exercism

$7 \% 5 = 2$

$7 / 5 = 1.4$

print('Meow', end='')

will provide space by default

print('a', 'b') → a_b

print('a'+'b') → ab

if
    if [ ]
    else

if [c1] ×
elif [c2] ×
elif [c3]: ✓
    [ ]
elif [c4]

c1 F
c2 F
c3 T

-10 % 3 (Modular Arithmetic)

a % b

$a = bq + r$

$-10 = 3(-4) + 2$

$-10 = 3(-3) - 1$