

Starting at 9:05 pm

## Recap

- Prime Number
- Print the digits of a number in reverse order
- Add a given digit to back of number
- Reverse the number and store in a variable
- Pattern Printing Problems

### #Quiz 1

```
count = 0
while(count < 10): # 0 1 2 3 4
    print(10, end = ' ') # 10 10 10 10
    count += 1 #1 2 3 4
```

→ 10 10 10 10 10 10 10 10 10 10

### Quiz 2

```
count = 1
while(count <= 5): #1 2
    if(count == 2): #1==2 f 2==2 t
        break #exit the loop
    print(count, end = ' ') #1
    count += 1 #2
```

→ 1

### Check Whether a Number is Prime or Not

```
# number with only two factors, 1 and itself
# 1 is neither prime nor composite
# Is a a factor of n? → n%a==0
# 17 a prime? yes
# 24 a prime? no → 2,4,6,8,etc
```

```
#step 1: take input from user
n=int(input())
#Step 2: iterate through range of factors [2 – n-1]
factor=2
while(factor<n):
    #Step 3: Is f a factor of m?
    if(n%factor==0):
        #n is divisible by f, which means it is not prime
```

```

        print("not prime")
        break
    factor+=1
else: #while terminates without encountering break
    print("prime")

```

**Quiz 3**

What operation can be used to get the last digit of a number?

```

print(679/10) #67.9
print(679//10) #67
print(679 % 10) #9

```

→ 67.9  
67  
9

## #Quiz 4

```
print(149 % 10)
```

→ 9

Print the digits of number 459

```

# 459 -> 9 5 4
# Extract the last digit and print it
# Remove the last digit from the number

```

'''

```

459%10 -> 9
int(459/10) -> 45
45%10 -> 5
int(45/10) -> 4
4%10 -> 4
int(4/10) -> 0 -> stop the loop
'''
```

```

n=int(input()) #459
while(n>0): #459>0 t 45>0 t 4>0 t 0>0 false
    print(n%10) #print last digit -> 9 5 4
    n=int(n/10) #remove the last digit -> 45 4 0

```

→ 459  
9  
5  
4

```
# Print sum of digits of N
n=int(input()) #123
```

```
sum=0
while(n>0): #123>0 t, 12>0 t, 1>0 t, 0>0 false
    sum=sum+ (n%10) #0+3, 3+2, 6
    n=int(n/10) #12, 1, 0
print(sum) #6
```

→ 123  
6

Add a given digit to the back of a given number N

```
# N=123, d=4, 1234
n=123*10+4
print(n)

#n=48735639856, d=9
print(48735639856*10 + 9)
```

→ 1234  
487356398569

Find the reverse of a given number

```
# n=123 -> 321

# last digit = n%10 -> 123%10 -> 3
# rev=3
# update the original number = n//10 or int(n/10) -> 123/10 = 12

# last digit = n%10 -> 12%10 -> 2
# rev= 3*10 + 2 = 32
# update the original number = n//10 or int(n/10) -> 12/10 = 1

# last digit = n%10 -> 1%10 -> 1
# rev=32*10 + 1
# update the original number = n//10 or int(n/10) -> 1/10 = 0

#0>0 false -> stop
#print(rev)
# -67 -> -76

n=int(input())
copy=n #store a copy of the original number
if n<0:
    n=n*-1 #converting -ve number to +ve number

rev=0
while n>0:
    digit=n%10
    rev = rev*10 + digit
    n=n//10
```

```

if copy<0: #converting +ve number back to negative
    rev=rev*-1

print(rev)

→ -78
-87

```

Reverse for T test cases

...

```

4563897
361
-234
-23
23
-1
...

```

```

t=int(input()) #number of test cases
for i in range(t):
    n=int(input())
    copy=n #store a copy of the original number
    if n<0:
        n=n*-1 #converting -ve number to +ve number

    rev=0
    while n>0: #678 t 67 t 6 t 0 f
        digit=n%10 #8, 7, 6
        rev = rev*10 + digit #0*10 + 8 -> 8*10 + 7 -> 87*10 + 6 -> 876
        n=n//10 #67, 6, 0

    if copy<0: #converting +ve number back to negative
        rev=rev*-1

    print(rev)

```

```

→ 3
123
321
-89
-98
5657
7565

```

Break : 10:22 pm - 10:32 pm

Pattern Printing

...

```

* * * *

```

```
* * * * *
* * * * *
* * * * *
* * * * *
```

...

```
task = * * * * *
repeating 5 times
```

```
for i in range(5): #0 1 2 3 4
    for j in range(5): # 0 1 2 3 4
        print("*", end=" ") # * * * * *
    print()
```

```
→ * * * * *
* * * * *
* * * * *
* * * * *
* * * * *
```

```
for i in range(5):
    print("* " * 5)
```

```
→ * * * * *
* * * * *
* * * * *
* * * * *
* * * * *
```

...

Staircase

```
*
```

* *	r=1, stars=1
* * *	r=2, stars=2
* * * *	r=3, stars=3
* * * * *	r=4, stars=4
* * * * *	r=5, stars=5

...

```
n=int(input())
#loop for the no of rows
for i in range(1,n+1):
    #loop for stars
    for j in range(1,i+1):
        print("*", end=" ")
    print()
```

```
→ 5
*
*
* *
```

```
* * * *
* * * *
```

```
'''
```

Reverse Staircase, total no of rows = 5

	Row	Blanks	Stars
*	1	4	1
*	2	3	2
*  *	3	2	3
*  *  *	4	1	4
*  *  *  *	5	0	5

```
'''
```

```
n=int(input())
for i in range(1,n+1):
    spaces=" "* (n-i) #string duplication
    stars="*" * i # "**"
    print(spaces+stars)
# "      +"* " -> "      *
# "      +"**" -> "      **"
```

```
→ 5
```

```

*
**
***
****
*****
```

## DOUBTS

```
print(-9**2.0) # 2 operators -> unary -, **
# -(9**2.0) -> -(81.0) -> -81.0
print((-9)**2.0)
```

```
→ -81.0
81.0
```

```
n=int(input())
for i in range(1,n+1):
    print("*" * i)
```

```
→ 5
```

```

*
**
***
****
*****
```

```
print(4.56 - True)
```

→ 3.5599999999999996