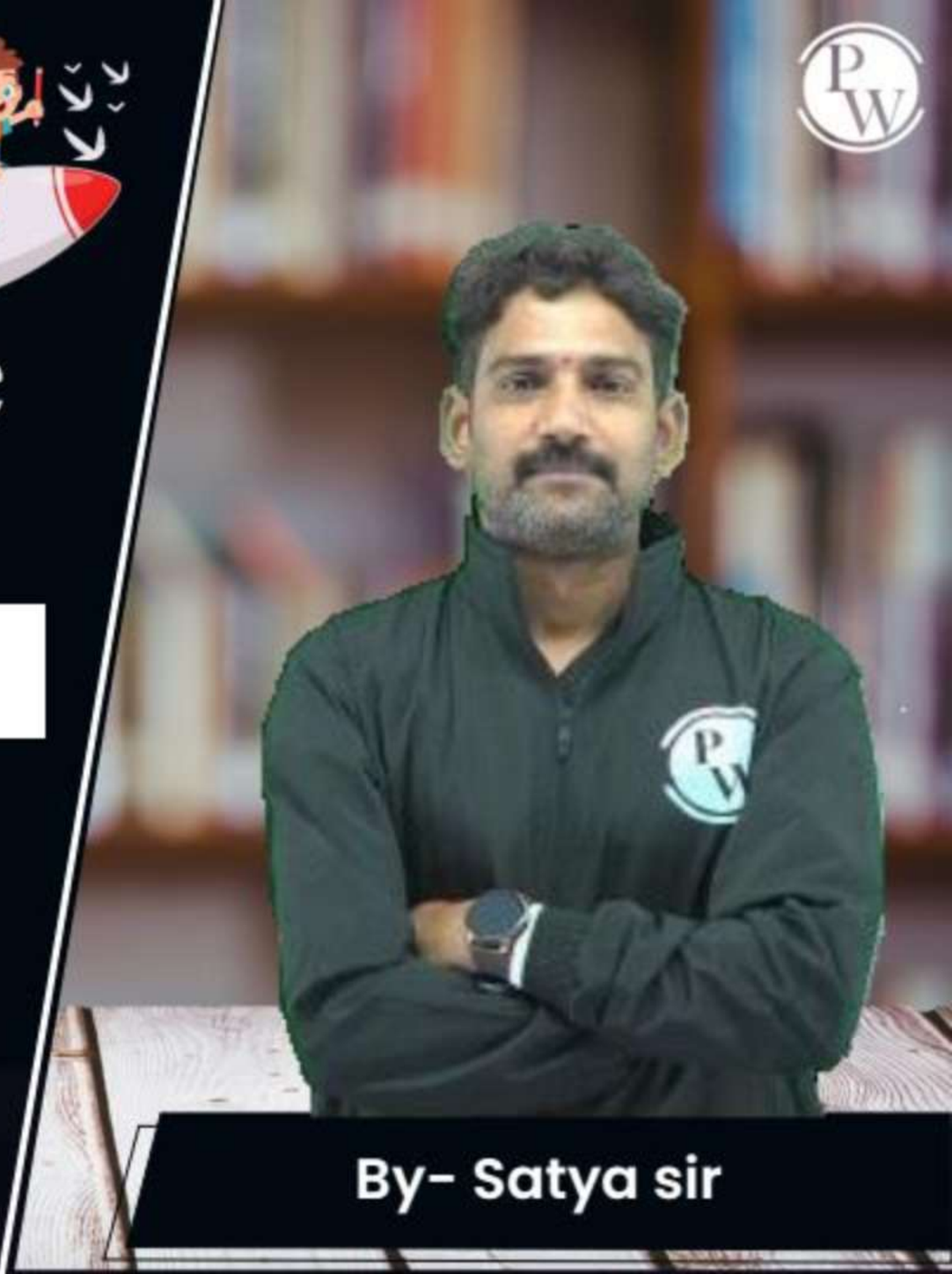
Data Science & Artificial Intelligence

Python For Data Science

Lecture No.- 02



By- Satya sir

Topics to be Covered

Control Statements

- Conditional Control Statements
  - if
  - if-elif-else
  - if-else
  - Nested if
  - match-Case

SUPER 1500+ - CLASS – 1 - Homework Question - 1

#Q. The output printed by below code is _____

```
i=0x21   =(33)10
j=0o36   =(30)10
k=i<<2   = 33 * 2^2 = 132
x=j>>3   = 30//2^3 = 3
y=i+x    = 33+3=36
z=k-j    = 132-30=102
print(z-y)
```

102-36

= 66

$(21)_H$ =

1	0
2	1

$1*16^0 + 2*16^1$

$= 1+32 = 33$

$(36)_8$ =

1	0
3	6

$= 6\times8^0 + 3\times8^1$

$= 6+24$

$= 30$

SUPER 1500+ - CLASS – 1 - Homework Question - 2

#Q. The output printed by below code is _____

```
a=ord('a')    = 97
b=ord('E')    = 69
c=a^b         = 36
d=b|a         = 101
e=c&d
print(e)      #36
```

97 ^ 69

97 = 0110 0001
69 = 0100 0101
c = 0010 0100
d = 0110 0101
c & d = 0010 0100
= 36

69 | 97

69 = 0100 0101
97 = 0110 0001
d = 0110 0101
= 101

SUPER 1500+ - CLASS – 1 - Homework Question - 3

#Q. The output printed by below code is _____

```
x=ord('2') + (21>>2) * (41&23) - (11 ^ 20) // 2 ** 3
print(x)
```

55

50 + 5 = 55

55 - 3 = 52

50 | 5 | 1 | 5 | 31 | 8 | 3

2 ** 3 = 2^3 = 8

ord('2') = 50

21 >> 2 = 21 // 2^2 = 21 // 4 = 5

41 & 23 ⇒ 41 = 0010 1001

23 = 0001 0111

0000 0001 = 1

11 ^ 20

⇒ 11 = 0000 1011

20 = 0001 0100

0001 1111 = 31

⇒ 5 * 1 = 5

⇒ 31 // 8 = 3

'0' = 48

'1' = 49

'2' = 50

SUPER 1500+ - CLASS – 1 - Homework Question - 4

#Q. The output printed by below code is _____

```
x = float(1)
y = int(2.8)
z = complex(3)
i=x+y+z
print(i,type(i))
```

x = float(1) = 1.0

y = int(2.8) = 2

z = complex(3) = 3+0j

i=x+y+z 1.0+2+(3+0j) = 6+0j

A) 6, <class, int>

B) 6.0, <class, float>

C) 6+0j, <class, complex>

D) Compiler Error

#Q. The Output of below Code, if executed on a Python Interpreter is _____

```
if "GATE":
    print("EXAM")
else:
    print("2025")
```

A) GATE

B) GATE EXAM

C) 2025

D) EXAM

#Q. What will be printed by below Python Code Segment?

```
if print("GATE", end=' '):
    print("EXAM")
else:
    print("2025")
```

A) GATE EXAM

B) GATE 2025

C) None EXAM

D) Syntax Error

#Q. The Output printed will be ____

```
a=0
b=-1
c=1
if a and b:
    print(a+1)
elif b and c:
    print(b+1)
elif c or a:
    print(c+1)
else:
    print(a,b,c)
```

A) 1
B) 0
C) 2
D) 0 -1 1

#Q. What is printed by below code segment?

```
i=12
j=16
k=14
if (not i) or j and (not k):
    print('Hi')
elif (not j) and k or (not i):
    print('Hello')
elif i and j and k:
    print('Hai')
else:
    print('Bye')
```

A) Hi
B) Hello
C) Hai
D) Bye

#Q. The Output will be _____

```
a='none'
b='None'
c='NONE'
if a<=b:
  print(b)
elif b<c:
  print(c)
else:
  print(a)
```

[Unicode values for Each character]

'a' = 97
'A' = 65
'0' = 48

n > N

Upper Case < Lower Case

A) none
B) None
C) NONE
D) Error

#Q. The 'a' value printed is _____

```
if not not None: # False
    a=1
elif None:  #False
    a=2
elif not None: #True
    a=3
else:
    a=4
print(a)
```

A) 4
B) 3
C) 2
D) 1

#Q. The Output is _____

```
a='ABCDEF'[4]
b='abcdef'[2]
c=chr(ord(a)+2) + chr(ord(b)-2)
print(ord(c[1])-ord(c[0]))
```

0 1 2 3 4 5

a = 'E'

0 1 2 3 4 5

b = 'c'

concat

c = 'Gα'

print(ord(c[1])-ord(c[0]))

97 − 71 = 26

S = "ABCDEF"

α = S[4]

ord(α) = 69 + 2 = 71

chr(71) = 'G'

ord(b) = 99 − 2 = 97

chr(97) = 'α'

#Q. The Output of below code segment is _____

```
a=2
b=3
c=4
if a<b>=c:
   print(a+1,b,c-2)
elif c>b!=a:
   print(a+b,b+c,c+a)
elif b>a<=c:
   print(a,b,c)
else:
   print(a+b,b+c,c+a)
```

(2<3) and (3>=4) # False
True False

(4>3) and (3!=2) # True
True True

A) 3 1 4
B) 3 3 2
C) 2 3 4
D) 5 7 6

#Q. The Output of below Code will be_____

```
i=1
j=2
k=3
count=0
match i:
  case 1:
    match k:
      case 2:
        match j:
          case 3:
            print(i)
          case 1:
            pass
      case 1:
        print(j)
    print("ERROR")
  case _:
    print("NONE")
```

A) 1

B) 2

C) ERROR

D) NONE

#Q. The Output printed is _____

```
i=1
j=2
k=3
count=0
match i:
  case 1:
    match k:
      case 2:
        match j:
          case 3:
            print(i)
          case 1:
            pass
      case 1:
        print(j)
        print("ERROR")
  case _:
    print("NONE")
```

A) 1

B) 2 ERROR

C) NONE

D) No Output

#Q. The Output printed is _____

```
i=1
j=2
k=3
if i&j:
    print("Hi")
elif j|k:
    print("Hai")
print('Hey')  # misplaced
else:
    print('Bye')
```

A) Hi

B) Hai Hey

C) Bye

D) Syntax Error

SUPER 1500+ - CLASS – 2 - Homework Question - 1

#Q. The final count value is _____

```
i=1
count=2
while i<=5:
    while count<5:
        count=count+i
    i=i+2
```

SUPER 1500+ - CLASS – 2 - Homework Question - 2

#Q. The final value of count will be _____

```
i=1
count=0
while i<4:
   match i:
      case 1:
         count+=2
         count<<=i
      case 3:
         count-=i
      case _:
         count>>=i
   i=i+1
print(count)
```

SUPER 1500+ - CLASS – 2 - Homework Question - 3

#Q. How Many Times print statement executes in the below Code?

```
i=1
j=5
while i is not j:
    i=i+1
    while j is not i:
        j=j-1
        print(" ")
```

SUPER 1500+ - CLASS – 2 - Homework Question - 4

#Q. The final value of count will be _____

```
i=1
j=5
count=1
while i<j:
    count=count+j
    while j<10:
        count=count-i
        j+=2
    i+=3
print(count)
```

SUPER 1500+ - CLASS – 2 - Homework Question - 5

#Q. The output printed by below code is _____

```
a=1
count=1
while a<5:
   while count<10:
      count<<=a
   a=a+1
print(count)
```

2 mins Summary

Conditional Control Statements

THANK - YOU