CSX3001/ITX3001
FUNDAMENTALS OF COMPUTER PROGRAMMING

CLASS 06 CODE TRACING & FLOWCHART

PYTHON

Exercises

From the given code, what is/are the output(s):

```
1   # Assume that n is an input from a user.
2   n = 112
3   if n % 2 == 1:
4       if n//100%2 == 1:
5           print('YO')
6       else:
7           print('YE')
8   else:
9       if n%100//10%2 == 0:
10          print('HEY')
11      else:
            print('HA')
```

```
1   A = True
2   B = False
3   C = False
4   D = 1 < 5
5   print(A and B or not (A or D) and C)
6   print((A and not A and not B) or not (not C or D))
7   print(not (not (not D)))
```

```
1   w = 8
2
3
4   if w < 10:
5       print('Yes1')
6   elif w < 20:
7       print('Yes2')
8   elif w < 30:
9       print('Yes3')
10
11
12  if w < 10:
13      print('Yes1')
14  if w < 20:
15      print('Yes2')
16  elif w < 30:
17      print('Yes3')
```

```
1   numbers = [6, 5, 3]
2
3   mySum = 0
4
5   for val in numbers:
6       print(mySum, val)
7       mySum = mySum + val
8       print(mySum, val)
9       print('--------------------')
10  print(f"The sum is {mySum}")
```

```
1  i = 0
2  while True:
3      i += 1
4      #print(i, end = ' ')
5      if i == 2 or i == 5 or i == 7:
6          continue
7      print(i, end = ' ')
8      if i == 15:
9          break
```

```
1  n = int(input('Enter n: '))
2  for i in range(0, n):
3      for j in range(0, n):
4          if j >= (n-1) - i:
5              print('*', end = '')
6          else:
7              print(' ', end = '')
8      print()
```

```
   #What is a condition (line#3) that prints 13,26,39?

1  numList = [1,13,26,2,6,7,39,10,9]
2  for i in numList:
3      if _______ == 0:
4          print(i, end = ' ')
```

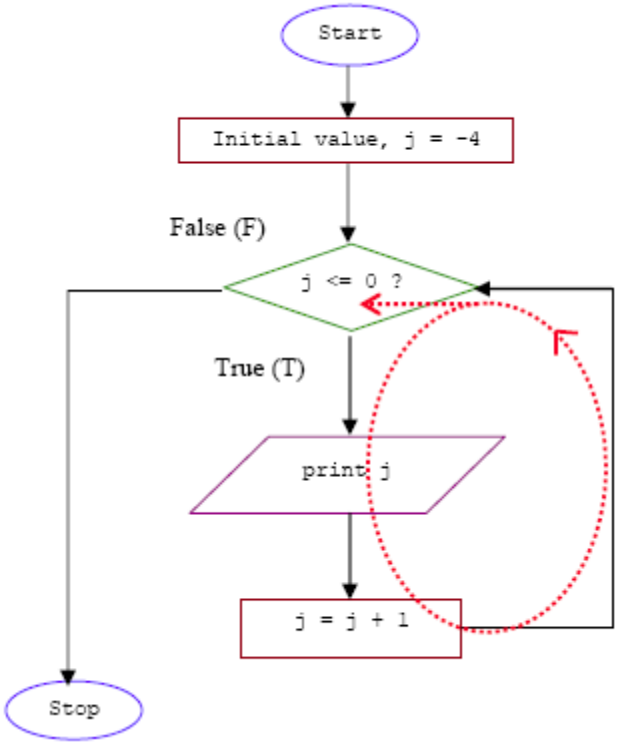
```
1  strList = ['10','4','6','3','7']
2  total = ''
3  j = 0
4  for i in strList:
5      if j % 2 == 0:
6          total += i
7      j += 1
8  print(total)
```

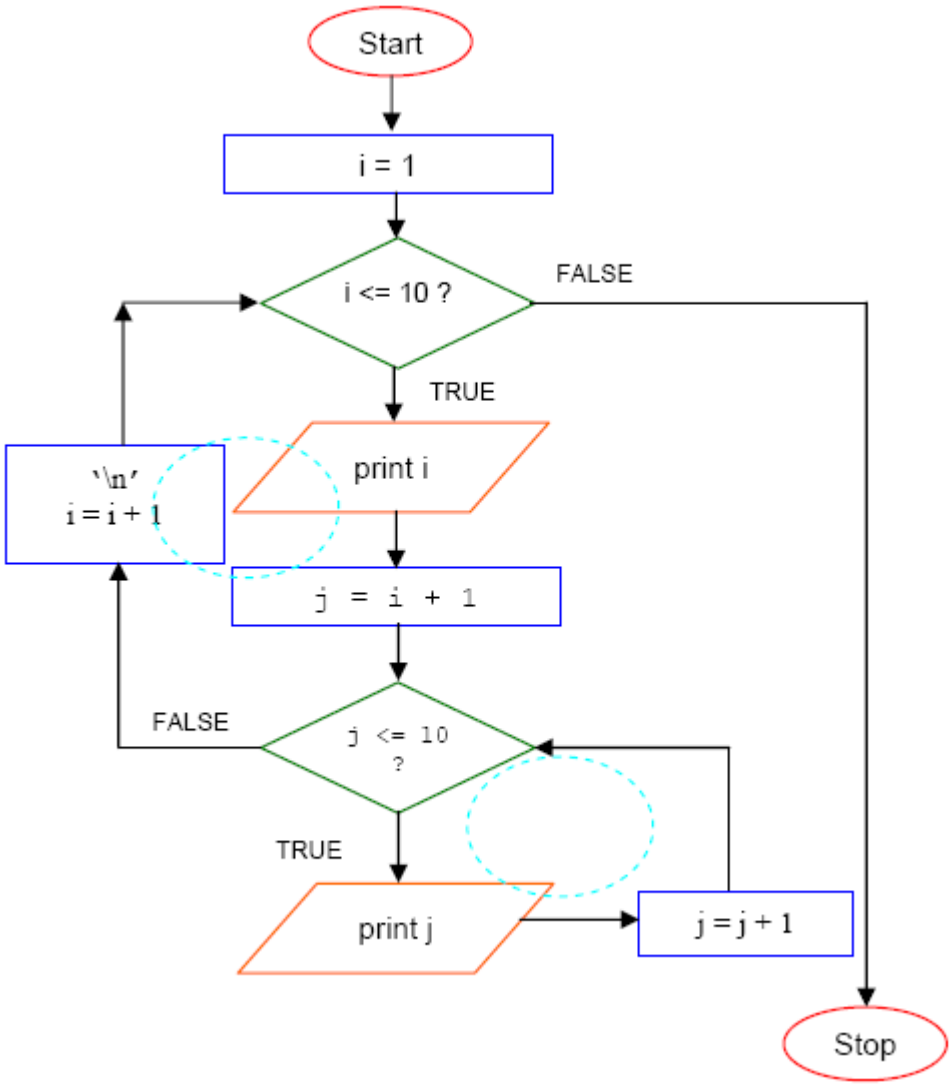
```
1  s = 3
2  i = 1
3  while i < 10:
4      if i > 10:
5          print(i, end = ' ')
6          s += 1
7      else:
8          s += 2
9      i+= s
```

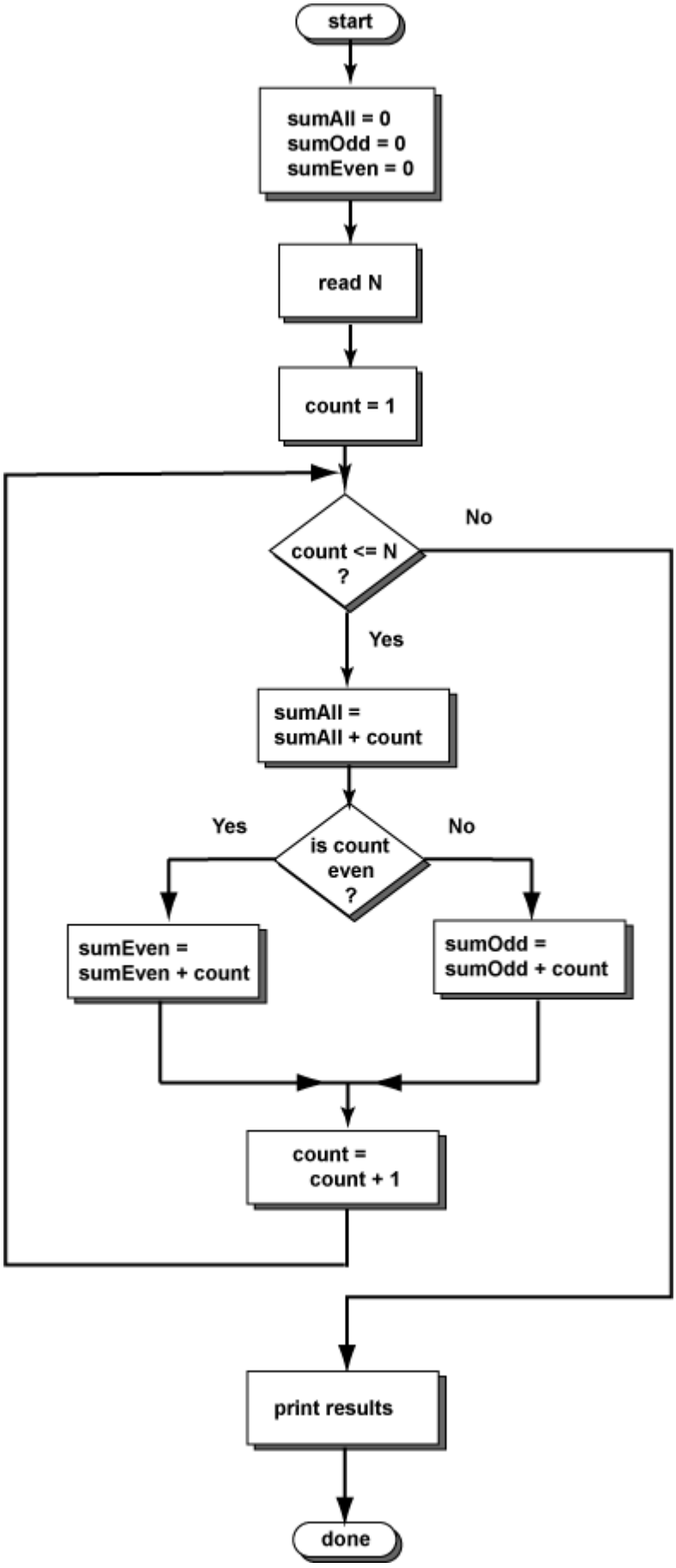
```
1  x,y = 5,5
2  for i in range(1,x):
3      for j in range(1,y):
4          if j + i - 1 > y - 1:
5              print(j+i-y, end = ' ')
6          else:
7              print(j+i-1, end = ' ')
   #What are the outputs if i and j are 1--4, 2--1 and 2--3?
```

```
1  i = 0
2  while i < 3:
3      j = 5
4      while j > 1:
5          x = i + j - 2
6          if x % 2 == 0:
7              j -= 1
8              print(i,j,x, end = '----')
9          else:
10             j -= 2
11             print(i,j,x, end = '----')
           i += 1
           print('inner i', i)
       i += 1
       print('outer i', i)
```

Flowchart Exercises:




Start
i = 1
i <= 10 ?
FALSE
TRUE
print i
'\n'
i = i + 1
j = i + 1
j <= 10 ?
FALSE
TRUE
print j
j = j + 1
Stop


start
sumAll = 0
sumOdd = 0
sumEven = 0
read N
count = 1
count <= N ?
No
Yes
sumAll = sumAll + count
Yes
is count even ?
No
sumEven = sumEven + count
sumOdd = sumOdd + count
count = count + 1
print results
done