

L6: More on Loops Practice Questions

For Loops and Range Method :

1-Tut : Predict the Output

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What will be the output of the following code?

```
for i in range(1,5,2):  
    print(i,end=' ')
```

Options

- 1 3 5
- 1 3
- 1 2 3 4 5
- 1 5

Correct Answer : B

2-Tut : Predict the Output

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What will be the output of the following code ?

```
for i in range(5):  
    print(i,end= ' ')
```

Options

- 0 1 2 3 4 5
- 1 2 3 4 5
- 0 1 2 3 4
- 1 3 5

Correct Answer: C

Note : range(start, stop, stride) : default value : start = 0, stride = 1 : if only one entry for range() function then it is for 'stop' otherwise default order will follow for more than 1 entry. Also start is included and stop is excluded.

3-Tut : Predict the Output

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What will be the output of the following code?

```
i=1  
while i<5:  
    if i==3:  
        break  
    print(i,end=" ")
```

```
i = i + 1
```

Options

1 2 3 4

1 2

1 2 3

Infinite Loop

Correct Answer : B

4-Tut : Predict the Output

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What will be the output of the following code?

```
i=1
while i<3:
    j=1
    while j<5:
        if j==3:
            break
        print(j,end=" ")
        j = j + 1
    i = i + 1
```

Options

1 2 1 2

1 2

1 2 4 1 2 4

Infinite Loop

Correct Answer : A

Note: else keyword with loops in python.(other languages like c++ / java don't support it.)

5-Tut : Predict the Output

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What will be the output of the following code?

```
i=1
while i<5:
    if i == 6:
        break
    print(i,end=" ")
    i = i + 1
else:
    print("Else is also printed")
```

Options

1 2 3 4 5 Else is also printed

1 2 3 4 Else is also printed

1 2 3 4 5

1 2 3 4

Correct Answer : B

6-Tut : Predict the Output

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What will be the output of the following code?

```
i=1
while i<5:
    if i == 3:
        break
    print(i,end=" ")
    i = i + 1
else:
    print("Else is also printed")
```

Options

1 2 3 4 5 Else is also printed

1 2 Else is also printed

1 2

1 2 3 4

Correct Answer : C

Note : continue keyword : take care of stride when you use it with while loop otherwise it will be trapped in infinite loop

7-Tut : Predict the Output

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What will be the output of the following code?

```
i=1
while i<5:
    if i==3:
        continue
    print(i,end=" ")
    i = i + 1
```

Options

1 2 3 4

1 2

1 2 Infinite Loop

1 2 4

Correct Answer : C

8-Tut : Predict the Output

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What will be the output of the following code?

```
i=1
while i<3:
    j=0
    while j<5:
        j = j +1
        if j==3:
            continue
        print(j,end=" ")
    i = i +1
```

Options

1 2 1 2

1 2 3 4 1 2 3 4

1 2 4 5 1 2 4 5

1 2 4 1 2 4

Correct Answer : C

Note : Pass Keyword : just a dummy statement / way to write just like in c++/java blank if block, for loop.

Ex : for i in range(1,4)

Pass

print("end") o/p will be : end.

9-Ass : Binary Pattern

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Print the following pattern for the given number of rows.

Pattern for N = 4

1111

000

11

0

Input format : N (Total no. of rows)

Output format : Pattern in N lines

Sample Input : 5

Sample Output :

11111

0000

111

00

1

1. `## Read input as specified in the question.`
2. `## Print output as specified in the question.`
3. `N = int(input())`
4. `row = 1`
5. `while(row <= N):`
6. `col = N - row + 1`
7. `p = row % 2`
8. `while(col >= 1):`
9. `print(p,end="")`
10. `col = col - 1`
11. `print()`
12. `row = row + 1`

10-Ass : Print Number Pyramid

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Print the following pattern for a given n.

For eg. N = 6

123456

23456

3456

456

56

6

56

456

3456

23456

123456

Sample Input 1 : 4

Sample Output 1 :

1234

234

34

4

34

234

1234

```
1. ## Read input as specified in the question.
2. ## Print output as specified in the question.
3. N = int(input())
4. row = 1
5. while(row <= N):
6.     space = row - 1
7.     while(space >= 1):
8.         print(" ",end = "")
9.         space = space - 1
10.
11.    p = row
12.    while(p <= N):
13.        print(p,end="")
14.        p=p+1
15.    print()
16.    row = row + 1
17. row = N - 1
18. while(row >= 1):
19.     space = row - 1
20.     while(space >= 1):
21.         print(" ",end = "")
22.         space = space - 1
23.
24.    p = row
25.    while(p <= N):
26.        print(p,end="")
27.        p=p+1
28.    print()
29.    row = row - 1
```

11-Ass : Diamond of Stars

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Print the following pattern for the given number of rows.

Note: N is always odd.

Pattern for N = 5

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

The dots represent spaces.

Input format : N (Total no. of rows and can only be odd)

Output format : Pattern in N lines

Constraints : $1 \leq N \leq 49$

Sample Input 1: 5

Sample Output 1:

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

Sample Input 2: 3

Sample Output 2:

```
*  
***  
*
```

1. `##` Read input as specified in the question.
2. `##` Print output as specified in the question.
3. `N = int(input())`
4. `fh = (N+1)//2`
5. `sh = N//2`
6. `row = 1`
7. `while(row <= fh):`
8. `space = fh - row`
9. `while(space >= 1):`
10. `print(" ",end="")`
11. `space = space - 1`

```

12. star = 2*row - 1
13. while(star >= 1):
14.     print("*",end = "")
15.     star=star-1
16.     print()
17.     row = row + 1
18. row = sh
19. while(row >= 1):
20.     space = fh - row
21.     while(space >= 1):
22.         print(" ",end="")
23.         space = space - 1
24.     star = 2*row - 1
25.     while(star >= 1):
26.         print("*",end = "")
27.         star=star-1
28.         print()
29.     row = row - 1

```

12-Ass : Rectangular numbers

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Print the following pattern for the given number of rows.

Pattern for N = 4

44444444

4333334

4322234

4321234

4322234

4333334

44444444

Input format : N (Total no. of rows)

Output format : Pattern in N lines

Sample Input : 3

Sample Output :

33333

32223

32123

32223

33333

```

1. n = int(input())

```



```

2. for i in range(1,n+1):
3.     temp = n
4.     for j in range(1,i):
5.         print(temp,end="")
6.         temp = temp - 1
7.     for j in range(1,(2*n) - (2*i) + 2):
8.         print(n-i+1,end="")
9.     for j in range(1,i):
10.        temp = temp+1
11.        print(temp,end="")
12.    print()
13. for i in range(n-1,0,-1):
14.     temp = n
15.     for j in range(1,i):
16.         print(temp,end="")
17.         temp = temp - 1
18.     for j in range(1,(2*n) - (2*i) + 2):
19.         print(n-i+1,end="")
20.     for j in range(1,i):
21.         temp = temp+1
22.         print(temp,end="")
23.    print()

```

13-Ass: Print the pattern

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Print the following pattern for the given number of rows.

Pattern for N = 5

```

1  2  3  4  5
11 12 13 14 15
21 22 23 24 25
16 17 18 19 20
6  7  8  9  10

```

Input format : N (Total no. of rows)

Output format : Pattern in N lines

Sample Input : 4

Sample Output :

```

1 2 3 4
9 10 11 12
13 14 15 16
5 6 7 8

```

```
1. n = int(input())
2. startValue = 1
3. for i in range(1,n+1):
4.     for j in range(startValue,startValue + n):
5.         print(j,end=" ")
6.     print()
7.     if(i==(n+1)//2):
8.         if((n%2)!=0):
9.             startValue = n*(n-2)+1
10.        else:
11.            startValue = n*(n-1) + 1
12.    elif((i>(n+1)//2)):
13.        startValue = startValue - 2*n
14.    else:
15.        startValue = startValue + 2*n
```