Loops Problems

Doubt Session (optional)
↳ Sunday

Agenda

- Pass
- Print sep
- Factors of a number
- Check Prime
- Break
- Continue
- Random Game

Loop Control Statements

Factors & Prime Numbers

↓

Divisors

Numbers that completely divide N

10 → 1, 2, 5, 10

15 → 1, 3, 5, 15

17 → 1, 17

60 → 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60

44 → 1, 2, 4, 11, 22, 44

Quiz - Factors of 48

48 → 1, 2, 3, 4, 6, 8, 12, 16, 24, 48

Option A

7 → 1, 7

11 → 1, 11

→ 1 is a factor of every number
→ Every number is divisible by itself

↓

2 factors atleast → 1, N

Numbers with exactly 2 factors → Prime

2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37 ....

Numbers that have >2 factors → Composite

10, 6, 9, 15 ...

1

Factors of 1 = 1

Neither Prime Nor Composite

Print all factors

N → Smallest factor = 1

→ Largest factor = N

Factors are going to be in the range → [1, N]

↓

Python version → range(1, N+1)

Iterate over this range & check if your number (i) is a factor of N

```
for i in range(1, N+1):
    # Check if i is a factor of N
    if N % i == 0:
        print(i)
```

Break till 10:05 PM

Which of the following is `NOT` a valid output for this code snippet ?

```
import random

while True:
    r = random.randint(5, 15)

    if r % 3 == 0:
        continue

    print(r, end=' ')

    if r == 10 or r == 15:
        break
```

Random nums → 5 to 15

→ Skip 6, 9, 12, 15

→ print

A. 13 7 7 13 8 10
B. 5 14 7 7 13 14 10
C. 7 11 7 5 15
D. 14 5 8 11 7 14 13 10

Option C is not possible

Doubts

Thank You

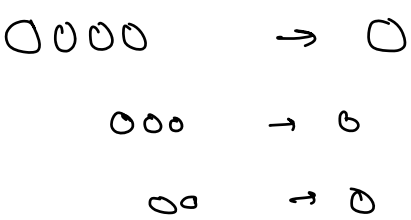
Infinite Loop

```
while 10 > 5:
    print("Hello")
```

10 > 5 → True → Infinite times

```
while True:
    print("Hello")
```

True → Infinite times



0 1 5

r = random.randint (0,

x = 5

x = 0 5 = 5

↓

0 0 5

1, 3, 5

1, 5

Good Night

Thank You

Friday