24. CONTINUE- LOOP CONTROL STATEMENT

EXAMPLE 1

```
for(int \ i = 1; i \le n; i + +) \{
if(i = 5) \{
continue;
\}
print(i);
```

Solution:

```
if i = 5, the loop will skip that part and loop will run (continue)upto n. That is 1, 2, 3, 4, 6, 7, \dots, n and i will be printed (1+1+1+\cdots n-1 \ times)=n-1 \ and the time complexity we get is O(n).
```

EXAMPLE 2

```
for(int \ i = 1; i \le n; i + +) \{
for(int \ j = 1; j \le n; j + +) \{
if(j = 5) \{
continue;
\}
print("Hello");
\}
```

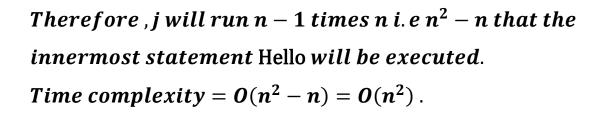
Solution:

j will run n-1 times n i. e n^2-n that the innermost statement Hello will be executed. Time complexity = $\mathbf{O}(n^2-n)=\mathbf{O}(n^2)$.

EXAMPLE 3

```
for(int \ i = 1; i \le n; i + +){
    for(int j = 1; j \le n; j + +){
          if\left(j=\frac{i}{2}\right){
               continue;
       print("Hello");
Solution:
  when i = 1, j = \frac{1}{2} = 0.5 or 0 doesn't exist, hence j runs n times.
  when i=2, j=\frac{2}{2}
             = j skips 1 and runs upto n times hence n-1 times.
  when i=3, j=\frac{3}{2}
             = j skips 1 and runs upto n times hence n-1 times.
```

when i = n, $j = \frac{n}{2} = j$ skips $\frac{n}{2}$ and runs upto n - 1 times.



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