



C++ Assignments | Time and space complexity Analysis - 1 | Week 8

1. Calculate the time complexity for the following code snippet.

```
int c = 0;
for(int i = n; i > 0; i /= 2) {
    c++;
}
```

2. Calculate the time complexity for the following code snippet.

```
int c = 0;
for(int i = n; i > 1; i /= i) {
    c++;
}
```

3. Calculate the time complexity for the following code snippet where k is some constant ($k \ll n$).

```
int c = 0;
for(int i = 0; i < n; i += k) {
    c++;
}
```

4. Calculate the time complexity for the following code snippet.

```
int c = 0;
for(int i = 1; i < n; i *= 2) {
    c++;
}
```

5. Calculate the time complexity for the following code snippet.

```
int c = 0;
for(int i = 0; i < n; i++) {
    c += i;
}
```

6. Calculate the time complexity for the following code snippet.

```
int c = 0;
for(int i = 0; i < n; i++) {
    for(int j = 0; j < i; j++){
        c++;
    }
}
```

Note:- Please try to invest time doing the assignments which are necessary to build a strong foundation. Do not directly Copy Paste using Google or ChatGPT. Please use your brain 😊.
