

~~25/10/20~~

for ($l^0 = 2$; $i \leq n$; $i = l^{0^2}$)
 cout << "Hi";

Calculate the time complexity.

Solⁿ: take $n = 100$

K = iterations	1	2	3	4	...	K^{th}	$(K+1)^{th}$
$l^0 =$	2	4	16	256			
	$2 \leq 100$	$4 \leq 100$	$16 \leq 100$	$256 \leq 100$ false			
	Hi	Hi	Hi				
$l^i =$	2	2^2	2^4	2^8		2^{K-1}	2^K
	$= 2^0$	2^1	2^2	2^3	...	2^2	2^2

\therefore value of $i > n$

$$2^K > n$$

$$2^K \log_2 2 > \log_2 n$$

$$2^K > \log_2 n$$

$$K > \log_2 \log_2 n$$

$\therefore O(\log_2 \log_2 n)$ Time complexity.