Part B

Steps

1. **Run the code directly and see the output**

The required result is obtained after directly running the file, it is evident from the results that parallelization helps with running the program at alower time, in fact it reduces the time by an huge factor on running the code using parallelization.

```
--------------------------------------------------
Without Parallelization
--------------------------------------------------
Time taken to construct the Tree : 356416ns
Height of the tree is : 4
Time taken to search for an element in a constructed tree is : 3750ns

Time taken to construct the Tree : 472791ns
Height of the tree is : 10
Time taken to search for an element in a constructed tree is : 72417ns

Time taken to construct the Tree : 38927666ns
Height of the tree is : 20
Time taken to search for an element in a constructed tree is : 7867833ns
```

We can see the output for without parallelization in the above screenshot.

```
--------------------------------------------------
With Parallelization using 2 threads
--------------------------------------------------
Time taken to construct the Tree : 8208ns
Height of the tree is : 4
Time taken to search for an element in a constructed tree is : 625ns

Time taken to construct the Tree : 104833ns
Height of the tree is : 10
Time taken to search for an element in a constructed tree is : 3292ns

Time taken to construct the Tree : 27974584ns
Height of the tree is : 20
Time taken to search for an element in a constructed tree is : 2135042ns
```

We can see the output for with parallelization using 2 threads in the above screenshot.

```
--------------------------------------------------
With Parallelization using 4 threads
--------------------------------------------------
Time taken to construct the Tree : 36916ns
Height of the tree is : 4
Time taken to search for an element in a constructed tree is : 333ns

Time taken to construct the Tree : 17750ns
Height of the tree is : 10
Time taken to search for an element in a constructed tree is : 2875ns

Time taken to construct the Tree : 26972167ns
Height of the tree is : 20
Time taken to search for an element in a constructed tree is : 2106875ns
```

We can see the output for with parallelization using 4 threads in the above screenshot.