

Trees

1. Given this code for a tree, draw out what it would look like. Additionally, is this a binary search tree?

```
t = { "value" : 20,  
      "left" : { "value" : 10,  
                 "left" : { "value" : 8,  
                            "left" : None,  
                            "right" : None },  
                 "right" : { "value" : 15,  
                            "left" : None,  
                            "right" : None } },  
      "right" : { "value" : 21,  
                 "left" : None,  
                 "right" : { "value" : 25,  
                            "left" : None,  
                            "right" : None } } }
```

2. What is the runtime of searching through binary search trees (balanced and unbalanced)?
3. Print the values of a binary search tree in nondecreasing order, in $O(n)$ time. For instance, if you had a binary search tree of the values: 1, 2, 5, 9, you would want to print "1\n2\n5\n9\n".