- 1. The data structure needs a new field to store the current minimum value of the Binary Search Tree. In the program, we'll call this variable 'min'.
- 2. The following changes are needed to return the minimum value in the Binary Search Tree:

```
1 Algorithm: BSTDict.min()
2 node = root
3 while node has a left child do
4 node = node.left
5 end
6 \quad min = node
7 return min
1 Algorithm: BSTDict.insert(new)
2 node = root
3 Boolean bool = false;
4 while node isn't NIL do
     if node.value ≤ new then
6
        if node.left = NIL then
7
          Add new as left child of node
8
          node = node.left
9
       end
10
       node = node.left
11
     else
12
    bool = true;
13
      if node.right = NIL then
14
          Add new as right child of node
15
          node = node.right
16
       end
17
       node = node.right
18
   end
19
    if bool is false then
2.0
      Set min to be new;
21 end
22 end
1 Algorithm: BSTDict.delete(node)
2 if node has two children then
3
     swapnode = right
     while swapnode has a left child do
5
        swapnode = swapnode.left
6
     end
7
     Swap node's parent and children links with swapnode
8
     if node is the BST root then
9
       Set root to be swapnode
10
     end
11 end
12 if node has no children then
13
    if node is the min then
14
       Set min to be node.parent
15
     if node is the root then
16
       Set root to be NIL
17
     else
18
       Set node.parent's child to be NIL
19
20 else
```

Matthew Kramer (U20891900) - Assignment 10

```
/* node must have one child */
21
22
    if node is the min then
    Set min to be node.right
23
      while node.right has a left child
24
25
         min = node.left
26
     end
27
   end
28
    if node is the root then
29
     Set root to be node's child
30
31
       Set node.parent's child to be node's child
32
     end
33
     Set node's child's parent to be node.parent
34 end
```