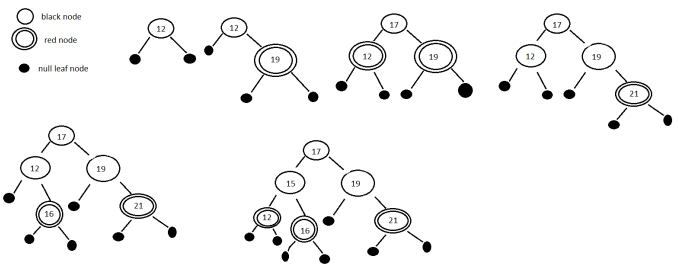
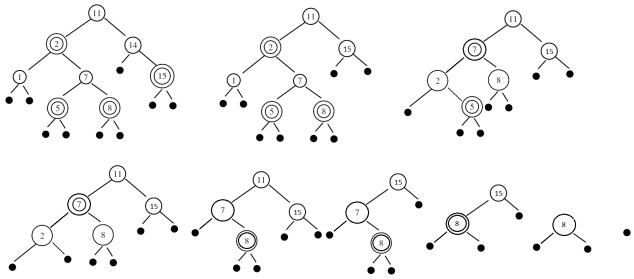
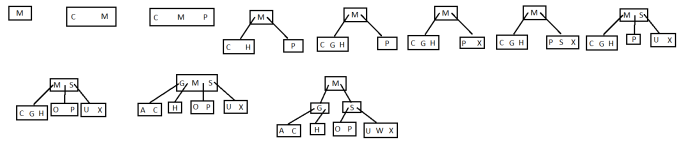
1.



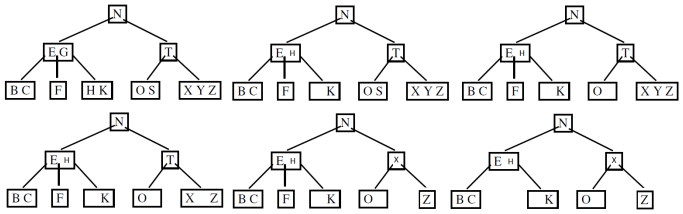
2.



3.



4.



5. An idea for finding the max value would be to traverse the nodes furthest to the right until the right-most leaf node is reached and then returning a reference to that node as well as the key in the right-most position inside the node.
   An idea for finding the predecessor of a given node would be to use the previous max function with the input being a reference to the given node/key index's pointer on the left side while checking all edge and special cases.

```
B_tree_max(root){
        Node n1 = root;
        Node n2;
        while(n1!=null){
                n2=n1;
                n1=n1.pointers[pointers.length-1];
        }
        return n2, n2.keys[keys.length-1];
}

B_tree_predecessor(node, i){
        if(node.pointers[i-1]!=null){
                return B_tree_max(node.pointers[i-1]);
        }
        Node y = node.parent;
        key  k = node.keys[i];
        int index = i;
        while (y != null) {
        for(int i=0; i<y.keys.length-1; i++;){
                if(y.keys[i]>k){
                        if(i==0){break;}else{//breaks while loop
                        index=i-1;}
                }
        }
             node = y;
             y = y.parent;

        }
        return y, index;
}
```

6. An idea would be to create a B-Tree and load the data into nodes with each node containing at most 1 page of data (2t-1=number of elements in a page) and then utilize the in-order traversal funtion to display the data in each node in a sorted order. Because of the definition of a B-Tree, the nodes will still be visited in order using that function, however, one would have to put the recursive calls and print statement in a loop in order to reach all of the nodes in the pointer array and keys in the keys array.