Approach Document – Jonathan Wilson and Jacob Greer

**Prep:**

* Read and understand the instructions to the greatest extent.
* Read and understand the topic of bit fields.
* Read and understand BSTNode.h functions.
* Read and understand BST.h functions.

**Notes:**

* Research into bit fields has revealed that it, the bit field, sets the limit to the range of values it can hold.
  + E.g. unsigned int x : 3 will hold the values 0 through to 7.
  + E.g. bool x:1 has the range 0 through to 1
* A double threaded binary search tree is where each node is threaded towards an inorder predecessor (left pointer) and a successor (right pointer) – e.g. all left NULL pointers will point to inorder predecessor and all right NULL pointers will point to inorder successor.
* Dummy node: solves the issue where the leftmost left pointer and rightmost right pointer have nowhere to point to.

**Completed Process:**

* Successfully implemented necessary functions with moderate difficulty due to certain misunderstandings of the workings of a double threaded binary search tree.
* Key issues were discovered when attempting to implement a dummy node. These were promptly resolved.
* Research into bitfields and double threaded binary search trees was highly productive and assisted in the completion of the project.