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1: // C program to find minimum and maximum value node in binar
2: // Tree.
3:
4: #include <stdio.h>
5: #include <stdlib.h>
6:
7: /* A binary tree node has data, pointer to left child
8: and a pointer to right child */
9: struct node {
10:     int data;
11:     struct node* left;
12:     struct node* right;
13: };
14:
15: /* Helper function that allocates a new node
16: with the given data and NULL left and right
17: pointers. */
18: struct node* newNode(int data)
19: {
20:     struct node* node
21:         = (struct node*)malloc(sizeof(struct node));
22:     node->data = data;
23:     node->left = NULL;
24:     node->right = NULL;
25:
26:     return (node);
27: }
28:
29: /* Give a binary search tree and a number,
30: inserts a new node with the given number in
31: the correct place in the tree. Returns the new
32: root pointer which the caller should then use
33: (the standard trick to avoid using reference
34: parameters). */
35: struct node* insert(struct node* node, int data)
36: {
37:     /* 1. If the tree is empty, return a new,
38:        single node */
39:     if (node == NULL)

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40:         return (newNode(data));
41:     else {
42:         /* 2. Otherwise, recur down the tree */
43:         if (data <= node->data)
44:             node->left = insert(node->left, data);
45:         else
46:             node->right = insert(node->right, data);
47:
48:         /* return the (unchanged) node pointer */
49:         return node;
50:     }
51: }
52:
53: /* Given a non-empty binary search tree,
54: return the minimum data value found in that
55: tree. Note that the entire tree does not need
56: to be searched. */
57: int minValue(struct node* node)
58: {
59:     struct node* current = node;
60:
61:     /* Loop down to find the leftmost leaf */
62:     while (current->left != NULL) {
63:         current = current->left;
64:     }
65:     return (current->data);
66: }
67:
68: int maxValue(struct node* node)
69: {
70:     struct node* current = node;
71:
72:     /* Loop down to find the leftmost leaf */
73:     while (current->right != NULL) {
74:         current = current->right;
75:     }
76:     return (current->data);
77: }
78:

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79: /* Driver code*/
80: int main()
81: {
82:     struct node* root = NULL;
83:     root = insert(root, 4);
84:     insert(root, 2);
85:     insert(root, 1);
86:     insert(root, 3);
87:     insert(root, 6);
88:     insert(root, 5);
89:
90:     // Function call
91:     printf("\n Minimum value in BST is %d", minValue(root));
92:     printf("\n Maximum value in BST is %d", maxValue(root));
93:     getchar();
94:     return 0;
95: }
96:
```