```java
 1 /**
 2  * Implementation of HNode by
 3  * @author Amelia Do
 4  */
 5
 6 public class HNode {
 7
 8     HNode left;           // left-child of the HNode
 9     HNode right;          // right-child of the HNode
10     public String symbols;      // Storing symbols in leaves
11     public int freq;            // Cumulative frequency
12
13     /**
14      * Constructor of the HNode
15      * @param c - character c as symbol of the HNode
16      * @param f - frequency f as frequency/ data of the HNode
17      */
18     public HNode(char c, int f)
19     {
20         this.symbols = String.valueOf(c);
21         this.freq = f;
22         this.left = null;
23         this.right = null;
24     }
25
26     /**
27      * Creates a node with the given left and right children.
28      * @param left - left-child of the HNode created
29      * @param right - right-child of the HNode created
30      */
31     public HNode(HNode left, HNode right)
32     {
33         this.left = left;
34         this.right = right;
35         this.symbols = left.symbols + right.symbols;
36         this.freq = left.freq + right.freq;
37     }
38
39     /**
```

```java
40          * Determine if the node is a leaf
41          * @return true if the node is a leaf
42          */
43        public boolean isLeaf()
44        {
45            return left == null && right == null;
46        }
47
48        /**
49          * Determine if the node contains the given character
50          * @param ch - character to be checked if the node contains
    such
51          * @return Returns true if this node contains the given
    character
52          */
53        public boolean contains(char ch)
54        {
55            return symbols.indexOf(ch) >= 0;
56        }
57
58        /**
59          * Returns the symbol stored in this node
60          * @return the symbol stored in this node, '\0' if it is not
    a leaf
61          */
62        public char getSymbol()
63        {
64            if ( isLeaf() ) {
65                return symbols.charAt(0);
66            }
67            return '\0';
68        }
69
70        public String toString()
71        {
72            return symbols + ":" + freq;
73        }
74 }
75
```

76
77
78