Our Solution(s) Run Code

Solution 1

```java
// Copyright © 2020 AlgoExpert, LLC. All rights reserved.

import java.util.*;

class Program {
  static class Node {
    String name;
    List<Node> children = new ArrayList<Node>();

    public Node(String name) {
      this.name = name;
    }

    // O(v + e) time | O(v) space
    public List<String> breadthFirstSearch(List<String> array) {
      Queue<Node> queue = new LinkedList<Node>();
      queue.add(this);
      while (!queue.isEmpty()) {
        Node current = queue.poll();
        array.add(current.name);
        queue.addAll(current.children);
      }
      return array;
    }

    public Node addChild(String name) {
      Node child = new Node(name);
      children.add(child);
      return this;
    }
  }
}

```

Your Solutions Run Code

Solution 1 Solution 2 Solution 3

```java
import java.util.*;

class Program {
  // Do not edit the class below except
  // for the breadthFirstSearch method.
  // Feel free to add new properties
  // and methods to the class.
  static class Node {
    String name;
    List<Node> children = new ArrayList<Node>();

    public Node(String name) {
      this.name = name;
    }

    public List<String> breadthFirstSearch(List<String> array) {
      // Write your code here.
      return null;
    }

    public Node addChild(String name) {
      Node child = new Node(name);
      children.add(child);
      return this;
    }
  }
}

```

Our Tests

Custom Output Submit Code

```
class ProgramTest {
    Program.Node testS;
    Program.Node testT;
    Program.Node testU;
    Program.Node testV;
    Program.Node testW;

    public ProgramTest() {
        testS = new Program.Node('s');
        testS.addChild('t').addChild('u');
        testS.children.get(0).addChild('v');

        testT = new Program.Node('t');
        testT.addChild('u').addChild('v').addChild('w').addChild('x');
        testT.children.get(1).addChild('y');

        testU = new Program.Node('u');
        testU.addChild('v');
        testU.children.get(0).addChild('x');
        testU.children.get(0).children.get(0).addChild('w').addChild
```

Run or submit code when you're ready.