**QUI DONC Test Paths**

**Algorithm 1**

19 test paths are needed for Node Coverage  
[1,2,3,4,1,12]  
[1,2,5,8,1,12]  
[1,2,5,6,7,1,12]  
[1,2,5,9,10,11,1,12]  
[1,2,3,4,5,12]  
[1,2,5,8,5,12]  
[1,2,5,5a,5,12]  
[1,2,5,5b,5,12]  
[1,2,5,6,5c,5,12]  
[1,2,5,6,5d,5,12]  
[1,2,5,6,7,5e,5,12]  
[1,2,5,9,10,11,5,12]  
[1,2,5,6,7,8,12]  
[1,2,5,6,7,9,12]  
[1,2,5,9,9a,9,12]  
[1,2,5,9,9b,9,12]  
[1,2,5,9,10,9c,9,12]  
[1,2,5,9,10,9d,9,12]  
[1,2,5,9,10,11,9e,9,12]

**34** test paths are needed for Edge Coverage  
[1,2,12]  
[1,2,3,12]  
[1,2,3,4,12]  
[1,2,5,8,12]  
[1,2,5,6,12]  
[1,2,5,6,7,12]  
[1,2,5,9,10,12]  
[1,2,5,9,10,11,12]  
[1,2,3,4,1,12]  
[1,2,5,8,1,12]  
[1,2,5,6,7,1,12]  
[1,2,5,9,10,11,1,12]  
[1,2,3,5,12]  
[1,2,3,4,5,12]  
[1,2,5,8,5,12]  
[1,2,5,9,5,12]  
[1,2,5,5a,5,12]  
[1,2,5,5b,5,12]  
[1,2,5,6,7,5,12]  
[1,2,5,6,5c,5,12]  
[1,2,5,6,5d,5,12]  
[1,2,5,9,10,5,12]  
[1,2,5,6,7,5e,5,12]  
[1,2,5,9,10,11,5,12]  
[1,2,5,6,8,12]  
[1,2,5,6,7,8,12]  
[1,2,5,6,9,12]  
[1,2,5,6,7,9,12]  
[1,2,5,9,9a,9,12]  
[1,2,5,9,9b,9,12]  
[1,2,5,9,10,11,9,12]  
[1,2,5,9,10,9c,9,12]  
[1,2,5,9,10,9d,9,12]  
[1,2,5,9,10,11,9e,9,12]

|  |  |
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| **125** test paths are needed for Edge-Pair Coverage | |
| Test Paths |  |
| [1,2,3,12] |  |
| [1,2,5,12] |  |
| [1,2,5,6,12] |  |
| [1,2,3,4,5,12] |  |
| [1,2,3,4,1,12] |  |
| [1,2,3,5,8,12] |  |
| [1,2,3,5,6,12] |  |
| [1,2,3,5,9,12] |  |
| [1,2,3,5,5a,5,12] |  |
| [1,2,3,5,5b,5,12] |  |
| [1,2,3,4,5,8,12] |  |
| [1,2,3,4,5,6,12] |  |
| [1,2,3,4,5,9,12] |  |
| [1,2,3,4,5,5a,5,12] |  |
| [1,2,3,4,5,5b,5,12] |  |
| [1,2,3,4,1,2,12] |  |
| [1,2,5,8,5,12] |  |
| [1,2,5,8,1,12] |  |
| [1,2,5,6,7,12] |  |
| [1,2,5,6,8,12] |  |
| [1,2,5,6,5c,5,12] |  |
| [1,2,5,6,5d,5,12] |  |
| [1,2,5,6,9,12] |  |
| [1,2,5,9,5,12] |  |
| [1,2,5,5a,5,6,12] |  |
| [1,2,5,5a,5,9,12] |  |
| [1,2,5,5a,5,5a,5,12] |  |
| [1,2,5,5a,5,5b,5,12] |  |
| [1,2,5,5b,5,8,12] |  |
| [1,2,5,5b,5,6,12] |  |
| [1,2,5,5b,5,9,12] |  |
| [1,2,5,5b,5,5a,5,12] |  |
| [1,2,5,5b,5,5b,5,12] |  |
| [1,2,5,6,7,1,12] |  |
| [1,2,5,6,7,5,12] |  |
| [1,2,5,6,7,8,12] |  |
| [1,2,5,6,7,5e,5,12] |  |
| [1,2,5,6,7,9,12] |  |
| [1,2,5,6,8,5,12] |  |
| [1,2,5,6,8,1,12] |  |
| [1,2,5,6,5c,5,8,12] |  |
| [1,2,5,6,5c,5,6,12] |  |
| [1,2,5,6,5c,5,9,12] |  |
| [1,2,5,6,5c,5,5a,5,12] |  |
| [1,2,5,6,5c,5,5b,5,12] |  |
| [1,2,5,6,5d,5,8,12] |  |
| [1,2,5,6,5d,5,6,12] |  |
| [1,2,5,6,5d,5,9,12] |  |
| [1,2,5,6,5d,5,5a,5,12] |  |
| [1,2,5,6,5d,5,5b,5,12] |  |
| [1,2,5,6,9,5,12] |  |
| [1,2,5,6,9,10,12] |  |
| [1,2,5,6,9,9a,9,12] |  |
| [1,2,5,6,9,9b,9,12] |  |
| [1,2,5,6,7,1,2,12] |  |
| [1,2,5,6,7,5,8,12] |  |
| [1,2,5,6,7,5,6,12] |  |
| [1,2,5,6,7,5,9,12] |  |
| [1,2,5,6,7,5,5a,5,12] |  |
| [1,2,5,6,7,5,5b,5,12] |  |
| [1,2,5,6,7,8,5,12] |  |
| [1,2,5,6,7,8,1,12] |  |
| [1,2,5,6,7,5e,5,8,12] |  |
| [1,2,5,6,7,5e,5,6,12] |  |
| [1,2,5,6,7,5e,5,9,12] |  |
| [1,2,5,6,7,5e,5,5a,5,12] |  |
| [1,2,5,6,7,5e,5,5b,5,12] |  |
| [1,2,5,6,7,9,5,12] |  |
| [1,2,5,6,7,9,10,12] |  |
| [1,2,5,6,7,9,9a,9,12] |  |
| [1,2,5,6,7,9,9b,9,12] |  |
| [1,2,5,8,5,8,12] |  |
| [1,2,5,8,5,6,12] |  |
| [1,2,5,8,5,9,12] |  |
| [1,2,5,8,5,5a,5,12] |  |
| [1,2,5,8,5,5b,5,12] |  |
| [1,2,5,8,1,2,12] |  |
| [1,2,5,9,5,8,12] |  |
| [1,2,5,9,5,6,12] |  |
| [1,2,5,9,5,9,12] |  |
| [1,2,5,9,5,5a,5,12] |  |
| [1,2,5,9,5,5b,5,12] |  |
| [1,2,5,9,10,11,12] |  |
| [1,2,5,9,10,5,12] |  |
| [1,2,5,9,10,9c,9,12] |  |
| [1,2,5,9,10,9d,9,12] |  |
| [1,2,5,9,9a,9,5,12] |  |
| [1,2,5,9,9a,9,10,12] |  |
| [1,2,5,9,9a,9,9a,9,12] |  |
| [1,2,5,9,9a,9,9b,9,12] |  |
| [1,2,5,9,9b,9,5,12] |  |
| [1,2,5,9,9b,9,10,12] |  |
| [1,2,5,9,9b,9,9a,9,12] |  |
| [1,2,5,9,9b,9,9b,9,12] |  |
| [1,2,5,9,10,11,1,12] |  |
| [1,2,5,9,10,11,9,12] |  |
| [1,2,5,9,10,11,9e,9,12] |  |
| [1,2,5,9,10,11,5,12] |  |
| [1,2,5,9,10,5,8,12] |  |
| [1,2,5,9,10,5,6,12] |  |
| [1,2,5,9,10,5,9,12] |  |
| [1,2,5,9,10,5,5a,5,12] |  |
| [1,2,5,9,10,5,5b,5,12] |  |
| [1,2,5,9,10,9c,9,5,12] |  |
| [1,2,5,9,10,9c,9,10,12] |  |
| [1,2,5,9,10,9c,9,9a,9,12] |  |
| [1,2,5,9,10,9c,9,9b,9,12] |  |
| [1,2,5,9,10,9d,9,5,12] |  |
| [1,2,5,9,10,9d,9,10,12] |  |
| [1,2,5,9,10,9d,9,9a,9,12] |  |
| [1,2,5,9,10,9d,9,9b,9,12] |  |
| [1,2,5,9,10,11,1,2,12] |  |
| [1,2,5,9,10,11,9,5,12] |  |
| [1,2,5,9,10,11,9,10,12] |  |
| [1,2,5,9,10,11,9,9a,9,12] |  |
| [1,2,5,9,10,11,9,9b,9,12] |  |
| [1,2,5,9,10,11,9e,9,5,12] |  |
| [1,2,5,9,10,11,9e,9,10,12] |  |
| [1,2,5,9,10,11,9e,9,9a,9,12] |  |
| [1,2,5,9,10,11,9e,9,9b,9,12] |  |
| [1,2,5,9,10,11,5,8,12] |  |
| [1,2,5,9,10,11,5,6,12] |  |
| [1,2,5,9,10,11,5,9,12] |  |
| [1,2,5,9,10,11,5,5a,5,12] |  |
| [1,2,5,9,10,11,5,5b,5,12] |  |

Algorithm 2

**23** test paths are needed for Edge Coverage  
[1,2,5,9,10,11,9e,9,10,9d,9,10,9c,9,12]  
[1,2,5,6,7,9,9a,9,9b,9,12]  
[1,2,5,6,7,5e,5,12]  
[1,2,5,6,7,8,12]  
[1,2,5,6,9,10,11,1,12]  
[1,2,5,6,5d,5,6,5c,5,12]  
[1,2,5,6,8,1,12]  
[1,2,5,5b,5,5b,5,12]  
[1,2,5,5a,5,5a,5,12]  
[1,2,3,5,6,7,1,12]  
[1,2,5,8,5,12]  
[1,2,3,4,1,2,3,4,5,9,5,12]  
[1,2,5,6,7,5,12]  
[1,2,5,9,10,5,12]  
[1,2,5,9,10,11,9,12]  
[1,2,5,9,10,11,5,12]  
[1,2,12]  
[1,2,3,12]  
[1,2,3,4,12]  
[1,2,5,6,12]  
[1,2,5,6,7,12]  
[1,2,5,9,10,12]  
[1,2,5,9,10,11,12]

|  |  |
| --- | --- |
| **66** test paths are needed for Edge-Pair Coverage using the prefix graph algorithm | |
| Test Paths |  |
| [1,2,5,9,10,11,1,12] |  |
| [1,2,5,9,10,11,9e,9,10,5,5a,5,12] |  |
| [1,2,5,9,10,9c,9,10,11,12] |  |
| [1,2,5,6,7,9,9b,9,10,11,9e,9,5,12] |  |
| [1,2,5,6,7,9,9a,9,10,11,9,5,12] |  |
| [1,2,5,6,7,9,10,9c,9,5,12] |  |
| [1,2,5,6,7,5e,5,9,5,12] |  |
| [1,2,5,6,7,5,6,7,12] |  |
| [1,2,5,6,5d,5,5b,5,12] |  |
| [1,2,5,6,5d,5,5a,5,12] |  |
| [1,2,5,6,5d,5,9,5,9,10,12] |  |
| [1,2,5,9,10,11,5,6,5c,5,8,5,5a,5,12] |  |
| [1,2,5,6,7,5e,5,6,8,1,2,3,12] |  |
| [1,2,5,6,5c,5,9,5,6,9,9a,9,5,6,8,5,9,10,9d,9,5,12] |  |
| [1,2,3,4,5,5b,5,6,7,8,5,8,5,6,5d,5,8,5,5b,5,12] |  |
| [1,2,5,9,10,11,9,10,5,9,10,11,1,2,5,6,8,12] |  |
| [1,2,5,9,10,9d,9,10,5,6,7,1,2,3,5,8,1,2,12] |  |
| [1,2,5,6,7,8,1,2,3,4,5,8,12] |  |
| [1,2,3,4,1,2,5,8,1,12] |  |
| [1,2,5,5a,5,6,12] |  |
| [1,2,5,5b,5,9,12] |  |
| [1,2,3,4,5,9,9a,9,9a,9,9b,9,9a,9,12] |  |
| [1,2,5,6,5c,5,5b,5,5b,5,5a,5,5a,5,9,9b,9,9b,9,12] |  |
| [1,2,5,6,7,5,9,5,5b,5,12] |  |
| [1,2,5,6,5d,5,6,7,9,5,6,7,1,12] |  |
| [1,2,3,4,5,5a,5,6,7,5,8,5,12] |  |
| [1,2,3,4,5,6,9,12] |  |
| [1,2,3,5,5b,5,8,5,6,9,10,5,5b,5,12] |  |
| [1,2,3,5,9,10,11,5,8,12] |  |
| [1,2,3,5,6,9,9b,9,5,6,5c,5,6,7,5e,5,8,12] |  |
| [1,2,5,9,5,6,9,5,5a,5,12] |  |
| [1,2,3,4,1,12] |  |
| [1,2,5,6,5c,5,5a,5,5b,5,9,5,8,12] |  |
| [1,2,5,9,10,11,5,9,10,5,8,12] |  |
| [1,2,5,12] |  |
| [1,2,3,4,12] |  |
| [1,2,3,5,5a,5,12] |  |
| [1,2,3,5,12] |  |
| [1,2,3,4,5,12] |  |
| [1,2,5,5a,5,8,12] |  |
| [1,2,5,6,5c,5,12] |  |
| [1,2,5,6,5d,5,12] |  |
| [1,2,5,6,7,5,5a,5,12] |  |
| [1,2,5,6,7,5,5b,5,12] |  |
| [1,2,5,6,7,5,12] |  |
| [1,2,5,6,7,8,12] |  |
| [1,2,5,6,7,5e,5,5a,5,12] |  |
| [1,2,5,6,7,5e,5,5b,5,12] |  |
| [1,2,5,6,7,5e,5,12] |  |
| [1,2,5,6,7,9,12] |  |
| [1,2,5,9,10,5,12] |  |
| [1,2,5,9,10,9c,9,9a,9,12] |  |
| [1,2,5,9,10,9c,9,9b,9,12] |  |
| [1,2,5,9,10,9c,9,12] |  |
| [1,2,5,9,10,9d,9,9a,9,12] |  |
| [1,2,5,9,10,9d,9,9b,9,12] |  |
| [1,2,5,9,10,9d,9,12] |  |
| [1,2,5,9,10,11,9,9a,9,12] |  |
| [1,2,5,9,10,11,9,9b,9,12] |  |
| [1,2,5,9,10,11,9,12] |  |
| [1,2,5,9,10,11,9e,9,9a,9,12] |  |
| [1,2,5,9,10,11,9e,9,9b,9,12] |  |
| [1,2,5,9,10,11,9e,9,12] |  |
| [1,2,5,9,10,11,5,5a,5,12] |  |
| [1,2,5,9,10,11,5,5b,5,12] |  |
| [1,2,5,9,10,11,5,12] |  |