**RESULTS OF circuit s1488**

No of vertices initially : 660

No. of edges initially : 1338

No of betree: 3

No of vertex split: 679

No of label swap: 368

no.of edge-swap: 109

no of extra\_labels: 121

The nodes which should be stored for extra labels: [689, 696, 698, 699, 708, 710, 726, 727, 728, 729, 734, 735, 736, 738, 743, 745, 746, 753, 757, 763, 764, 767, 769, 770, 776, 777, 782, 785, 786, 789, 793, 795, 796, 799, 807, 817, 825, 827, 828, 831, 833, 834, 840, 848, 850, 852, 853, 854, 855, 857, 858, 859, 860, 861, 869, 874, 892, 895, 902, 904, 910, 913, 916, 919, 920, 924, 926, 928, 930, 932, 942, 944, 946, 948, 950, 951, 952, 956, 959, 967, 969, 970, 975, 976, 989, 991, 1013, 1014, 1023, 1024, 1029, 1030, 1038, 1041, 1042, 1112, 1129, 1130, 1131, 1132, 1133, 1134, 1137, 1139, 1140, 1148, 1151, 1152, 1157, 1165, 1167, 1169, 1171, 1172, 1173, 1178, 1180, 1181, 1188, 1193, 1233]

To convert into prufer sequence we take node with id 1 as root node

Prufer Sequence:

[781, 1144, 25, 821, 191, 28, 1192, 1142, 33, 1210, 1146, 1149, 866, 1154, 1155, 878, 884, 1160, 1163, 1166, 264, 1170, 486, 55, 1001, 56, 864, 1200, 59, 954, 579, 61, 1025, 63, 1051, 64, 1281, 66, 1284, 69, 1086, 71, 1312, 72, 1092, 73, 632, 75, 1113, 76, 1114, 79, 1323, 81, 1326, 84, 1328, 86, 1331, 90, 651, 96, 1337, 102, 658, 108, 660, 493, 663, 665, 662, 1184, 1218, 1195, 665, 1175, 1177, 954, 491, 665, 674, 671, 666, 1179, 16, 15, 675, 493, 661, 678, 661, 664, 17, 662, 1187, 863, 675, 663, 1215, 18, 663, 663, 1138, 1138, 1191, 664, 681, 682, 15, 682, 18, 677, 677, 681, 680, 1211, 18, 1138, 19, 662, 679, 1194, 470, 1147, 682, 677, 662, 662, 666, 662, 679, 1162, 674, 19, 666, 664, 661, 748, 16, 681, 13, 665, 687, 675, 684, 675, 677, 674, 679, 5, 692, 16, 31, 1219, 1220, 1251, 693, 681, 661, 677, 681, 662, 1239, 682, 661, 569, 1141, 1225, 681, 1227, 666, 5, 662, 677, 673, 42, 42, 703, 664, 681, 679, 19, 667, 1183, 675, 1237, 664, 1238, 14, 711, 711, 675, 673, 1184, 663, 674, 1260, 677, 715, 714, 665, 714, 715, 706, 17, 665, 713, 714, 714, 713, 715, 1185, 664, 677, 666, 666, 835, 718, 9, 1252, 1253, 666, 703, 709, 677, 717, 716, 664, 1190, 10, 592, 679, 1327, 631, 10, 1259, 668, 6, 1166, 663, 663, 666, 1297, 713, 679, 666, 682, 1196, 661, 682, 682, 664, 675, 664, 1270, 675, 1272, 668, 673, 666, 1208, 677, 677, 5, 18, 677, 1214, 700, 1216, 683, 681, 14, 669, 1279, 661, 675, 1224, 682, 693, 1229, 682, 701, 673, 599, 1236, 548, 673, 1325, 691, 669, 661, 671, 1289, 1336, 677, 15, 663, 673, 1325, 1250, 8, 675, 673, 1255, 675, 673, 1258, 13, 1300, 1302, 662, 662, 663, 673, 1307, 1269, 671, 1271, 663, 664, 1273, 668, 666, 1332, 675, 666, 666, 679, 671, 1316, 668, 673, 670, 1288, 671, 668, 1291, 677, 1324, 664, 673, 675, 666, 663, 669, 662, 651, 666, 666, 1324, 668, 1308, 668, 644, 682, 681, 1313, 1334, 671, 1317, 671, 671, 671, 671, 671, 671, 671, 673, 1339, 671, 100, 91, 1333, 101, 92, 1334, 103, 93, 1335, 104, 94, 1336, 106, 106, 97, 1338, 164, 1136, 685, 687, 802, 691, 694, 804, 13, 663, 954, 809, 674, 662, 673, 675, 706, 664, 678, 669, 237, 680, 714, 682, 838, 723, 664, 7, 865, 230, 14, 661, 934, 663, 684, 139, 751, 761, 664, 687, 151, 742, 981, 982, 661, 805, 747, 677, 732, 317, 679, 666, 806, 998, 816, 1000, 664, 820, 716, 716, 716, 1007, 1008, 679, 722, 722, 844, 846, 849, 1017, 42, 771, 775, 346, 744, 847, 349, 752, 1027, 878, 885, 886, 1033, 725, 1035, 681, 1039, 1040, 900, 824, 826, 908, 1047, 1048, 873, 1050, 943, 945, 1053, 947, 375, 788, 237, 707, 724, 798, 963, 664, 300, 784, 1063, 974, 1065, 977, 845, 797, 675, 1070, 1071, 923, 719, 800, 737, 661, 1078, 1007, 915, 1012, 1081, 936, 832, 1022, 349, 10, 856, 955, 1036, 1037, 879, 894, 958, 918, 724, 1054, 1096, 1004, 830, 891, 1058, 922, 425, 1322, 1017, 1064, 1104, 801, 1008, 1107, 925, 599, 1074, 1111, 881, 1077, 996, 1116, 927, 441, 661, 1072, 1028, 1050, 819, 1091, 1061, 631, 1109, 1318, 1115, 935, 1127, 1118, 1066, 1120, 985, 1010, 843, 371, 1248, 941, 382, 1094, 880, 794, 211, 1282, 677, 210, 1292, 987, 1143, 949, 1150, 887, 891, 899, 901, 912, 965, 994, 494, 888, 774, 1019, 1267, 1087, 662, 662, 662, 662, 661, 662, 661, 674, 663, 665, 15, 10, 671, 676, 662, 673, 679, 664, 673, 664, 680, 663, 666, 661, 666, 682, 680, 673, 678, 679, 673, 682, 664, 679, 682, 681, 13, 682, 681, 668, 1234, 677, 679, 679, 682, 1261, 662, 661, 661, 1317, 682, 673, 687, 664, 664, 682, 661, 687, 671, 15, 1212, 663, 662, 1135, 662, 680, 677, 666, 664, 694, 690, 694, 673, 687, 189, 1263, 679, 695, 681, 695, 209, 16, 1176, 1221, 1222, 669, 701, 703, 662, 662, 663, 673, 701, 661, 1232, 1286, 679, 662, 662, 674, 675, 670, 674, 123, 1199, 666, 666, 673, 664, 663, 673, 663, 664, 663, 714, 673, 664, 675, 694, 673, 714, 663, 714, 257, 1245, 664, 673, 1314, 684, 819, 666, 677, 690, 843, 663, 694, 668, 676, 883, 677, 666, 717, 666, 716, 677, 717, 280, 1249, 718, 716, 945, 666, 754, 663, 677, 8, 679, 664, 679, 720, 968, 680, 663, 723, 304, 1262, 677, 722, 972, 679, 675, 1266, 664, 1321, 668, 668, 668, 703, 876, 662, 666, 671, 585, 10, 663, 668, 701, 677, 664, 672, 662, 664, 671, 678, 671, 662, 681, 1145, 668, 671, 679, 666, 681, 694, 851, 682, 673, 682, 7, 675, 677, 661, 664, 8, 664, 673, 666, 666, 701, 872, 681, 666, 621, 1317, 666, 673, 666, 671, 673, 669, 868, 673, 681, 675, 663, 668, 666, 671, 681, 671, 1090, 1287, 1311, 671, 668, 671, 740, 663, 1320, 681, 784, 664, 663, 666, 732, 663, 661, 662, 664, 668, 663, 662, 3, 661, 661, 665, 661, 670, 808, 664, 346, 1327, 10, 739, 13, 13, 13, 663, 672, 765, 680, 143, 1217, 663, 730, 664, 677, 661, 815, 1203, 678, 677, 183, 665, 661, 742, 673, 679, 1164, 45, 1205, 677, 755, 673, 847, 693, 682, 779, 678, 1159, 42, 279, 6, 664, 201, 5, 662, 749, 882, 1308, 662, 1161, 731, 665, 1206, 1168, 938, 1246, 675, 750, 662, 51, 52, 986, 6, 733, 5, 971, 569, 382, 23, 818, 803, 467, 9, 693, 1306, 983, 1270, 984, 1273, 700, 868, 668, 454, 98, 89, 1332, 705, 706, 883, 1228, 811, 1156, 705, 766, 18, 1002, 1273, 783, 18, 1006, 1297, 836, 1170, 837, 1268, 791, 19, 790, 19, 1011, 1326, 794, 15, 1015, 1278, 1016, 592, 1082, 1315, 756, 17, 1018, 1020, 1286, 1021, 1280, 870, 702, 1025, 17, 1026, 1288, 877, 705, 233, 16, 818, 13, 122, 14, 664, 1034, 599, 822, 1168, 896, 712, 686, 824, 664, 760, 1043, 1328, 1049, 1290, 906, 712, 778, 14, 780, 15, 282, 718, 1055, 1294, 1056, 1295, 961, 1176, 1149, 905, 1241, 1045, 1324, 898, 712, 1062, 631, 1083, 1279, 973, 50, 386, 9, 749, 16, 792, 1136, 388, 6, 1069, 1305, 664, 21, 22, 1182, 893, 1330, 993, 53, 997, 1202, 814, 1161, 813, 1235, 889, 709, 890, 1242, 1046, 999, 1204, 772, 18, 1075, 1310, 862, 1154, 15, 980, 1018, 19, 1084, 632, 1073, 1270, 937, 1186, 1168, 18, 320, 704, 875, 1226, 759, 17, 1085, 1321, 355, 18, 1089, 1322, 1039, 16, 1046, 16, 1092, 15, 1093, 1335, 1052, 1249, 768, 18, 1095, 635, 1003, 1207, 829, 688, 1098, 1327, 1100, 1321, 1102, 1334, 917, 1153, 37, 867, 931, 17, 20, 461, 351, 1283, 1086, 19, 1108, 660, 317, 1145, 12, 787, 1209, 1005, 1274, 966, 721, 964, 1257, 1060, 1299, 960, 8, 760, 17, 762, 1076, 585, 907, 712, 897, 7, 375, 1293, 842, 29, 841, 1223, 867, 665, 400, 16, 1080, 1276, 1009, 1213, 50, 1117, 1329, 880, 705, 228, 5, 773, 18, 403, 1277, 995, 53, 322, 697, 863, 1247, 1051, 5, 1099, 1296, 1057, 1254, 957, 718, 1121, 1333, 1106, 1304, 1068, 1265, 979, 50, 1123, 1335, 1124, 1336, 1079, 1275, 921, 17, 1125, 1338, 1103, 1301, 990, 1198, 810, 1155, 16, 1126, 658, 1105, 1303, 1067, 1264, 978, 50, 441, 31, 203, 5, 1119, 1319, 1097, 1294, 988, 1197, 702, 871, 1244, 911, 715, 1032, 1231, 839, 1174, 19, 1122, 1322, 962, 718, 1044, 1240, 903, 16, 665, 1031, 1230, 758, 15, 449, 644, 1088, 1285, 914, 715, 909, 1243, 823, 688, 300, 50, 980, 6, 1110, 1309, 929, 1158, 812, 1201, 992, 1331, 940, 1189, 939, 1312, 933, 17, 3, 139, 18, 2, 741, 15, 5, 1128, 660, 1101, 1298, 1059, 1256, 953, 718, 289, 665, 1136, 762, 5, 754, 6, 14, 151, 19]