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[[0, 0.1735, 0.6209, 0.9942, 0.3642, 0.7733000000000001, 0.5556, 0.7007, 0.7281, 0.9407, 1.8088, 1.8215, 2.7643, 2.2446, 2.9581, 3.3516, 2.0906, 1.9825, 1.8147, 1.1781, 1.0167, 1.9424, 1.7530999999999999, 1.4970999999999999, 1.3571, 1.2402, 0.9618, 1.2801, 2.1814999999999998, 2.2439999999999998, 0.8204, 0.3569, 1.3393000000000002, 1.1433, 1.4087, 1.4578, 1.508], [0.1735, 0, 0.7944, 1.1677, 0.5377000000000001, 0.9468000000000001, 0.7291000000000001, 0.8742, 0.9016000000000001, 1.1142, 1.9823, 1.9949999999999999, 2.9377999999999997, 2.4181, 3.1316, 3.5251, 2.2641, 2.156, 1.9882, 1.3516, 1.1902, 2.1159, 1.9266, 1.6705999999999999, 1.5306, 1.4137, 1.1353, 1.4536, 2.355, 2.4175, 0.7754, 0.5304, 1.5128, 1.3168, 1.5822, 1.6313, 1.6815], [0.6209, 0.7944, 0, 1.3005, 0.6705, 1.0796000000000001, 0.8619, 1.1491, 1.0344, 1.2469999999999999, 2.1151, 2.1277999999999997, 3.0705999999999998, 2.5509, 3.2644, 3.6579, 2.3968999999999996, 2.2888, 2.121, 1.4844, 1.323, 2.5633, 2.1863, 1.8034, 1.6634, 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(37, 37)

37

number\_of\_edges = 58

edge\_pairs = [[0, 1], [0, 2], [0, 4], [0, 27], [0, 31], [1, 30], [2, 4], [2, 28], [2, 29], [2, 32], [2, 33], [2, 35], [3, 4], [3, 5], [3, 27], [4, 5], [4, 6], [4, 8], [4, 14], [4, 15], [4, 26], [4, 28], [5, 20], [6, 7], [7, 8], [7, 22], [7, 31], [8, 9], [8, 22], [9, 13], [9, 16], [9, 22], [9, 26], [10, 11], [10, 12], [10, 13], [10, 17], [10, 19], [11, 12], [11, 19], [13, 26], [14, 31], [15, 27], [18, 24], [19, 20], [19, 23], [19, 24], [20, 26], [21, 22], [21, 31], [24, 25], [25, 26], [27, 36], [29, 31], [30, 31], [32, 33], [33, 34], [35, 36]]

edge\_weights = [0.1735, 0.6209, 0.3642, 1.2801, 0.3569, 0.7754, 0.6705, 1.5606, 2.1042, 0.7184, 0.5224, 0.8369, 0.63, 0.3137, 0.5335, 0.4091, 0.1914, 0.3639, 2.5939, 2.9874, 0.5976, 2.0206, 0.2911, 0.2872, 0.435, 1.0524, 0.3438, 0.2126, 1.1519, 1.4614, 1.1499, 1.1881, 0.6254, 0.2957, 1.0537, 0.5257, 0.1737, 0.6307, 0.9428, 0.6434, 1.2828, 3.2181, 2.7392, 0.4576, 0.1614, 0.319, 0.2994, 0.0549, 0.5023, 1.5855, 0.1169, 0.2784, 0.2279, 1.8871, 0.4653, 0.5295, 0.2654, 0.2796]

controllers = [[4], [4, 15], [6, 14, 15], [0, 5, 14, 15], [2, 14, 15, 20, 31], [2, 8, 10, 14, 15, 22]]

switches = [0, 1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36]

all\_pairs\_1 = [[4, 0], [4, 1], [4, 2], [4, 3], [4, 5], [4, 6], [4, 7], [4, 8], [4, 9], [4, 10], [4, 11], [4, 12], [4, 13], [4, 14], [4, 15], [4, 16], [4, 17], [4, 18], [4, 19], [4, 20], [4, 21], [4, 22], [4, 23], [4, 24], [4, 25], [4, 26], [4, 27], [4, 28], [4, 29], [4, 30], [4, 31], [4, 32], [4, 33], [4, 34], [4, 35], [4, 36]]

bea\_val = 18

bea\_val\_list = [18, 18]

con\_swi = [[], []]

con\_dist = [[0.3642, 3.3516], [0.5377000000000001, 3.5251], [0.6705, 3.6579], [0.63, 3.2727], [0.4091, 3.3965], [0.1914, 3.1788], [0.4786, 3.4659999999999997], [0.3639, 3.3513], [0.5765, 3.5639000000000003], [1.4445999999999999, 4.432], [1.4573, 4.4447], [2.4001, 5.3875], [1.8803999999999998, 4.8678], [2.5939, 5.581300000000001], [1.7264, 4.7138], [1.6182999999999998, 4.605700000000001], [1.4505, 4.4379], [0.8139, 3.8013], [0.6525, 3.6399], [2.0181, 5.0055], [1.5158, 4.5032], [1.1329, 4.1203], [0.9929, 3.9802999999999997], [0.876, 3.8634], [0.5976, 3.585], [1.1635, 2.7392], [2.0206, 5.008], [2.6082, 5.5956], [1.1846, 4.172], [0.7211000000000001, 3.7085], [1.3889, 4.3763000000000005], [1.1928999999999998, 4.1803], [1.4583, 4.4456999999999995], [1.5074, 3.2466999999999997], [1.3914, 2.9671]]

con\_swi = [[0, 1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19], [20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36]]

bea\_val = 12

bea\_val\_list = [12, 12, 12]

con\_swi = [[], [], []]

con\_dist = [[0.5556, 2.9581, 3.3516], [0.7291, 3.1315999999999997, 3.5251], [0.8619, 3.2644, 3.6579], [0.8214, 3.2239, 3.2727], [0.1914, 2.5939, 2.9874], [0.6005, 3.003, 3.3965], [0.2872, 3.0725, 3.4659999999999997], [0.5553, 2.9578, 3.3513], [0.7679, 3.1704000000000003, 3.5639000000000003], [1.6360000000000001, 4.0385, 4.432], [1.6487, 4.0512, 4.4447], [2.5915, 4.994, 5.3875], [2.0718, 4.4742999999999995, 4.8678], [1.9178, 4.3203000000000005, 4.7138], [1.8097, 4.2122, 4.605700000000001], [1.6419000000000001, 4.0444, 4.4379], [1.0053, 3.4078, 3.8013], [0.8439, 3.2464, 3.6399], [1.8418999999999999, 4.612, 5.0055], [1.3396, 4.1097, 4.5032], [1.3243, 3.7268, 4.1203], [1.1843000000000001, 3.5868, 3.9802999999999997], [1.0674000000000001, 3.4699, 3.8634], [0.789, 3.1915, 3.585], [1.3549, 3.7574, 2.7392], [2.2119999999999997, 4.6145, 5.008], [2.5181, 5.1052, 5.5956], [1.0945, 3.6816000000000004, 4.172], [0.631, 3.2181, 3.7085], [1.5803, 3.9828, 4.3763000000000005], [1.3843, 3.7868000000000004, 4.1803], [1.6497000000000002, 4.0522, 4.4456999999999995], [1.6987999999999999, 4.1013, 3.2466999999999997], [1.5828, 3.9853, 2.9671]]

con\_swi = [[0, 1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12], [13, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26], [27, 28, 29, 30, 31, 32, 33, 34, 35, 36]]

bea\_val = 9

bea\_val\_list = [9, 9, 9, 9]

con\_swi = [[], [], [], []]

con\_dist = [[0.1735, 0.9468000000000001, 3.1315999999999997, 3.5251], [0.6209, 1.0796000000000001, 3.2644, 3.6579], [0.9942, 0.3137, 3.2239, 3.2727], [0.3642, 0.4091, 2.5939, 2.9874], [0.5556, 0.6005, 2.7853, 3.1788], [0.7007, 0.8877, 3.0725, 3.4659999999999997], [0.7281, 0.773, 2.9578, 3.3513], [0.9407, 0.9714, 3.1704000000000003, 3.5639000000000003], [1.8088, 1.0832000000000002, 4.0385, 4.432], [1.8215, 1.0958999999999999, 4.0512, 4.4447], [2.7643, 2.0387, 4.994, 5.3875], [2.2446, 1.6089000000000002, 4.4742999999999995, 4.8678], [2.0906, 2.1212999999999997, 4.3203000000000005, 4.7138], [1.9825, 1.2569000000000001, 4.2122, 4.605700000000001], [1.8147, 1.1989, 4.0444, 4.4379], [1.1781, 0.4525, 3.4078, 3.8013], [1.0167, 0.2911, 3.2464, 3.6399], [1.9424, 2.4272, 4.612, 5.0055], [1.7530999999999999, 1.9249, 4.1097, 4.5032], [1.4970999999999999, 0.7715000000000001, 3.7268, 4.1203], [1.3571, 0.7413000000000001, 3.5868, 3.9802999999999997], [1.2402, 0.6244000000000001, 3.4699, 3.8634], [0.9618, 0.34600000000000003, 3.1915, 3.585], [1.2801, 0.8472, 3.7574, 2.7392], [2.1814999999999998, 2.4297, 4.6145, 5.008], [2.2439999999999998, 3.0173, 5.1052, 5.5956], [0.8204, 1.5937000000000001, 3.6816000000000004, 4.172], [0.3569, 1.1302, 3.2181, 3.7085], [1.3393000000000002, 1.798, 3.9828, 4.3763000000000005], [1.1433, 1.602, 3.7868000000000004, 4.1803], [1.4087, 1.8674000000000002, 4.0522, 4.4456999999999995], [1.4578, 1.3547, 4.1013, 3.2466999999999997], [1.508, 1.0751, 3.9853, 2.9671]]

con\_swi = [[1, 2, 4, 6, 7, 8, 9, 16, 21], [3, 10, 11, 12, 13, 17, 18, 19, 20], [22, 23, 24, 25, 26, 27, 28, 29, 30], [31, 32, 33, 34, 35, 36]]

bea\_val = 7

bea\_val\_list = [7, 7, 7, 7, 7]

con\_swi = [[], [], [], [], []]

con\_dist = [[0.6209, 2.9581, 3.3516, 1.0167, 0.3569], [0.7944, 3.1315999999999997, 3.5251, 1.1902, 0.5304], [1.3005, 3.2239, 3.2727, 0.6048, 1.3511000000000002], [0.6705, 2.5939, 2.9874, 0.6525, 0.7211000000000001], [1.0796000000000001, 3.003, 3.3965, 0.2911, 1.1302], [0.8619, 2.7853, 3.1788, 0.8439, 0.631], [1.1491, 3.0725, 3.4659999999999997, 1.1311, 0.3438], [1.0344, 2.9578, 3.3513, 0.8928999999999999, 0.7787999999999999], [1.2469999999999999, 3.1704000000000003, 3.5639000000000003, 0.6802999999999999, 0.9914], [2.1151, 4.0385, 4.432, 0.7921, 2.1657], [2.1277999999999997, 4.0512, 4.4447, 0.8048, 2.1784], [3.0705999999999998, 4.994, 5.3875, 1.7475999999999998, 3.1212], [2.5509, 4.4742999999999995, 4.8678, 1.3178, 2.4528], [2.3968999999999996, 4.3203000000000005, 4.7138, 1.8301999999999998, 2.1412999999999998], [2.2888, 4.2122, 4.605700000000001, 0.9658, 2.3394000000000004], [2.121, 4.0444, 4.4379, 0.9077999999999999, 2.1716], [1.4844, 3.4078, 3.8013, 0.1614, 1.5350000000000001], [2.5633, 4.612, 5.0055, 2.3707, 1.5855], [2.1863, 4.1097, 4.5032, 1.8683999999999998, 1.3961999999999999], [1.8034, 3.7268, 4.1203, 0.4804, 1.854], [1.6634, 3.5868, 3.9802999999999997, 0.4502, 1.7140000000000002], [1.5465, 3.4699, 3.8634, 0.3333, 1.5971000000000002], [1.2681, 3.1915, 3.585, 0.0549, 1.3187000000000002], [1.3444, 3.7574, 2.7392, 1.1383, 1.637], [1.5606, 4.6145, 5.008, 2.6731, 2.5384], [2.1042, 5.1052, 5.5956, 3.2607, 1.8871], [1.4413, 3.6816000000000004, 4.172, 1.8371, 0.4635], [0.7184, 3.9828, 4.3763000000000005, 2.0414, 1.6962000000000002], [0.5224, 3.7868000000000004, 4.1803, 1.8454, 1.5002], [0.7878000000000001, 4.0522, 4.4456999999999995, 2.1108, 1.7656], [0.8369, 4.1013, 3.2466999999999997, 1.6458000000000002, 1.8147], [1.1165, 3.9853, 2.9671, 1.3662, 1.8649]]

con\_swi = [[13, 16, 17, 18, 19, 23, 24], [25, 26, 27, 28, 29, 30, 32], [33, 34, 35, 36], [3, 4, 5, 9, 10, 11, 12], [0, 1, 6, 7, 8, 21, 22]]

bea\_val = 6

bea\_val\_list = [6, 6, 6, 6, 6, 6]

con\_swi = [[], [], [], [], [], []]

con\_dist = [[0.6209, 0.7281, 1.8088, 2.9581, 3.3516, 1.7530999999999999], [0.7944, 0.9016, 1.9823, 3.1315999999999997, 3.5251, 1.9265999999999999], [1.3005, 0.9939, 1.3969, 3.2239, 3.2727, 2.1458], [0.6705, 0.3639, 1.4445999999999999, 2.5939, 2.9874, 1.5158], [1.0796000000000001, 0.773, 1.0832000000000002, 3.003, 3.3965, 1.9249], [0.8619, 0.5553, 1.636, 2.7853, 3.1788, 1.3396], [1.1491, 0.435, 1.9232, 3.0725, 3.4659999999999997, 1.0524], [1.2469999999999999, 0.2126, 1.4724, 3.1704000000000003, 3.5639000000000003, 1.1881], [2.1277999999999997, 1.6977, 0.2957, 4.0512, 4.4447, 2.6731999999999996], [3.0705999999999998, 2.6405, 1.0537, 4.994, 5.3875, 3.6159999999999997], [2.5509, 1.674, 0.5257, 4.4742999999999995, 4.8678, 2.6494999999999997], [2.3968999999999996, 1.3624999999999998, 2.6223, 4.3203000000000005, 4.7138, 2.338], [2.2888, 1.8587, 0.1737, 4.2122, 4.605700000000001, 2.8342], [2.121, 1.6909, 1.3877000000000002, 4.0444, 4.4379, 2.6664000000000003], [1.4844, 1.0543, 0.6307, 3.4078, 3.8013, 2.0298], [1.323, 0.8928999999999999, 0.7921, 3.2464, 3.6399, 1.8683999999999998], [2.5633, 1.6542, 3.1628, 4.612, 5.0055, 0.5023], [1.8034, 1.3733, 0.9497, 3.7268, 4.1203, 2.3487999999999998], [1.6634, 1.2333, 0.9301, 3.5868, 3.9802999999999997, 2.2088], [1.5465, 1.1164, 1.0470000000000002, 3.4699, 3.8634, 2.0919], [1.2681, 0.838, 0.847, 3.1915, 3.585, 1.8135], [1.3444, 1.5274, 1.9304000000000001, 3.7574, 2.7392, 2.6793], [1.5606, 2.3845, 3.4652, 4.6145, 5.008, 3.5364], [2.1042, 2.6658999999999997, 4.0528, 5.1052, 5.5956, 3.2832999999999997], [1.4413, 1.2423, 2.6292, 3.6816000000000004, 4.172, 1.8597], [0.9778, 0.7787999999999999, 2.1657, 3.2181, 3.7085, 1.3961999999999999], [0.7184, 1.7528000000000001, 2.8335, 3.9828, 4.3763000000000005, 2.9047], [0.5224, 1.5568, 2.6375, 3.7868000000000004, 4.1803, 2.7087000000000003], [0.7878000000000001, 1.8222, 2.9029000000000003, 4.0522, 4.4456999999999995, 2.9741000000000004], [0.8369, 1.8713, 2.4379, 4.1013, 3.2466999999999997, 3.0232], [1.1165, 1.7553, 2.1583, 3.9853, 2.9671, 2.9072]]

con\_swi = [[0, 1, 16, 20, 23, 24], [3, 4, 5, 6, 7, 9], [11, 12, 13, 17, 18, 19], [25, 26, 27, 28, 29, 30], [31, 32, 33, 34, 35, 36], [21]]

switches\_assigned = [[[0, 1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19], [20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36]], [[0, 1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12], [13, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26], [27, 28, 29, 30, 31, 32, 33, 34, 35, 36]], [[1, 2, 4, 6, 7, 8, 9, 16, 21], [3, 10, 11, 12, 13, 17, 18, 19, 20], [22, 23, 24, 25, 26, 27, 28, 29, 30], [31, 32, 33, 34, 35, 36]], [[13, 16, 17, 18, 19, 23, 24], [25, 26, 27, 28, 29, 30, 32], [33, 34, 35, 36], [3, 4, 5, 9, 10, 11, 12], [0, 1, 6, 7, 8, 21, 22]], [[0, 1, 16, 20, 23, 24], [3, 4, 5, 6, 7, 9], [11, 12, 13, 17, 18, 19], [25, 26, 27, 28, 29, 30], [31, 32, 33, 34, 35, 36], [21]]]

all\_pairs\_2 = [[4, 0], [4, 1], [4, 2], [4, 3], [4, 5], [4, 6], [4, 7], [4, 8], [4, 9], [4, 10], [4, 11], [4, 12], [4, 13], [4, 14], [4, 16], [4, 17], [4, 18], [4, 19], [15, 20], [15, 21], [15, 22], [15, 23], [15, 24], [15, 25], [15, 26], [15, 27], [15, 28], [15, 29], [15, 30], [15, 31], [15, 32], [15, 33], [15, 34], [15, 35], [15, 36]]

Length of all\_pairs\_2 = 35

all\_pairs\_3 = [[6, 0], [6, 1], [6, 2], [6, 3], [6, 4], [6, 5], [6, 7], [6, 8], [6, 9], [6, 10], [6, 11], [6, 12], [14, 13], [14, 16], [14, 17], [14, 18], [14, 19], [14, 20], [14, 21], [14, 22], [14, 23], [14, 24], [14, 25], [14, 26], [15, 27], [15, 28], [15, 29], [15, 30], [15, 31], [15, 32], [15, 33], [15, 34], [15, 35], [15, 36]]

all\_pairs\_4 = [[0, 1], [0, 2], [0, 4], [0, 6], [0, 7], [0, 8], [0, 9], [0, 16], [0, 21], [5, 3], [5, 10], [5, 11], [5, 12], [5, 13], [5, 17], [5, 18], [5, 19], [5, 20], [14, 22], [14, 23], [14, 24], [14, 25], [14, 26], [14, 27], [14, 28], [14, 29], [14, 30], [15, 31], [15, 32], [15, 33], [15, 34], [15, 35], [15, 36]]

all\_pairs\_5 = [[2, 13], [2, 16], [2, 17], [2, 18], [2, 19], [2, 23], [2, 24], [14, 25], [14, 26], [14, 27], [14, 28], [14, 29], [14, 30], [14, 32], [15, 33], [15, 34], [15, 35], [15, 36], [20, 3], [20, 4], [20, 5], [20, 9], [20, 10], [20, 11], [20, 12], [31, 0], [31, 1], [31, 6], [31, 7], [31, 8], [31, 21], [31, 22]]

all\_pairs\_6 = [[2, 0], [2, 1], [2, 16], [2, 20], [2, 23], [2, 24], [8, 3], [8, 4], [8, 5], [8, 6], [8, 7], [8, 9], [10, 11], [10, 12], [10, 13], [10, 17], [10, 18], [10, 19], [14, 25], [14, 26], [14, 27], [14, 28], [14, 29], [14, 30], [15, 31], [15, 32], [15, 33], [15, 34], [15, 35], [15, 36], [22, 21]]

number\_of\_edges = 58

Initial harmony memory = [[360, 974, 267, 958, 155, 88, 377, 457, 1044, 586, 467, 443, 682, 1122, 736, 823, 689, 969, 1131, 491, 887, 642, 968, 139, 674, 879, 1021, 886, 781, 1119, 121, 1086, 573, 1173, 819, 711, 964, 532, 712, 126, 1149, 951, 549, 1196, 505, 895, 1027, 723, 672, 367, 1064, 566, 774, 712, 1143, 760, 767, 14], [1072, 589, 436, 1116, 986, 88, 877, 360, 1031, 676, 82, 948, 189, 633, 397, 627, 202, 433, 440, 419, 1033, 426, 121, 537, 433, 492, 680, 14, 908, 621, 148, 992, 1026, 1155, 662, 270, 91, 626, 974, 617, 307, 379, 707, 986, 195, 360, 1002, 359, 820, 423, 355, 666, 400, 265, 283, 94, 67, 1150], [140, 321, 917, 929, 979, 362, 237, 1125, 241, 326, 27, 218, 469, 713, 760, 906, 696, 33, 565, 1070, 77, 1195, 226, 428, 1050, 960, 950, 773, 1084, 1195, 39, 1125, 273, 121, 641, 648, 198, 58, 730, 450, 31, 219, 436, 1054, 1182, 327, 924, 990, 1058, 714, 837, 869, 666, 1027, 1047, 596, 673, 51], [337, 541, 886, 197, 169, 1090, 1030, 280, 119, 523, 311, 7, 918, 458, 216, 372, 144, 733, 280, 697, 792, 524, 515, 456, 815, 1156, 762, 337, 87, 1190, 301, 934, 136, 203, 738, 493, 815, 832, 343, 111, 159, 693, 376, 682, 700, 216, 143, 838, 427, 1054, 455, 241, 273, 88, 1194, 991, 207, 517], [1067, 53, 503, 393, 998, 1017, 1187, 733, 1157, 538, 773, 501, 1045, 182, 512, 1092, 1199, 465, 163, 900, 616, 430, 259, 229, 511, 127, 447, 600, 1199, 151, 120, 749, 279, 960, 681, 654, 546, 902, 719, 693, 349, 375, 521, 760, 396, 788, 925, 326, 421, 899, 970, 548, 1181, 1064, 317, 602, 661, 137], [581, 525, 41, 667, 52, 1080, 431, 247, 99, 716, 658, 718, 759, 829, 338, 680, 581, 927, 730, 986, 471, 363, 591, 276, 774, 435, 178, 241, 130, 901, 487, 103, 573, 452, 1124, 960, 1015, 1123, 572, 81, 490, 703, 258, 1040, 1055, 167, 379, 553, 821, 134, 915, 258, 1103, 961, 157, 449, 682, 970], [691, 282, 380, 811, 1158, 547, 920, 659, 982, 334, 480, 661, 988, 76, 223, 592, 453, 247, 134, 836, 8, 451, 90, 1176, 1002, 933, 1155, 701, 941, 688, 195, 1060, 418, 1195, 527, 484, 838, 504, 863, 967, 727, 1025, 341, 515, 321, 986, 132, 715, 141, 759, 1063, 221, 96, 1092, 470, 65, 1010, 559], [5, 865, 766, 816, 766, 916, 500, 30, 157, 907, 497, 96, 690, 108, 1104, 96, 303, 164, 1025, 80, 792, 999, 726, 260, 353, 624, 919, 535, 1136, 758, 881, 984, 480, 983, 515, 721, 537, 1061, 1096, 607, 321, 632, 317, 859, 27, 1176, 309, 223, 858, 356, 687, 403, 633, 43, 1155, 1126, 9, 1195], [976, 668, 835, 715, 129, 699, 600, 1014, 466, 631, 292, 210, 1138, 596, 505, 768, 364, 67, 634, 957, 72, 395, 1, 1155, 952, 988, 513, 1177, 790, 401, 157, 840, 604, 633, 92, 806, 281, 65, 677, 283, 1151, 66, 531, 814, 262, 165, 501, 577, 89, 560, 706, 10, 396, 54, 742, 2, 371, 1180], [1012, 322, 1063, 87, 609, 1068, 175, 866, 244, 794, 67, 599, 99, 261, 221, 701, 618, 226, 209, 104, 581, 1063, 943, 860, 1100, 850, 408, 622, 321, 1064, 193, 414, 794, 886, 636, 93, 1043, 553, 893, 780, 614, 922, 682, 709, 1180, 976, 803, 711, 299, 100, 7, 927, 243, 503, 147, 172, 1017, 594]]

0

no\_of\_active\_edges = 36.0

total\_no\_of\_edges = 58

no\_of\_inactive\_edges = 22.0

1

no\_of\_active\_edges = 36.0

total\_no\_of\_edges = 58

no\_of\_inactive\_edges = 22.0

2

no\_of\_active\_edges = 36.0

total\_no\_of\_edges = 58

no\_of\_inactive\_edges = 22.0

3

no\_of\_active\_edges = 36.0

total\_no\_of\_edges = 58

no\_of\_inactive\_edges = 22.0

4

no\_of\_active\_edges = 36.0

total\_no\_of\_edges = 58

no\_of\_inactive\_edges = 22.0

5

no\_of\_active\_edges = 36.0

total\_no\_of\_edges = 58

no\_of\_inactive\_edges = 22.0

6

no\_of\_active\_edges = 36.0

total\_no\_of\_edges = 58

no\_of\_inactive\_edges = 22.0

7

no\_of\_active\_edges = 36.0

total\_no\_of\_edges = 58

no\_of\_inactive\_edges = 22.0

8

no\_of\_active\_edges = 36.0

total\_no\_of\_edges = 58

no\_of\_inactive\_edges = 22.0

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no\_of\_active\_edges = 36.0

total\_no\_of\_edges = 58

no\_of\_inactive\_edges = 22.0

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harmony\_memory = [[360, 974, 267, 958, 155, 88, 377, 457, 1044, 586, 467, 443, 682, 1122, 736, 823, 689, 969, 1131, 491, 887, 642, 968, 139, 674, 879, 1021, 886, 781, 1119, 121, 1086, 573, 1173, 819, 711, 964, 532, 712, 126, 1149, 951, 549, 1196, 505, 895, 1027, 723, 672, 367, 1064, 566, 774, 712, 1143, 760, 767, 14], [1072, 589, 436, 1116, 986, 88, 877, 360, 1031, 676, 82, 948, 189, 633, 397, 627, 202, 433, 440, 419, 1033, 426, 121, 537, 433, 492, 680, 14, 908, 621, 148, 992, 1026, 1155, 662, 270, 91, 626, 974, 617, 307, 379, 707, 986, 195, 360, 1002, 359, 820, 423, 355, 666, 400, 265, 283, 94, 67, 1150], [140, 321, 917, 929, 979, 362, 237, 1125, 241, 326, 27, 218, 469, 713, 760, 906, 696, 33, 565, 1070, 77, 1195, 226, 428, 1050, 960, 950, 773, 1084, 1195, 39, 1125, 273, 121, 641, 648, 198, 58, 730, 450, 31, 219, 436, 1054, 1182, 327, 924, 990, 1058, 714, 837, 869, 666, 1027, 1047, 596, 673, 51], [337, 541, 886, 197, 169, 1090, 1030, 280, 119, 523, 311, 7, 918, 458, 216, 372, 144, 733, 280, 697, 792, 524, 515, 456, 815, 1156, 762, 337, 87, 1190, 301, 934, 136, 203, 738, 493, 815, 832, 343, 111, 159, 693, 376, 682, 700, 216, 143, 838, 427, 1054, 455, 241, 273, 88, 1194, 991, 207, 517], [1067, 53, 503, 393, 998, 1017, 1187, 733, 1157, 538, 773, 501, 1045, 182, 512, 1092, 1199, 465, 163, 900, 616, 430, 259, 229, 511, 127, 447, 600, 1199, 151, 120, 749, 279, 960, 681, 654, 546, 902, 719, 693, 349, 375, 521, 760, 396, 788, 925, 326, 421, 899, 970, 548, 1181, 1064, 317, 602, 661, 137], [581, 525, 41, 667, 52, 1080, 431, 247, 99, 716, 658, 718, 759, 829, 338, 680, 581, 927, 730, 986, 471, 363, 591, 276, 774, 435, 178, 241, 130, 901, 487, 103, 573, 452, 1124, 960, 1015, 1123, 572, 81, 490, 703, 258, 1040, 1055, 167, 379, 553, 821, 134, 915, 258, 1103, 961, 157, 449, 682, 970], [691, 282, 380, 811, 1158, 547, 920, 659, 982, 334, 480, 661, 988, 76, 223, 592, 453, 247, 134, 836, 8, 451, 90, 1176, 1002, 933, 1155, 701, 941, 688, 195, 1060, 418, 1195, 527, 484, 838, 504, 863, 967, 727, 1025, 341, 515, 321, 986, 132, 715, 141, 759, 1063, 221, 96, 1092, 470, 65, 1010, 559], [5, 865, 766, 816, 766, 916, 500, 30, 157, 907, 497, 96, 690, 108, 1104, 96, 303, 164, 1025, 80, 792, 999, 726, 260, 353, 624, 919, 535, 1136, 758, 881, 984, 480, 983, 515, 721, 537, 1061, 1096, 607, 321, 632, 317, 859, 27, 1176, 309, 223, 858, 356, 687, 403, 633, 43, 1155, 1126, 9, 1195], [976, 668, 835, 715, 129, 699, 600, 1014, 466, 631, 292, 210, 1138, 596, 505, 768, 364, 67, 634, 957, 72, 395, 1, 1155, 952, 988, 513, 1177, 790, 401, 157, 840, 604, 633, 92, 806, 281, 65, 677, 283, 1151, 66, 531, 814, 262, 165, 501, 577, 89, 560, 706, 10, 396, 54, 742, 2, 371, 1180], [1012, 322, 1063, 87, 609, 1068, 175, 866, 244, 794, 67, 599, 99, 261, 221, 701, 618, 226, 209, 104, 581, 1063, 943, 860, 1100, 850, 408, 622, 321, 1064, 193, 414, 794, 886, 636, 93, 1043, 553, 893, 780, 614, 922, 682, 709, 1180, 976, 803, 711, 299, 100, 7, 927, 243, 503, 147, 172, 1017, 594]]

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total\_no\_of\_edges = 58

no\_of\_inactive\_edges = 22.0

y = [1.3476167287155636, 1.225606995110877, 1.0413439920007919, 0.9443212795266349, 0.552298914183143, 0.7254936063521903, 0.5851754520125912, 1.28518680974907, 0.23932261158459645, 1.2232004658004316, 1.4753772366403273, 1.1326952149241671, 0.956388154559109, 0.9916617582806952, 1.0156964033814566, 1.2333627476355014, 0.9493399219851396, 0.9612669086945895, 0.607060016254849, 0.2964952883109574, 0.9754404031131101, 0.8653268149951943, 1.212460786875193, 1.302309921550927, 1.3500051070947912, 1.2159596370397348, 0.6586818475247495, 0.4538007599909709, 1.3545790072326545, 0.6851926389368183, 1.3848812726883357, 1.4747215521848664, 1.4282354980688898, 1.1305001367446725, 0.9324371413666055, 0.8742361985390129, 0.3548501260995591, 1.1551570243580431, 0.6042364789649732, 1.334810188119808, 1.1174192934391973, -0.0910994577345342, 1.1881606927542117, 1.3450787762120002, 0.9410930469728218, 0.08209127936481586, 1.4117922414078792, 0.6020663071539423, 0.6743281728074582, 0.8893537063079072, 0.6784450287721504, 1.1345044481798072, 0.9690041183184408, 1.2726716145988777, 0.8584970910090066, 1.3676293394763324, 0.8078978423216706, 1.3143378699151709]

no\_of\_active\_edges = 36.0

total\_no\_of\_edges = 58

no\_of\_inactive\_edges = 22.0

y = [27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867, 27.54443261698867]

no\_of\_active\_edges = 36.0

total\_no\_of\_edges = 58

no\_of\_inactive\_edges = 22.0

scores = [0.4197868270019131, 0.4161265312451543, 0.38928278589687937, 0.37067579636796666, 0.3793103448275866, 0.4152714589984002, 0.38001356498409816, 0.3793431186783425, 0.37931034482758613, 0.3793103448275858]

best\_solution = [60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435, 60.230478195239435]

Max Energy Saving = 0.4197868270019131