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floor = math.floor ceil = math.ceil
Maze = Maze._index=MazeMaze.NORTH=90Maze.SOUTH=270Maze.EAST=0Maze.WEST=180
Maze.new = function(r, c) local i, j, row, cell local obj = setmetatable(obj,
Maze) obj.rows = r obj.cols = c obj:reset() return obj end
Maze.reset = function(self) local i, j, row, cell self.cells = for i = 1,self.rows
do row = for j = 1,self.cols do cell = visited=false, visitable=true, north=true,south=true,east=true,
west=true, meta="" table.insert(row, cell) end table.insert(self.cells, row) end
end
Maze.visitable = function(self, i, j) return self.cells[i] and self.cells[i][j] and
self.cells[i][j].visitable end
Maze.isVisitable = function(self, i, j) return self.cells[i] and self.cells[i][j] and
self.cells[i][j].visitable end
Maze.setVisitable = function(self, i, j, visitable) self.cells[i][j].visitable = vis-
itable self.cells[i][j].north = visitable self.cells[i][j].south = visitable self.cells[i][j].east
= visitable self.cells[i][j].west = visitable end
Maze.getMeta = function(self, i, j) return self.cells[i][j].meta end
Maze.setMeta = function(self, i, j, meta) self.cells[i][j].meta = meta end
Maze.create = function(self, start) local n, N, x, y, a, b, k, stack N = self.rows
* self.cols for i = 1,self.rows do for j = 1,self.cols do if not self.cells[i][j].visitable
then N = N - 1 end end end
start = start or x=1, y=1 x, y = start.x, start.y stack = table.insert(stack,
x=x, y=y) self.cells[y][x].visited = true visited = 1 while visited < N do x =
stack[stack].x y = stack[stack].y
n = if self.isVisitable(y+1, x) and not self.cells[y+1][x].visited then ta-
ble.insert(n, Maze.NORTH) end if self.isVisitable(y-1, x) and not self.cells[y-
1][x].visited then table.insert(n, Maze.SOUTH) end if self.isVisitable(y, x+1)
and not self.cells[y][x+1].visited then table.insert(n, Maze.EAST) end if self.isVisitable(y,
x-1) and not self.cells[y][x-1].visited then table.insert(n, Maze.WEST) end
if n == 0 then table.remove(stack) else k = n[math.random(n)] if k ==
Maze.NORTH then a, b = x, y+1 self.cells[y][x].north = false self.cells[b][a].south
= false elseif k == Maze.SOUTH then a, b = x, y-1 self.cells[y][x].south =
false self.cells[b][a].north = false elseif k == Maze.EAST then a, b = x+1, y
self.cells[y][x].east = false self.cells[b][a].west = false elseif k == Maze.WEST
then a, b = x-1, y self.cells[y][x].west = false self.cells[b][a].east = false end ta-
ble.insert(stack, x=a, y=b) self.cells[b][a].visited = true visited = visited + 1
end end end
m = Maze.new(70,55) for i = 1,m.rows do for j = 1,m.cols do m:setVisitable(i,
j, false) end end
- tree tree_data = 1, 1, 1, 3, 3, 3, 5, 5, 7, 7, 9, 11, 11, 13, 15, 17, 19, 23, 27, 21, 13, 15, 17, 17, 19, 21, 23, 27, 29, 33, 25, 19, 21, 21, 23, 25, 27, 29, 33, 35, 37, 39, 41, 43, 45, 47, 49, 51, 53, 55, 57, 59, 61, 63, 65, 67, 69, 71, 73, 75, 77, 79, 81, 83, 85, 87, 89, 91, 93, 95, 97, 99, 101, 103, 105, 107, 109, 111, 113, 115, 117, 119, 121, 123, 125, 127, 129, 131, 133, 135, 137, 139, 141, 143, 145, 147, 149, 151, 153, 155, 157, 159, 161, 163, 165, 167, 169, 171, 173, 175, 177, 179, 181, 183, 185, 187, 189, 191, 193, 195, 197, 199, 201, 203, 205, 207, 209, 211, 213, 215, 217, 219, 221, 223, 225, 227, 229, 231, 233, 235, 237, 239, 241, 243, 245, 247, 249, 251, 253, 255, 257, 259, 261, 263, 265, 267, 269, 271, 273, 275, 277, 279, 281, 283, 285, 287, 289, 291, 293, 295, 297, 299, 301, 303, 305, 307, 309, 311, 313, 315, 317, 319, 321, 323, 325, 327, 329, 331, 333, 335, 337, 339, 341, 343, 345, 347, 349, 351, 353, 355, 357, 359, 361, 363, 365, 367, 369, 371, 373, 375, 377, 379, 381, 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783, 785, 787, 789, 791, 793, 795, 797, 799, 801, 803, 805, 807, 809, 811, 813, 815, 817, 819, 821, 823, 825, 827, 829, 831, 833, 835, 837, 839, 841, 843, 845, 847, 849, 851, 853, 855, 857, 859, 861, 863, 865, 867, 869, 871, 873, 875, 877, 879, 881, 883, 885, 887, 889, 891, 893, 895, 897, 899, 901, 903, 905, 907, 909, 911, 913, 915, 917, 919, 921, 923, 925, 927, 929, 931, 933, 935, 937, 939, 941, 943, 945, 947, 949, 951, 953, 955, 957, 959, 961, 963, 965, 967, 969, 971, 973, 975, 977, 979, 981, 983, 985, 987, 989, 991, 993, 995, 997, 999, 1001, 1003, 1005, 1007, 1009, 1011, 1013, 1015, 1017, 1019, 1021, 1023, 1025, 1027, 1029, 1031, 1033, 1035, 1037, 1039, 1041, 1043, 1045, 1047, 1049, 1051, 1053, 1055, 1057, 1059, 1061, 1063, 1065, 1067, 1069, 1071, 1073, 1075, 1077, 1079, 1081, 1083, 1085, 1087, 1089, 1091, 1093, 1095, 1097, 1099, 1101, 1103, 1105, 1107, 1109, 1111, 1113, 1115, 1117, 1119, 1121, 1123, 1125, 1127, 1129, 1131, 1133, 1135, 1137, 1139, 1141, 1143, 1145, 1147, 1149, 1151, 1153, 1155, 1157, 1159, 1161, 1163, 1165, 1167, 1169, 1171, 1173, 1175, 1177, 1179, 1181, 1183, 1185, 1187, 1189, 1191, 1193, 1195, 1197, 1199, 1201, 1203, 1205, 1207, 1209, 1211, 1213, 1215, 1217, 1219, 1221, 1223, 1225, 1227, 1229, 1231, 1233, 1235, 1237, 1239, 1241, 1243, 1245, 1247, 1249, 1251, 1253, 1255, 1257, 1259, 1261, 1263, 1265, 1267, 1269, 1271, 1273, 1275, 1277, 1279, 1281, 1283, 1285, 1287, 1289, 1291, 1293, 1295, 1297, 1299, 1301, 1303, 1305, 1307, 1309, 1311, 1313, 1315, 1317, 1319, 1321, 1323, 1325, 1327, 1329, 1331, 1333, 1335, 1337, 1339, 1341, 1343, 1345, 1347, 1349, 1351, 1353, 1355, 1357, 1359, 1361, 1363, 1365, 1367, 1369, 1371, 1373, 1375, 1377, 1379, 1381, 1383, 1385, 1387, 1389, 1391, 1393, 1395, 1397, 1399, 1401, 1403, 1405, 1407, 1409, 1411, 1413, 1415, 1417, 1419, 1421, 1423, 1425, 1427, 1429, 1431, 1433, 1435, 1437, 1439, 1441, 1443, 1445, 1447, 1449, 1451, 1453, 1455, 1457, 1459, 1461, 1463, 1465, 1467, 1469, 1471, 1473, 1475, 1477, 1479, 1481, 1483, 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3477, 3479, 3481, 3483, 3485, 3487, 3489, 3491, 3493, 3495, 3497, 3499, 3501, 3503, 3505, 3507, 3509, 3511, 3513, 3515, 3517, 3519, 3521, 3523, 3525, 3527, 3529, 3531, 3533, 3535, 3537, 3539, 3541, 3543, 3545, 3547, 3549, 3551, 3553, 3555, 3557, 3559, 3561, 3563, 3565, 3567, 3569, 3571, 3573, 3575, 3577, 3579, 3581, 3583, 3585, 3587, 3589, 3591, 3593, 3595, 3597, 3599, 3601, 3603, 3605, 3607, 3609, 3611, 3613, 3615, 3617, 3619, 3621, 3623, 3625, 3627, 3629, 3631, 3633, 3635, 3637, 3639, 3641, 3643, 3645, 3647, 3649, 3651, 3653, 3655, 3657, 3659, 3661, 3663, 3665, 3667, 3669, 3671, 3673, 3675, 3677, 3679, 3681, 3683, 3685, 3687, 3689, 3691, 3693, 3695, 3697, 3699, 3701, 3703, 3705, 3707, 3709, 3711, 3713, 3715, 3717, 3719, 3721, 3723, 3725, 3727, 3729, 3731, 3733, 3735, 3737, 3739, 3741, 3743, 3745, 3747, 3749, 3751, 3753, 3755, 3757, 3759, 3761, 3763, 3765, 3767, 3769, 3771, 3773, 3775, 3777, 3779, 3781, 3783, 3785, 3787, 3789, 3791, 3793, 3795, 3797, 3799, 3801, 3803, 3805, 3807, 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