

Figure 1 displays five 5x5 grids representing the state of a 15-puzzle over time, from December 5th to January 2nd. Each grid shows the current arrangement of tiles (numbered 1-15) and the moves made (indicated by blue arrows) to reach that state. The grids are labeled with the date and the number of moves made (indicated by red numbers in circles).

- 5 Dec:** Initial state. Moves: 1 (1,1) to (1,2), 2 (1,2) to (1,3), 3 (1,3) to (1,4), 4 (1,4) to (1,5), 5 (1,5) to (2,5), 6 (2,5) to (2,4), 7 (2,4) to (2,3), 8 (2,3) to (2,2), 9 (2,2) to (2,1), 10 (2,1) to (3,1), 11 (3,1) to (3,2), 12 (3,2) to (3,3), 13 (3,3) to (3,4), 14 (3,4) to (3,5), 15 (3,5) to (4,5), 16 (4,5) to (4,4), 17 (4,4) to (4,3), 18 (4,3) to (4,2), 19 (4,2) to (4,1), 20 (4,1) to (5,1), 21 (5,1) to (5,2), 22 (5,2) to (5,3), 23 (5,3) to (5,4), 24 (5,4) to (5,5), 25 (5,5) to (4,5), 26 (4,5) to (4,4), 27 (4,4) to (4,3), 28 (4,3) to (4,2), 29 (4,2) to (4,1), 30 (4,1) to (3,1), 31 (3,1) to (3,2), 32 (3,2) to (3,3), 33 (3,3) to (3,4), 34 (3,4) to (3,5), 35 (3,5) to (2,5), 36 (2,5) to (2,4), 37 (2,4) to (2,3), 38 (2,3) to (2,2), 39 (2,2) to (2,1), 40 (2,1) to (1,1), 41 (1,1) to (1,2), 42 (1,2) to (1,3), 43 (1,3) to (1,4), 44 (1,4) to (1,5), 45 (1,5) to (2,5), 46 (2,5) to (2,4), 47 (2,4) to (2,3), 48 (2,3) to (2,2), 49 (2,2) to (2,1), 50 (2,1) to (1,1), 51 (1,1) to (1,2), 52 (1,2) to (1,3), 53 (1,3) to (1,4), 54 (1,4) to (1,5), 55 (1,5) to (2,5), 56 (2,5) to (2,4), 57 (2,4) to (2,3), 58 (2,3) to (2,2), 59 (2,2) to (2,1), 60 (2,1) to (1,1), 61 (1,1) to (1,2), 62 (1,2) to (1,3), 63 (1,3) to (1,4), 64 (1,4) to (1,5), 65 (1,5) to (2,5), 66 (2,5) to (2,4), 67 (2,4) to (2,3), 68 (2,3) to (2,2), 69 (2,2) to (2,1), 70 (2,1) to (1,1), 71 (1,1) to (1,2), 72 (1,2) to (1,3), 73 (1,3) to (1,4), 74 (1,4) to (1,5), 75 (1,5) to (2,5), 76 (2,5) to (2,4), 77 (2,4) to (2,3), 78 (2,3) to (2,2), 79 (2,2) to (2,1), 80 (2,1) to (1,1), 81 (1,1) to (1,2), 82 (1,2) to (1,3), 83 (1,3) to (1,4), 84 (1,4) to (1,5), 85 (1,5) to (2,5), 86 (2,5) to (2,4), 87 (2,4) to (2,3), 88 (2,3) to (2,2), 89 (2,2) to (2,1), 90 (2,1) to (1,1), 91 (1,1) to (1,2), 92 (1,2) to (1,3), 93 (1,3) to (1,4), 94 (1,4) to (1,5), 95 (1,5) to (2,5), 96 (2,5) to (2,4), 97 (2,4) to (2,3), 98 (2,3) to (2,2), 99 (2,2) to (2,1), 100 (2,1) to (1,1), 101 (1,1) to (1,2), 102 (1,2) to (1,3), 103 (1,3) to (1,4), 104 (1,4) to (1,5), 105 (1,5) to (2,5), 106 (2,5) to (2,4), 107 (2,4) to (2,3), 108 (2,3) to (2,2), 109 (2,2) to (2,1), 110 (2,1) to (1,1), 111 (1,1) to (1,2), 112 (1,2) to (1,3), 113 (1,3) to (1,4), 114 (1,4) to (1,5), 115 (1,5) to (2,5), 116 (2,5) to (2,4), 117 (2,4) to (2,3), 118 (2,3) to (2,2), 119 (2,2) to (2,1), 120 (2,1) to (1,1), 121 (1,1) to (1,2), 122 (1,2) to (1,3), 123 (1,3) to (1,4), 124 (1,4) to (1,5), 125 (1,5) to (2,5), 126 (2,5) to (2,4), 127 (2,4) to (2,3), 128 (2,3) to (2,2), 129 (2,2) to (2,1), 130 (2,1) to (1,1), 131 (1,1) to (1,2), 132 (1,2) to (1,3), 133 (1,3) to (1,4), 134 (1,4) to (1,5), 135 (1,5) to (2,5), 136 (2,5) to (2,4), 137 (2,4) to (2,3), 138 (2,3) to (2,2), 139 (2,2) to (2,1), 140 (2,1) to (1,1), 141 (1,1) to (1,2), 142 (1,2) to (1,3), 143 (1,3) to (1,4), 144 (1,4) to (1,5), 145 (1,5) to (2,5), 146 (2,5) to (2,4), 147 (2,4) to (2,3), 148 (2,3) to (2,2), 149 (2,2) to (2,1), 150 (2,1) to (1,1), 151 (1,1) to (1,2), 152 (1,2) to (1,3), 153 (1,3) to (1,4), 154 (1,4) to (1,5), 155 (1,5) to (2,5), 156 (2,5) to (2,4), 157 (2,4) to (2,3), 158 (2,3) to (2,2), 159 (2,2) to (2,1), 160 (2,1) to (1,1), 161 (1,1) to (1,2), 162 (1,2) to (1,3), 163 (1,3) to (1,4), 164 (1,4) to (1,5), 165 (1,5) to (2,5), 166 (2,5) to (2,4), 167 (2,4) to (2,3), 168 (2,3) to (2,2), 169 (2,2) to (2,1), 170 (2,1) to (1,1), 171 (1,1) to (1,2), 172 (1,2) to (1,3), 173 (1,3) to (1,4), 174 (1,4) to (1,5), 175 (1,5) to (2,5), 176 (2,5) to (2,4), 177 (2,4) to (2,3), 178 (2,3) to (2,2), 179 (2,2) to (2,1), 180 (2,1) to (1,1), 181 (1,1) to (1,2), 182 (1,2) to (1,3), 183 (1,3) to (1,4), 184 (1,4) to (1,5), 185 (1,5) to (2,5), 186 (2,5) to (2,4), 187 (2,4) to (2,3), 188 (2,3) to (2,2), 189 (2,2) to (2,1), 190 (2,1) to (1,1), 191 (1,1) to (1,2), 192 (1,2) to (1,3), 193 (1,3) to (1,4), 194 (1,4) to (1,5), 195 (1,5) to (2,5), 196 (2,5) to (2,4), 197 (2,4) to (2,3), 198 (2,3) to (2,2), 199 (2,2) to (2,1), 200 (2,1) to (1,1), 201 (1,1) to (1,2), 202 (1,2) to (1,3), 203 (1,3) to (1,4), 204 (1,4) to (1,5), 205 (1,5) to (2,5), 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