# Weighted Graph and Prim's Algorithms Report #13

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CS 303 Algorithms and Data Structures

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## 1. Problem Specification

The goal of this assignment is to implement a weighted graph and then implement a Prim's Algorithms implementing it.

## 2. Program Design

The first part of this assignment was basically to create the Graph class and print it adjacency list and for this I also created an Edge class and a Vertex class.

The following steps were required to develop this program:

a) Create the Graph class

The following methods were defined within the Graph, Edge and Vertex:

- a) Graph()
  - a. Empty Constructor
- b) Graph(BufferedReader reader)
  - a. Build a graph with an input file
- c) getWeight(int v, int w)
  - a. Returns the weight associated to vertex(v,w)
- d) toString()
  - a. prints the adjacency list

Then I had to implement the MSTPrim class

- a) MSTPrim(Graph G)
  - a. Starts the Prim algorithm and creates the MST
- b) prim(Graph G, int s)
  - a. Runs Prim's algorithm starting from vertex s
- c) scan(Graph G, int v)
  - a. Continue running Prim's algorithms scanning for vertex v
- d) edges()
  - a. Returns the edges from MST
- e) weight()
  - a. returns the sum of the weight
- f) MSTPrim2(Graph G, int w, int r)
  - a. Starts the Prim's algorithm according to the lab manual

The Scanner class provided by Java was used to read in the necessary values within the provided driver program. The println method of the System.out object was used to display the inputs and results for the provided driver program.

### 3. Testing Plan

For the first part of the assignment I just printed the adjacency list as required for MediumGraph.txt, LargeGraph.txt and XtraLargeGraph.txt.

For the second part of the assignment I printed the weight for mediumGraph.txt, LargeGraph.txt and XtraLargeGraph.txt.

### 4. Test Cases

For the first part we read the MediumGraph.txt file as an weighted graph and prints the adjacency list. As the output is very very big I will print only some random selected elements.

#### For mediumGraph.txt:

```
0: (0, 15, 0.05719), (0, 24, 0.10191), (0, 44, 0.06471), (0, 49, 0.04849), (0, 58, 0.09955), (0, 59, 0.10657), (0, 68, 0.11816), (0, 80, 0.06821), (0, 97, 0.07705), (0, 114, 0.0961), (0, 149, 0.09659), (0, 160, 0.11714), (0, 163, 0.09368), (0, 176, 0.08927), (0, 191, 0.10711), (0, 202, 0.04678), (0, 204, 0.05476), (0, 209, 0.09511), (0, 211, 0.08438), (0, 222, 0.07573), (0, 225, 0.02383),
```

34: (34, 53, 0.08565), (34, 56, 0.04399), (34, 73, 0.01812), (34, 120, 0.09075), (34, 145, 0.07784),

169: (169, 177, 0.08571), (169, 186, 0.05624), (169, 189, 0.08899), (169, 190, 0.0932), (169, 220, 0.10104),

207: (207, 210, 0.03158), (207, 212, 0.05667), (207, 214, 0.10119), (207, 219, 0.06878), (207, 221, 0.02902), (207, 244, 0.09218),

#### For LargeGraph.txt:

```
312: (312, 314, 0.02981), (312, 321, 0.03981), (312, 324, 0.02263), (312, 455, 0.05249), (312, 457, 0.06705), (312, 511, 0.04183), (312, 672, 0.05958), (312, 776, 0.06168), (312, 808, 0.05154), (312, 810, 0.07393), (312, 824, 0.02737), (312, 850, 0.07446), (312, 852, 0.06552), (312, 901, 0.04219), (312, 919, 0.0398),
```

523: (523, 556, 0.03519), (523, 570, 0.06568), (523, 581, 0.06818), (523, 668, 0.06395), (523, 821, 0.04145), (523, 874, 0.07081), (523, 886, 0.03713), (523, 894, 0.03622), (523, 936, 0.04322), (523, 965, 0.03079),

897: (897, 913, 0.03854), (897, 933, 0.0384), (897, 944, 0.03211), (897, 947, 0.03209), (897, 974, 0.05477), (897, 998, 0.05756),

### For XtraLargeGraph.txt:

7876: (7876, 8056, 0.01622), (7876, 8214, 0.00448), (7876, 8585, 0.01819), (7876, 8997, 0.00452), (7876, 9621, 0.0116), (7876, 9643, 0.01139), (7876, 9949, 0.00359),

7968: (7968, 8986, 0.01748), (7968, 9207, 0.01874), (7968, 9247, 0.01729), (7968, 9250, 0.01952), (7968, 9309, 0.01968), (7968, 9694, 0.00979),

9009: (9009, 9066, 0.00839), (9009, 9443, 0.01816), (9009, 9532, 0.01513),

For the second part we had to implement Prim's algorithm. These are some outputs:

### For mediumGraph.txt:

- 4 5 -> Weight: 0.11184
- 8 11 -> Weight: 0.04709
- 2 14 -> Weight: 0.08765
- 0 15 -> Weight: 0.05719
- 6 16 -> Weight: 0.04529
- 2 18 -> Weight: 0.07425
- 13 19 -> Weight: 0.08927
- 9 23 -> Weight: 0.03526
- 15 24 -> Weight: 0.04507
- 4 26 -> Weight: 0.08347
- 21 27 -> Weight: 0.01873
- 12 28 -> Weight: 0.06032
- 8 30 -> Weight: 0.03985
- 5 32 -> Weight: 0.11054
- 23 33 -> Weight: 0.06032
- 22 34 -> Weight: 0.03658
- 18 35 -> Weight: 0.11609
- 35 36 -> Weight: 0.08804
- 3 37 -> Weight: 0.08512
- 24 39 -> Weight: 0.07951
- 20 40 -> Weight: 0.07068
- 36 41 -> Weight: 0.05329

- 2 42 -> Weight: 0.11456
- 8 43 -> Weight: 0.09334
- 0 44 -> Weight: 0.06471
- 3 45 -> Weight: 0.11902
- 29 47 -> Weight: 0.02921
- 45 48 -> Weight: 0.11127
- 0 49 -> Weight: 0.04849
- 48 50 -> Weight: 0.09958
- 2 51 -> Weight: 0.05083
- 32 52 -> Weight: 0.07988
- 22 53 -> Weight: 0.07033
- 16 54 -> Weight: 0.07406
- 4 55 -> Weight: 0.06425
- 22 56 -> Weight: 0.01508
- 7 57 -> Weight: 0.06795
- 0 58 -> Weight: 0.09955
- 49 59 -> Weight: 0.08296
- 25 60 -> Weight: 0.03405
- 27 62 -> Weight: 0.07419
- 60 63 -> Weight: 0.06637
- 47 64 -> Weight: 0.10444
- 57 65 -> Weight: 0.0675
- 39 66 -> Weight: 0.0559
- 3 67 -> Weight: 0.09725
- 58 68 -> Weight: 0.04795
- 51 70 -> Weight: 0.0799
- 65 71 -> Weight: 0.06843
- 1 72 -> Weight: 0.06506
- 34 73 -> Weight: 0.01812
- 38 74 -> Weight: 0.06907
- 20 75 -> Weight: 0.02897
- 3 76 -> Weight: 0.08069
- 26 77 -> Weight: 0.03854
- 4 78 -> Weight: 0.02559
- 51 79 -> Weight: 0.06984
- 0 80 -> Weight: 0.06821
- 41 81 -> Weight: 0.11854
- 11 82 -> Weight: 0.03687
- 67 83 -> Weight: 0.07338
- 70 84 -> Weight: 0.08129
- 82 85 -> Weight: 0.04344
- 2 86 -> Weight: 0.0598
- 61 87 -> Weight: 0.05163

```
35 - 88 -> Weight: 0.07142
```

- 75 89 -> Weight: 0.03394
- 62 90 -> Weight: 0.08635
- 29 91 -> Weight: 0.06429
- 44 93 -> Weight: 0.06793
- 35 94 -> Weight: 0.06254
- 76 95 -> Weight: 0.0737
- 60 96 -> Weight: 0.0569
- 49 97 -> Weight: 0.03121
- 88 98 -> Weight: 0.08567
- 54 99 -> Weight: 0.08037
- 84 100 -> Weight: 0.09532
- 42 101 -> Weight: 0.09688
- 77 102 -> Weight: 0.02737
- 84 103 -> Weight: 0.05747
- 83 104 -> Weight: 0.08511
- 10 105 -> Weight: 0.11028
- 84 106 -> Weight: 0.11963
- 1 107 -> Weight: 0.07484
- 2 108 -> Weight: 0.09627
- 91 109 -> Weight: 0.06129
- 108 110 -> Weight: 0.06803
- 25 111 -> Weight: 0.05309
- 67 112 -> Weight: 0.11331
- 28 113 -> Weight: 0.05483
- 15 114 -> Weight: 0.09104
- 76 115 -> Weight: 0.03658
- 20 116 -> Weight: 0.02095
- 98 117 -> Weight: 0.11425
- 57 118 -> Weight: 0.08024
- 81 119 -> Weight: 0.08225
- 119 120 -> Weight: 0.10342
- 41 121 -> Weight: 0.07816
- 110 122 -> Weight: 0.05351
- 106 123 -> Weight: 0.11362
- 118 124 -> Weight: 0.063
- 101 125 -> Weight: 0.10521
- 109 126 -> Weight: 0.09332
- 89 127 -> Weight: 0.10682
- 112 128 -> Weight: 0.0996
- 14 129 -> Weight: 0.10737
- 1 130 -> Weight: 0.10203
- 84 131 -> Weight: 0.10014

```
92 - 132 -> Weight: 0.07972
```

- 14 133 -> Weight: 0.06649
- 81 134 -> Weight: 0.04508
- 86 135 -> Weight: 0.10345
- 112 136 -> Weight: 0.05632
- 119 137 -> Weight: 0.09676
- 77 138 -> Weight: 0.07171
- 122 139 -> Weight: 0.01217
- 117 140 -> Weight: 0.10873
- 86 141 -> Weight: 0.0564
- 124 142 -> Weight: 0.06118
- 131 143 -> Weight: 0.05854
- 97 144 -> Weight: 0.07138
- 119 145 -> Weight: 0.05361
- 134 146 -> Weight: 0.06821
- 129 147 -> Weight: 0.08531
- 125 148 -> Weight: 0.04208
- 15 149 -> Weight: 0.04256
- 72 150 -> Weight: 0.0821
- 52 151 -> Weight: 0.03422
- 143 152 -> Weight: 0.07831
- 3 153 -> Weight: 0.04799
- 142 154 -> Weight: 0.11701
- 124 155 -> Weight: 0.01487
- 110 156 -> Weight: 0.03963
- 125 157 -> Weight: 0.02917
- 121 158 -> Weight: 0.08749
- 112 159 -> Weight: 0.04347
- 44 160 -> Weight: 0.06268
- 120 161 -> Weight: 0.09789
- 147 162 -> Weight: 0.09416
- 24 163 -> Weight: 0.05034
- 150 164 -> Weight: 0.09115
- 68 165 -> Weight: 0.10769
- 133 166 -> Weight: 0.06778
- 117 167 -> Weight: 0.09427
- 93 168 -> Weight: 0.03641
- 150 169 -> Weight: 0.06638
- 121 170 -> Weight: 0.03464
- 165 171 -> Weight: 0.11685
- 165 172 -> Weight: 0.09828
- 107 173 -> Weight: 0.08976
- 84 174 -> Weight: 0.0277

```
143 - 175 -> Weight: 0.10421
```

- 160 176 -> Weight: 0.06571
- 72 177 -> Weight: 0.06434
- 98 178 -> Weight: 0.05183
- 79 179 -> Weight: 0.07431
- 165 180 -> Weight: 0.01756
- 135 181 -> Weight: 0.07362
- 41 182 -> Weight: 0.03878
- 137 183 -> Weight: 0.11008
- 181 184 -> Weight: 0.08764
- 144 185 -> Weight: 0.03018
- 177 186 -> Weight: 0.03537
- 168 187 -> Weight: 0.0408
- 184 188 -> Weight: 0.07566
- 72 189 -> Weight: 0.03706
- 150 190 -> Weight: 0.06182
- 160 191 -> Weight: 0.0541
- 103 192 -> Weight: 0.04287
- 84 193 -> Weight: 0.09844
- 164 194 -> Weight: 0.07229
- 142 195 -> Weight: 0.08901
- 108 196 -> Weight: 0.03132
- 172 197 -> Weight: 0.09121
- 121 198 -> Weight: 0.07031
- 60 199 -> Weight: 0.04868
- 72 200 -> Weight: 0.08158
- 185 201 -> Weight: 0.06956
- 0 202 -> Weight: 0.04678
- 72 203 -> Weight: 0.0347
- 202 204 -> Weight: 0.04207
- 196 205 -> Weight: 0.05718
- 66 206 -> Weight: 0.05154
- 156 207 -> Weight: 0.07567
- 187 208 -> Weight: 0.06557
- 24 209 -> Weight: 0.02802
- 156 210 -> Weight: 0.04409
- 15 211 -> Weight: 0.04
- 179 212 -> Weight: 0.09146
- 180 213 -> Weight: 0.03355
- 212 214 -> Weight: 0.09024
- 183 215 -> Weight: 0.03017
- 201 216 -> Weight: 0.11363
- 201 217 -> Weight: 0.11118

146 - 218 -> Weight: 0.06252 212 - 219 -> Weight: 0.08099 150 - 220 -> Weight: 0.04158 219 - 221 -> Weight: 0.06535 202 - 222 -> Weight: 0.0544 200 - 223 -> Weight: 0.09984 167 - 224 -> Weight: 0.07521 0 - 225 -> Weight: 0.02383 187 - 226 -> Weight: 0.0366 134 - 227 -> Weight: 0.03986 153 - 228 -> Weight: 0.05583 158 - 229 -> Weight: 0.09925 197 - 230 -> Weight: 0.09937 160 - 231 -> Weight: 0.06647 201 - 232 -> Weight: 0.03557 188 - 233 -> Weight: 0.08575 130 - 234 -> Weight: 0.11697 213 - 235 -> Weight: 0.09305 166 - 236 -> Weight: 0.09479 96 - 237 -> Weight: 0.06553 235 - 238 -> Weight: 0.07048 128 - 239 -> Weight: 0.01726 233 - 240 -> Weight: 0.07634 153 - 241 -> Weight: 0.04247 223 - 242 -> Weight: 0.10184 103 - 243 -> Weight: 0.05731 179 - 244 -> Weight: 0.0705 238 - 245 -> Weight: 0.06142 143 - 246 -> Weight: 0.0759 190 - 247 -> Weight: 0.0668 144 - 248 -> Weight: 0.01527 203 - 249 -> Weight: 0.04148 Final Weight: 15.43905

## For LargeGraph.txt:

2 - 3 -> Weight: 0.0749 0 - 8 -> Weight: 0.04315 7 - 9 -> Weight: 0.07146 10 - 12 -> Weight: 0.01754 2 - 16 -> Weight: 0.06945 5 - 22 -> Weight: 0.0621 18 - 29 -> Weight: 0.07323

- 29 31 -> Weight: 0.04676
- 25 32 -> Weight: 0.00981
- 34 36 -> Weight: 0.05088
- 30 37 -> Weight: 0.04492
- 14 38 -> Weight: 0.06901
- 33 41 -> Weight: 0.05512
- 38 44 -> Weight: 0.03717
- 7 45 -> Weight: 0.0505
- 32 47 -> Weight: 0.02629
- 15 48 -> Weight: 0.01885
- 16 49 -> Weight: 0.06001
- 37 50 -> Weight: 0.05461
- 25 51 -> Weight: 0.06174
- 1 55 -> Weight: 0.07
- 53 56 -> Weight: 0.02878
- 15 57 -> Weight: 0.05759
- 5 59 -> Weight: 0.00784
- 17 62 -> Weight: 0.02185
- 33 64 -> Weight: 0.04608
- 7 68 -> Weight: 0.07427
- 23 69 -> Weight: 0.03592
- 60 71 -> Weight: 0.03482
- 12 73 -> Weight: 0.06988
- 4 76 -> Weight: 0.0544
- 6 77 -> Weight: 0.02295
- 27 78 -> Weight: 0.07052
- 26 79 -> Weight: 0.04118
- 11 80 -> Weight: 0.03692
- 35 82 -> Weight: 0.05641
- 68 83 -> Weight: 0.05431
- 23 84 -> Weight: 0.01595
- 73 85 -> Weight: 0.06614
- 43 86 -> Weight: 0.0141
- 39 88 -> Weight: 0.06559
- 74 90 -> Weight: 0.01226
- 14 91 -> Weight: 0.06743
- 60 92 -> Weight: 0.0664
- 81 93 -> Weight: 0.07064
- 12 94 -> Weight: 0.05651
- 20 95 -> Weight: 0.0418
- 70 97 -> Weight: 0.04248
- 91 98 -> Weight: 0.07184
- 87 99 -> Weight: 0.0211

```
27 - 100 -> Weight: 0.0146
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- 71 101 -> Weight: 0.03328
- 66 103 -> Weight: 0.0486
- 23 105 -> Weight: 0.0188
- 101 106 -> Weight: 0.01986
- 37 107 -> Weight: 0.02497
- 39 108 -> Weight: 0.03504
- 21 109 -> Weight: 0.04754
- 11 110 -> Weight: 0.07492
- 78 111 -> Weight: 0.04636
- 92 113 -> Weight: 0.04923
- 89 114 -> Weight: 0.06737
- 65 115 -> Weight: 0.05568 80 - 116 -> Weight: 0.03328
- 78 117 -> Weight: 0.03033
- 20 118 -> Weight: 0.01873
- 8 119 -> Weight: 0.01701
- 55 120 -> Weight: 0.04915
- 84 121 -> Weight: 0.02889
- 57 122 -> Weight: 0.05943
- 94 123 -> Weight: 0.03587
- 102 124 -> Weight: 0.05981
- 92 125 -> Weight: 0.00803
- 87 126 -> Weight: 0.02621
- 115 127 -> Weight: 0.04991
- 126 128 -> Weight: 0.02701
- 58 129 -> Weight: 0.02704
- 59 130 -> Weight: 0.04948
- 79 131 -> Weight: 0.06448
- 122 132 -> Weight: 0.0306
- 79 133 -> Weight: 0.02782
- 110 134 -> Weight: 0.0587
- 103 135 -> Weight: 0.06688
- 104 136 -> Weight: 0.01776
- 41 137 -> Weight: 0.00173
- 39 138 -> Weight: 0.04112
- 21 139 -> Weight: 0.0426
- 124 140 -> Weight: 0.05965
- 43 141 -> Weight: 0.07194
- 66 142 -> Weight: 0.02254
- 75 143 -> Weight: 0.03718
- 31 144 -> Weight: 0.03023
- 3 145 -> Weight: 0.04887

```
63 - 146 -> Weight: 0.01419
```

- 137 147 -> Weight: 0.04061
- 51 148 -> Weight: 0.0079
- 1 149 -> Weight: 0.01007
- 4 150 -> Weight: 0.02492
- 94 151 -> Weight: 0.05435
- 97 152 -> Weight: 0.00666
- 69 153 -> Weight: 0.03995
- 143 154 -> Weight: 0.01943
- 151 155 -> Weight: 0.02589
- 141 156 -> Weight: 0.02773
- 46 157 -> Weight: 0.04228
- 131 158 -> Weight: 0.04965
- 110 159 -> Weight: 0.0183
- 120 160 -> Weight: 0.00697
- 73 162 -> Weight: 0.01657
- 112 163 -> Weight: 0.05107
- 90 164 -> Weight: 0.00875
- 114 165 -> Weight: 0.06091
- 83 166 -> Weight: 0.02625
- 75 167 -> Weight: 0.05312
- 22 168 -> Weight: 0.04198
- 52 169 -> Weight: 0.04733
- 117 170 -> Weight: 0.0393
- 65 171 -> Weight: 0.0375
- 171 172 -> Weight: 0.03416
- 153 174 -> Weight: 0.03048
- 99 175 -> Weight: 0.02563
- 70 176 -> Weight: 0.03621
- 161 177 -> Weight: 0.05784
- 51 178 -> Weight: 0.02629
- 35 179 -> Weight: 0.03764
- 54 180 -> Weight: 0.01628
- 48 181 -> Weight: 0.04926
- 29 182 -> Weight: 0.01675
- 68 183 -> Weight: 0.02808
- 181 184 -> Weight: 0.02618
- 7 185 -> Weight: 0.0106
- 86 186 -> Weight: 0.04622
- 171 188 -> Weight: 0.02314
- 113 189 -> Weight: 0.02807
- 112 190 -> Weight: 0.04001
- 77 191 -> Weight: 0.06774

```
146 - 192 -> Weight: 0.02752
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- 76 193 -> Weight: 0.04379
- 51 194 -> Weight: 0.06641
- 165 195 -> Weight: 0.02556
- 180 196 -> Weight: 0.03985
- 102 197 -> Weight: 0.01688
- 173 198 -> Weight: 0.02745
- 76 199 -> Weight: 0.00774
- 186 200 -> Weight: 0.03369
- 102 201 -> Weight: 0.04997
- 18 202 -> Weight: 0.00817
- 169 203 -> Weight: 0.02348
- 161 204 -> Weight: 0.03248
- 122 205 -> Weight: 0.04602
- 57 206 -> Weight: 0.05305
- 47 207 -> Weight: 0.01773
- 185 208 -> Weight: 0.03665
- 135 209 -> Weight: 0.01849
- 128 210 -> Weight: 0.0416
- 19 211 -> Weight: 0.04572
- 74 212 -> Weight: 0.03072
- 84 213 -> Weight: 0.01509
- 131 214 -> Weight: 0.0477
- 205 215 -> Weight: 0.02949
- 205 215 > Neight. 0.025+.
- 93 216 -> Weight: 0.02528
- 172 217 -> Weight: 0.05309
- 158 219 -> Weight: 0.05466
- 96 220 -> Weight: 0.06621
- 156 221 -> Weight: 0.01711
- 220 222 -> Weight: 0.07305
- 35 223 -> Weight: 0.0196
- 98 224 -> Weight: 0.02601
- 134 225 -> Weight: 0.05032
- 211 226 -> Weight: 0.03611
- 187 227 -> Weight: 0.02454
- 59 228 -> Weight: 0.04828
- 63 230 -> Weight: 0.03676
- 62 231 -> Weight: 0.03137
- 128 232 -> Weight: 0.01326
- 220 233 -> Weight: 0.01542
- 50 234 -> Weight: 0.04569
- 176 235 -> Weight: 0.04306
- 19 236 -> Weight: 0.01536

- 229 237 -> Weight: 0.07313
- 49 238 -> Weight: 0.03949
- 23 239 -> Weight: 0.00579
- 110 240 -> Weight: 0.0252
- 102 241 -> Weight: 0.0243
- 18 242 -> Weight: 0.03682
- 2 243 -> Weight: 0.01971
- 136 244 -> Weight: 0.01899
- 223 245 -> Weight: 0.03191
- 142 246 -> Weight: 0.00804
- 72 247 -> Weight: 0.03583
- 47 248 -> Weight: 0.0131
- 29 249 -> Weight: 0.02196
- 133 250 -> Weight: 0.0297
- 180 251 -> Weight: 0.04049
- 191 252 -> Weight: 0.03395
- 203 253 -> Weight: 0.02627
- 96 254 -> Weight: 0.04056
- 248 255 -> Weight: 0.03525
- 100 256 -> Weight: 0.02651
- 100 250 > Netgitt. 0.02051
- 145 257 -> Weight: 0.01731
- 238 258 -> Weight: 0.0106
- 83 259 -> Weight: 0.02736
- 5 260 -> Weight: 0.02521
- 174 261 -> Weight: 0.01446
- 151 262 -> Weight: 0.06456
- 70 263 -> Weight: 0.02307
- 182 264 -> Weight: 0.0222
- 60 265 -> Weight: 0.01112
- 244 266 -> Weight: 0.01645
- 108 267 -> Weight: 0.03795
- 2 268 -> Weight: 0.03238
- 206 269 -> Weight: 0.05087
- 90 270 -> Weight: 0.03088
- 238 271 -> Weight: 0.0357
- 257 272 -> Weight: 0.04045
- 17 273 -> Weight: 0.01546
- 217 274 -> Weight: 0.02528
- 254 275 -> Weight: 0.04254
- 136 276 -> Weight: 0.01328
- 188 277 -> Weight: 0.01601
- 252 278 -> Weight: 0.05244
- 236 279 -> Weight: 0.0107

- 71 280 -> Weight: 0.01494
- 221 281 -> Weight: 0.03636
- 166 282 -> Weight: 0.04782
- 96 283 -> Weight: 0.00978
- 8 284 -> Weight: 0.00905
- 22 285 -> Weight: 0.02681
- 109 286 -> Weight: 0.06553
- 2 287 -> Weight: 0.03111
- 194 288 -> Weight: 0.05775
- 246 289 -> Weight: 0.03659
- 36 290 -> Weight: 0.0462
- 89 291 -> Weight: 0.01536
- 248 292 -> Weight: 0.01827
- 54 293 -> Weight: 0.01749
- 241 294 -> Weight: 0.05305
- 229 295 -> Weight: 0.05401
- 218 296 -> Weight: 0.02632
- 12 297 -> Weight: 0.0082
- 240 298 -> Weight: 0.01226
- 127 299 -> Weight: 0.01784
- 134 300 -> Weight: 0.03843
- 285 301 -> Weight: 0.0335
- 165 302 -> Weight: 0.01935
- 288 303 -> Weight: 0.00816
- 194 304 -> Weight: 0.00535
- 34 305 -> Weight: 0.01028
- 252 306 -> Weight: 0.01065
- 227 307 -> Weight: 0.01747
- 265 308 -> Weight: 0.02426
- 246 309 -> Weight: 0.02121
- 214 310 -> Weight: 0.01461
- 186 311 -> Weight: 0.00136
- 52 312 -> Weight: 0.02347
- 19 313 -> Weight: 0.01896
- 312 314 -> Weight: 0.02981
- 295 315 -> Weight: 0.05442
- 95 316 -> Weight: 0.02121
- 123 317 -> Weight: 0.04496
- 150 318 -> Weight: 0.03637
- 129 319 -> Weight: 0.05203
- 1 320 -> Weight: 0.07173
- 52 321 -> Weight: 0.02587
- 144 322 -> Weight: 0.04697

```
81 - 323 -> Weight: 0.01702
```

- 203 324 -> Weight: 0.01341
- 110 325 -> Weight: 0.04089
- 90 326 -> Weight: 0.02726
- 237 327 -> Weight: 0.06363
- 283 328 -> Weight: 0.04238
- 315 329 -> Weight: 0.04579
- 150 330 -> Weight: 0.01087
- 103 331 -> Weight: 0.04814
- 38 332 -> Weight: 0.03993
- 238 333 -> Weight: 7.7E-4
- 21 334 -> Weight: 0.007
- 42 335 -> Weight: 0.03854
- 60 336 -> Weight: 0.02511
- 284 337 -> Weight: 0.01667
- 83 338 -> Weight: 0.05554
- 85 339 -> Weight: 0.02462
- 5 340 -> Weight: 0.01895
- 127 341 -> Weight: 0.02208
- 236 342 -> Weight: 0.00742
- 276 343 -> Weight: 0.04896
- 131 344 -> Weight: 0.02508
- 67 345 -> Weight: 0.02019
- 167 346 -> Weight: 0.03548
- 336 347 -> Weight: 0.0414
- 16 348 -> Weight: 0.03054
- 107 349 -> Weight: 0.02103
- 68 350 -> Weight: 0.00706
- 332 351 -> Weight: 0.01816
- 64 352 -> Weight: 0.02903
- 128 353 -> Weight: 0.01876
- 89 354 -> Weight: 0.05246
- 13 355 -> Weight: 0.03285
- 193 356 -> Weight: 0.01798
- 48 357 -> Weight: 0.02157
- 337 358 -> Weight: 0.01911
- 76 359 -> Weight: 0.03315
- 163 360 -> Weight: 0.01597
- 360 361 -> Weight: 0.01273
- 53 362 -> Weight: 0.01536
- 252 363 -> Weight: 0.03472
- 15 364 -> Weight: 0.03075
- 360 365 -> Weight: 0.01278

```
71 - 366 -> Weight: 0.00555
```

- 331 367 -> Weight: 0.05472
- 112 368 -> Weight: 0.03516
- 366 369 -> Weight: 0.02562
- 122 370 -> Weight: 0.03107
- 251 371 -> Weight: 0.03567
- 233 372 -> Weight: 0.04033
- 57 373 -> Weight: 0.00746
- 173 374 -> Weight: 0.04561
- 159 375 -> Weight: 0.01996
- 180 376 -> Weight: 0.03814
- 192 377 -> Weight: 0.01021
- 266 378 -> Weight: 0.00467
- 198 379 -> Weight: 0.02785
- 316 380 -> Weight: 0.0102
- 59 381 -> Weight: 0.01556
- 49 382 -> Weight: 0.03261
- 86 383 -> Weight: 0.05014
- 370 384 -> Weight: 0.01329
- 278 385 -> Weight: 0.04987
- 53 386 -> Weight: 0.01189
- 217 387 -> Weight: 0.01088
- 178 388 -> Weight: 0.02609
- 7 389 -> Weight: 0.02442
- 26 390 -> Weight: 0.0206
- 266 391 -> Weight: 0.00856
- 43 392 -> Weight: 0.02796
- 206 393 -> Weight: 0.03458
- 302 394 -> Weight: 0.00674
- 246 395 -> Weight: 0.04111
- 295 396 -> Weight: 0.05271
- 65 397 -> Weight: 0.02014
- 45 398 -> Weight: 0.02825
- 230 399 -> Weight: 0.03229
- 345 400 -> Weight: 0.00976
- 213 401 -> Weight: 0.02679
- 291 402 -> Weight: 0.02727
- 138 403 -> Weight: 0.01408
- 182 404 -> Weight: 0.0177
- 257 405 -> Weight: 0.03084
- 79 406 -> Weight: 0.01827
- 361 407 -> Weight: 0.02136
- 371 408 -> Weight: 0.05905

```
261 - 409 -> Weight: 0.0175
```

- 223 410 -> Weight: 0.01621
- 226 411 -> Weight: 0.01548
- 399 412 -> Weight: 0.01713
- 282 413 -> Weight: 0.02466
- 197 414 -> Weight: 0.04132
- 88 415 -> Weight: 0.03997
- 282 416 -> Weight: 0.03056
- 311 417 -> Weight: 0.00321
- 278 418 -> Weight: 0.02417
- 112 419 -> Weight: 0.02488
- 0 420 -> Weight: 0.03426
- 198 421 -> Weight: 0.01674
- 392 422 -> Weight: 0.04948
- 402 423 -> Weight: 0.01009
- 19 424 -> Weight: 0.02284
- 26 425 -> Weight: 0.04032
- 273 426 -> Weight: 0.0193
- 381 427 -> Weight: 0.01864
- 91 428 -> Weight: 0.03028
- 175 429 -> Weight: 0.0524
- 215 430 -> Weight: 0.05587
- 274 424 W : Lt 0 04573
- 274 431 -> Weight: 0.04572
- 31 432 -> Weight: 0.02031
- 250 433 -> Weight: 0.03044 356 - 434 -> Weight: 0.02657
- 275 435 -> Weight: 0.00349
- 13 436 -> Weight: 0.06942
- 266 437 -> Weight: 0.01495
- 39 438 -> Weight: 0.00751
- 326 439 -> Weight: 0.02211
- 357 440 -> Weight: 0.01939
- 120 441 -> Weight: 0.00931
- 61 442 -> Weight: 0.00719
- 168 443 -> Weight: 0.00673
- 165 444 -> Weight: 0.01702
- 397 445 -> Weight: 0.02155
- 368 446 -> Weight: 0.01602
- 89 447 -> Weight: 0.02883
- 66 448 -> Weight: 0.01495
- 132 449 -> Weight: 0.04126
- 218 450 -> Weight: 0.04021
- 393 451 -> Weight: 0.0196

```
238 - 452 -> Weight: 0.02145
```

- 59 453 -> Weight: 0.0135
- 272 454 -> Weight: 0.01212
- 203 455 -> Weight: 0.01901
- 24 456 -> Weight: 0.03534
- 419 457 -> Weight: 0.01232
- 240 458 -> Weight: 0.01044
- 148 459 -> Weight: 0.00459
- 93 460 -> Weight: 0.03622
- 147 461 -> Weight: 0.06535
- 352 462 -> Weight: 0.01363
- 389 463 -> Weight: 0.01184
- 443 464 -> Weight: 0.01671
- 157 465 -> Weight: 0.03277
- 290 466 -> Weight: 0.03807
- 303 467 -> Weight: 0.026
- 161 468 -> Weight: 0.00849
- 101 469 -> Weight: 0.01664
- 166 470 -> Weight: 0.019
- 216 471 -> Weight: 0.02998
- 65 472 -> Weight: 0.01524
- 356 473 -> Weight: 0.03644
- 118 474 -> Weight: 0.05666
- 2 475 -> Weight: 0.00978
- 235 476 -> Weight: 0.04825
- 315 477 -> Weight: 0.04449
- 294 478 -> Weight: 0.02627
- 396 479 -> Weight: 0.00885
- 212 480 -> Weight: 0.02142
- 56 481 -> Weight: 0.03866
- 191 482 -> Weight: 0.01562
- 293 483 -> Weight: 0.00874
- 201 484 -> Weight: 0.01854
- 350 485 -> Weight: 0.03038
- 431 486 -> Weight: 0.05043
- 219 487 -> Weight: 0.02739
- 219 488 -> Weight: 0.01993
- 15 489 -> Weight: 0.01998
- 423 490 -> Weight: 0.04043
- 291 491 -> Weight: 0.01067
- 113 492 -> Weight: 0.03516
- 322 493 -> Weight: 0.00736
- 483 494 -> Weight: 0.02066

```
310 - 495 -> Weight: 0.03015
```

- 110 496 -> Weight: 0.00473
- 432 497 -> Weight: 0.0168
- 127 498 -> Weight: 0.02144
- 153 499 -> Weight: 0.0041
- 301 500 -> Weight: 0.02051
- 265 501 -> Weight: 0.01546
- 425 502 -> Weight: 0.0247
- 464 503 -> Weight: 0.01702
- 495 504 -> Weight: 0.01491
- 37 505 -> Weight: 0.01398
- 408 506 -> Weight: 0.02766
- 418 507 -> Weight: 0.0168
- 221 508 -> Weight: 0.01636
- 94 509 -> Weight: 0.01437
- 245 510 -> Weight: 0.00695
- 253 511 -> Weight: 0.0157
- 100 512 -> Weight: 0.00329
- 410 513 -> Weight: 0.00748
- 9 514 -> Weight: 0.04843
- 415 515 -> Weight: 0.02519
- 256 516 -> Weight: 0.02032
- 348 517 -> Weight: 0.00705
- 444 518 -> Weight: 0.02088
- 367 519 -> Weight: 0.02934
- 501 515 > Helghe. 0.0255
- 515 520 -> Weight: 0.01906
- 247 521 -> Weight: 0.026 470 - 522 -> Weight: 0.01405
- 422 523 -> Weight: 0.03306
- 364 524 -> Weight: 0.02052
- 46 525 -> Weight: 0.03412
- 222 526 -> Weight: 0.04694
- 170 527 -> Weight: 0.00774
- 207 528 -> Weight: 0.03133
- 400 529 -> Weight: 0.006
- 80 530 -> Weight: 0.00999
- 73 531 -> Weight: 0.02934
- 161 532 -> Weight: 0.01962
- 456 533 -> Weight: 0.03793
- 411 534 -> Weight: 0.00743
- 473 535 -> Weight: 0.03008
- 117 536 -> Weight: 0.04089
- 228 537 -> Weight: 0.0272

```
44 - 538 -> Weight: 0.02473
```

- 18 539 -> Weight: 0.01009
- 396 540 -> Weight: 0.01599
- 218 541 -> Weight: 0.02641
- 397 542 -> Weight: 0.02093
- 144 543 -> Weight: 0.0096
- 246 544 -> Weight: 0.0164
- 440 545 -> Weight: 0.02482
- 490 546 -> Weight: 0.02213
- 408 547 -> Weight: 0.01644
- 510 548 -> Weight: 0.02647
- 118 549 -> Weight: 0.03811
- 426 550 -> Weight: 0.02299
- 176 551 -> Weight: 0.01974
- 272 552 -> Weight: 0.00489
- 204 FF2 W-1-1-1 0 01606
- 204 553 -> Weight: 0.01696
- 332 554 -> Weight: 0.01724
- 269 555 -> Weight: 0.01534
- 523 556 -> Weight: 0.03519
- 223 557 -> Weight: 0.00595
- 0 558 -> Weight: 0.01791
- 281 559 -> Weight: 0.03057
- 72 560 -> Weight: 0.03957
- 348 561 -> Weight: 0.00815
- 145 562 -> Weight: 0.00516
- 33 563 -> Weight: 0.02712
- 429 564 -> Weight: 0.03239
- 48 565 -> Weight: 0.00401
- 93 566 -> Weight: 0.02496
- 226 567 -> Weight: 0.0242
- 521 568 -> Weight: 0.01937
- 356 569 -> Weight: 0.01362
- 141 570 -> Weight: 0.00739
- 234 571 -> Weight: 0.01679
- 228 572 -> Weight: 0.02465
- 488 573 -> Weight: 0.01627
- 418 574 -> Weight: 0.02728
- 435 575 -> Weight: 0.03756
- 119 576 -> Weight: 0.00652
- 346 577 -> Weight: 0.01768
- 61 578 -> Weight: 0.03979
- 377 579 -> Weight: 0.02445
- 401 580 -> Weight: 0.01998

```
454 - 581 -> Weight: 0.01366
```

- 159 582 -> Weight: 0.00698
- 228 583 -> Weight: 0.01383
- 27 584 -> Weight: 0.0221
- 114 585 -> Weight: 0.02968
- 212 586 -> Weight: 0.02364
- 208 587 -> Weight: 0.02814
- 380 588 -> Weight: 0.00591
- 30 589 -> Weight: 0.02029
- 303 590 -> Weight: 0.02448
- 483 591 -> Weight: 0.0094
- 149 592 -> Weight: 0.02581
- 286 593 -> Weight: 0.00875
- 85 594 -> Weight: 0.02433
- 130 595 -> Weight: 0.01625
- 207 596 -> Weight: 0.02338
- 229 597 -> Weight: 0.0185
- 579 598 -> Weight: 0.00969
- 377 599 -> Weight: 0.0281
- 520 600 -> Weight: 0.04656
- 435 601 -> Weight: 0.01919
- 287 602 -> Weight: 0.00738
- 49 603 -> Weight: 0.00856
- 466 604 -> Weight: 0.03785
- 395 605 -> Weight: 0.02458
- 465 606 -> Weight: 0.01791
- 343 607 -> Weight: 0.04514
- 114 608 -> Weight: 0.01214
- 338 609 -> Weight: 0.00563
- 487 610 -> Weight: 0.01253
- 65 611 -> Weight: 0.01425
- 598 612 -> Weight: 0.01714
- 370 613 -> Weight: 0.02958
- 484 614 -> Weight: 0.00317
- 469 615 -> Weight: 0.00719
- 109 616 -> Weight: 0.02626
- 42 617 -> Weight: 0.02495
- 605 618 -> Weight: 0.01527
- 213 619 -> Weight: 0.02123
- 106 620 -> Weight: 0.02459
- 269 621 -> Weight: 0.01884
- 200 622 -> Weight: 0.00525
- 456 623 -> Weight: 0.02086

```
401 - 624 -> Weight: 0.02186
```

- 519 625 -> Weight: 0.02094
- 373 626 -> Weight: 0.01789
- 504 627 -> Weight: 0.0184
- 294 628 -> Weight: 0.0191
- 127 629 -> Weight: 0.01688
- 426 630 -> Weight: 0.00661
- 436 631 -> Weight: 0.03868
- 277 632 -> Weight: 0.02336
- 296 633 -> Weight: 0.02342
- 211 634 -> Weight: 0.01082
- 516 635 -> Weight: 0.02956
- 600 636 -> Weight: 0.03194
- 79 637 -> Weight: 0.02552
- 11 638 -> Weight: 0.01942
- 281 639 -> Weight: 0.01577
- 30 640 -> Weight: 0.00637
- 102 641 -> Weight: 0.00592
- 20 642 -> Weight: 0.006
- 154 643 -> Weight: 0.01982
- 139 644 -> Weight: 0.01708
- 91 645 -> Weight: 0.01957
- 429 646 -> Weight: 0.02321
- 521 647 -> Weight: 0.00689
- 227 648 -> Weight: 0.03335
- 611 649 -> Weight: 0.03533
- 598 650 -> Weight: 0.03878
- 58 651 -> Weight: 0.02916
- 237 652 -> Weight: 0.02101
- 140 653 -> Weight: 0.03397
- 585 654 -> Weight: 0.01576
- 413 655 -> Weight: 0.0181
- 10 656 -> Weight: 0.01064
- 289 657 -> Weight: 0.00821
- 318 658 -> Weight: 0.03715
- 526 659 -> Weight: 0.03505
- 649 660 -> Weight: 0.03569
- 267 661 -> Weight: 0.00605
- 439 662 -> Weight: 0.01298
- 220 663 -> Weight: 0.02533
- 563 664 -> Weight: 0.01212
- 369 665 -> Weight: 0.00476
- 528 666 -> Weight: 0.02476

```
231 - 667 -> Weight: 0.0139
```

- 87 668 -> Weight: 0.02919
- 331 669 -> Weight: 0.03077
- 194 670 -> Weight: 0.04226
- 385 671 -> Weight: 0.02191
- 643 672 -> Weight: 0.02405
- 109 673 -> Weight: 0.04088
- 162 674 -> Weight: 0.02445
- 514 675 -> Weight: 0.01448
- 292 676 -> Weight: 0.02881
- 368 677 -> Weight: 0.02422
- 69 678 -> Weight: 0.02015
- 58 679 -> Weight: 0.01397
- 123 680 -> Weight: 0.02542
- 540 681 -> Weight: 0.03631
- 184 682 -> Weight: 0.01764
- 373 683 -> Weight: 0.01793
- 263 684 -> Weight: 0.01643
- 458 685 -> Weight: 0.01826
- 113 686 -> Weight: 0.01529
- 234 687 -> Weight: 0.0405
- 26 688 -> Weight: 0.00285
- 20 000 -> Weight. 0.00203
- 687 689 -> Weight: 0.03419
- 77 690 -> Weight: 0.02185
- 588 691 -> Weight: 0.03091
- 343 692 -> Weight: 0.03878
- 24 693 -> Weight: 0.01723
- 599 694 -> Weight: 0.0162
- 439 695 -> Weight: 0.00524
- 526 696 -> Weight: 0.02953
- 125 697 -> Weight: 0.01677
- 596 698 -> Weight: 0.02462
- 685 699 -> Weight: 0.0366
- 252 700 -> Weight: 0.01862
- 249 701 -> Weight: 0.01513
- 124 702 -> Weight: 0.00835
- 463 703 -> Weight: 0.0152
- 291 704 -> Weight: 0.01655
- 682 705 -> Weight: 0.02318
- 497 706 -> Weight: 0.01343
- 353 707 -> Weight: 0.00721
- 476 708 -> Weight: 0.02304
- 633 709 -> Weight: 0.02361

```
387 - 710 -> Weight: 0.00858
```

- 450 711 -> Weight: 0.0247
- 263 712 -> Weight: 0.00518
- 506 713 -> Weight: 0.03518
- 386 714 -> Weight: 0.0238
- 275 715 -> Weight: 0.02521
- 649 716 -> Weight: 0.01729
- 224 717 -> Weight: 0.01216
- 105 718 -> Weight: 0.02538
- 612 719 -> Weight: 0.0118
- 318 720 -> Weight: 0.02951
- 659 721 -> Weight: 0.01631
- 14 722 -> Weight: 0.0262
- 671 723 -> Weight: 0.02513
- 636 724 -> Weight: 0.0146
- 28 725 -> Weight: 0.03442
- 548 726 -> Weight: 0.00694
- 471 727 -> Weight: 0.02081
- 128 728 -> Weight: 0.02314
- 295 729 -> Weight: 0.01955
- 392 730 -> Weight: 0.01225
- 149 731 -> Weight: 0.03094
- 461 732 -> Weight: 0.03098
- 687 733 -> Weight: 0.02318
- 292 734 -> Weight: 0.02004
- 464 735 -> Weight: 0.03078
- 211 736 -> Weight: 0.01495
- 375 737 -> Weight: 0.02638
- 282 738 -> Weight: 0.01037
- 300 739 -> Weight: 0.02066
- 452 740 -> Weight: 0.04814
- 104 741 -> Weight: 0.01643
- 372 742 -> Weight: 0.02849
- 186 743 -> Weight: 0.02576
- 235 744 -> Weight: 0.01729
- 384 745 -> Weight: 0.01317
- 125 746 -> Weight: 0.02784
- 485 747 -> Weight: 0.024
- 645 748 -> Weight: 0.01279
- 740 749 -> Weight: 0.02577
- 298 750 -> Weight: 0.03635
- 346 751 -> Weight: 0.01059
- 525 752 -> Weight: 0.03445

```
624 - 753 -> Weight: 0.01989
```

- 109 754 -> Weight: 0.02671
- 180 755 -> Weight: 0.02052
- 354 756 -> Weight: 0.01104
- 736 757 -> Weight: 0.00898
- 224 758 -> Weight: 0.0132
- 430 759 -> Weight: 0.0242
- 749 760 -> Weight: 0.0157
- 268 761 -> Weight: 0.024
- 287 762 -> Weight: 0.02088
- 686 763 -> Weight: 0.02792
- 538 764 -> Weight: 0.00773
- 205 765 -> Weight: 0.01125
- 701 766 -> Weight: 0.02162
- 239 767 -> Weight: 0.00454
- 380 768 -> Weight: 0.00167
- 245 769 -> Weight: 0.02797
- 461 770 -> Weight: 0.03793
- 299 771 -> Weight: 0.00795
- 290 772 -> Weight: 0.01676
- 315 773 -> Weight: 0.02198
- 515 775 / NCLGITC. 0.0215
- 616 774 -> Weight: 0.03116
- 124 775 -> Weight: 0.01986
- 457 776 -> Weight: 0.00969
- 88 777 -> Weight: 0.00938
- 81 778 -> Weight: 0.02962
- 739 779 -> Weight: 0.04111
- 430 780 -> Weight: 0.00512
- 691 781 -> Weight: 0.00798
- 638 782 -> Weight: 0.03244
- 516 783 -> Weight: 0.01357
- 143 784 -> Weight: 0.02824
- 8 785 -> Weight: 0.0126
- 520 786 -> Weight: 0.01388
- 659 787 -> Weight: 0.02895
- 158 788 -> Weight: 0.02125
- 414 789 -> Weight: 0.01457
- 477 790 -> Weight: 0.03731
- 596 791 -> Weight: 0.00908
- 699 792 -> Weight: 0.01228
- 746 793 -> Weight: 0.01093
- 116 794 -> Weight: 0.01729
- 403 795 -> Weight: 0.02925

```
631 - 796 -> Weight: 0.03511
```

- 650 797 -> Weight: 0.02281
- 185 798 -> Weight: 0.02001
- 778 799 -> Weight: 0.01555
- 374 800 -> Weight: 0.0292
- 174 801 -> Weight: 0.00584
- 118 802 -> Weight: 0.02339
- 131 803 -> Weight: 0.01847
- 56 804 -> Weight: 0.04127
- 490 805 -> Weight: 0.03285
- 486 806 -> Weight: 0.02408
- 783 807 -> Weight: 0.01378
- 455 808 -> Weight: 0.00452
- 412 809 -> Weight: 0.01889
- 314 810 -> Weight: 0.04867
- 542 811 -> Weight: 0.01322
- 202 812 -> Weight: 0.02047
- 45 813 -> Weight: 0.0165
- 359 814 -> Weight: 0.01267
- 205 815 -> Weight: 0.02418
- 306 816 -> Weight: 0.005
- 172 817 -> Weight: 0.01871
- 587 818 -> Weight: 0.02333
- 723 819 -> Weight: 0.01077
- 284 820 -> Weight: 0.01548
- 87 821 -> Weight: 0.03399
- 193 822 -> Weight: 0.01903
- 607 823 -> Weight: 0.00245
- 312 824 -> Weight: 0.02737
- 3 825 -> Weight: 0.0186
- 68 826 -> Weight: 0.00829
- 374 827 -> Weight: 0.01771
- 532 828 -> Weight: 0.02721
- 696 829 -> Weight: 0.03757
- 145 830 -> Weight: 0.01235
- 213 030 7 110191.01 010123
- 812 831 -> Weight: 0.0197
- 665 832 -> Weight: 0.01527
- 144 833 -> Weight: 0.01155
- 436 834 -> Weight: 0.00701
- 711 835 -> Weight: 0.00757
- 157 836 -> Weight: 0.01241
- 269 837 -> Weight: 0.01811
- 55 838 -> Weight: 0.0096

```
789 - 839 -> Weight: 0.01003
```

- 578 840 -> Weight: 0.03283
- 696 841 -> Weight: 0.01585
- 369 842 -> Weight: 0.01028
- 692 843 -> Weight: 0.01188
- 113 844 -> Weight: 0.01916
- 477 845 -> Weight: 0.02859
- 574 846 -> Weight: 0.00999
- 286 847 -> Weight: 0.02946
- 298 848 -> Weight: 0.01266
- 332 849 -> Weight: 0.00687
- 419 850 -> Weight: 0.00465
- 467 851 -> Weight: 0.01482
- 190 852 -> Weight: 0.01579
- 618 853 -> Weight: 0.00644
- 374 854 -> Weight: 0.0158
- 591 855 -> Weight: 0.0045
- 16 856 -> Weight: 0.01482
- 273 857 -> Weight: 0.03803
- 415 858 -> Weight: 0.04301
- 208 859 -> Weight: 0.0131
- 678 860 -> Weight: 0.00968
- 262 861 -> Weight: 0.02982
- 733 862 -> Weight: 0.01518
- 843 863 -> Weight: 0.04521
- 399 864 -> Weight: 0.01003
- 527 865 -> Weight: 0.02224
- 113 866 -> Weight: 0.01603
- 528 867 -> Weight: 0.03363
- 741 868 -> Weight: 0.02569
- 628 869 -> Weight: 0.03298
- 167 870 -> Weight: 0.0124
- 798 871 -> Weight: 0.00824
- 430 872 -> Weight: 0.043
- 319 873 -> Weight: 0.01134
- 257 874 -> Weight: 0.0039
- 228 875 -> Weight: 0.00951
- 220 075 -> Weight. 0.00551
- 692 876 -> Weight: 0.01581
- 594 877 -> Weight: 0.03064
- 657 878 -> Weight: 0.02142
- 653 879 -> Weight: 0.01654
- 592 880 -> Weight: 0.02555
- 627 881 -> Weight: 0.00958

```
94 - 882 -> Weight: 0.02836
```

- 578 883 -> Weight: 0.00993
- 648 884 -> Weight: 0.00957
- 508 885 -> Weight: 0.01198
- 874 886 -> Weight: 0.03409
- 786 887 -> Weight: 0.01898
- 543 888 -> Weight: 0.00875
- 220 889 -> Weight: 0.02215
- 424 890 -> Weight: 0.01844
- 675 891 -> Weight: 0.01433
- 415 892 -> Weight: 0.02207
- 139 893 -> Weight: 0.01252
- 821 894 -> Weight: 0.01194
- 877 895 -> Weight: 0.01697
- 184 896 -> Weight: 0.01121
- 162 897 -> Weight: 0.01
- 724 898 -> Weight: 0.02573
- 102 899 -> Weight: 0.00347
- 607 900 -> Weight: 0.02134
- 824 901 -> Weight: 0.01483
- 384 902 -> Weight: 0.01397
- 160 903 -> Weight: 0.01314
- 704 904 -> Weight: 0.01174
- 3 905 -> Weight: 0.02536
- 154 906 -> Weight: 0.00423
- 753 907 -> Weight: 0.00895
- 41 908 -> Weight: 0.02721
- 478 909 -> Weight: 0.01835
- 467 910 -> Weight: 0.02055
- 307 911 -> Weight: 0.0266
- 274 912 -> Weight: 0.02795
- 531 913 -> Weight: 0.01606
- 545 914 -> Weight: 0.01549
- 329 915 -> Weight: 0.01828
- 684 916 -> Weight: 0.00238
- 636 917 -> Weight: 0.03332
- 191 918 -> Weight: 0.02053 253 - 919 -> Weight: 0.01465
- 544 920 -> Weight: 0.00454
- 148 921 -> Weight: 0.01908
- 580 922 -> Weight: 0.0221
- 671 923 -> Weight: 0.02098
- 492 924 -> Weight: 0.02522

```
307 - 925 -> Weight: 0.01556
```

- 54 926 -> Weight: 0.01833
- 482 927 -> Weight: 0.00318
- 15 928 -> Weight: 0.01865
- 75 929 -> Weight: 0.01865
- 222 930 -> Weight: 0.01369
- 274 931 -> Weight: 0.00689
- 752 932 -> Weight: 0.01379
- 674 933 -> Weight: 0.02031
- 860 934 -> Weight: 0.00536
- 611 935 -> Weight: 0.01385
- 422 936 -> Weight: 0.01839
- 646 937 -> Weight: 0.02537
- 231 938 -> Weight: 0.00514
- 727 939 -> Weight: 0.0162
- 741 940 -> Weight: 0.00727
- 822 941 -> Weight: 0.01505
- 739 942 -> Weight: 0.02589
- 935 943 -> Weight: 0.01266
- 933 944 -> Weight: 0.02367
- 943 945 -> Weight: 0.02586
- 278 946 -> Weight: 0.01761
- 674 947 -> Weight: 0.00895
- 546 948 -> Weight: 0.02385
- 5+0 5+0 > Netghe: 0.02505
- 143 949 -> Weight: 0.00884
- 138 950 -> Weight: 0.01787
- 325 951 -> Weight: 0.00294
- 363 952 -> Weight: 0.03198
- 2 953 -> Weight: 0.00842
- 446 954 -> Weight: 0.00851
- 660 955 -> Weight: 0.03227
- 5 956 -> Weight: 0.00858
- 390 957 -> Weight: 8.0E-4
- 0 958 -> Weight: 0.01083
- 144 959 -> Weight: 0.00623
- 307 960 -> Weight: 0.00627
- 601 961 -> Weight: 0.01253
- 410 962 -> Weight: 0.00154
- 302 963 -> Weight: 0.02431
- 49 964 -> Weight: 0.00337
- 523 965 -> Weight: 0.03079
- 241 966 -> Weight: 0.00565
- 733 967 -> Weight: 0.0141

478 - 968 -> Weight: 0.03305 627 - 969 -> Weight: 0.01428 214 - 970 -> Weight: 0.02917 547 - 971 -> Weight: 0.01203 764 - 972 -> Weight: 0.00489 414 - 973 -> Weight: 0.03162 10 - 974 -> Weight: 0.01225 92 - 975 -> Weight: 0.01584 910 - 976 -> Weight: 0.01405 415 - 977 -> Weight: 0.02355 866 - 978 -> Weight: 0.00436 942 - 979 -> Weight: 0.01027 765 - 980 -> Weight: 0.01596 580 - 981 -> Weight: 0.01734 455 - 982 -> Weight: 0.02851 705 - 983 -> Weight: 0.01262 702 - 984 -> Weight: 0.01014 408 - 985 -> Weight: 0.02445 465 - 986 -> Weight: 0.00669 948 - 987 -> Weight: 0.01489 524 - 988 -> Weight: 0.01103 921 - 989 -> Weight: 0.02107 723 - 990 -> Weight: 0.01353 667 - 991 -> Weight: 0.02247 708 - 992 -> Weight: 0.02 779 - 993 -> Weight: 0.00532 363 - 994 -> Weight: 0.02183 614 - 995 -> Weight: 0.02233 621 - 996 -> Weight: 0.0225 486 - 997 -> Weight: 0.008 933 - 998 -> Weight: 0.02065 22 - 999 -> Weight: 0.01676 Final Weight: 23.50267

## For XtraLargeGraph.txt:

5598 - 7398 -> Weight: 0.00617 1664 - 7399 -> Weight: 0.00958 3969 - 7400 -> Weight: 0.01224 1457 - 7401 -> Weight: 0.00778 3389 - 7402 -> Weight: 0.00374 543 - 7403 -> Weight: 0.01128

```
1562 - 7404 -> Weight: 0.00461
1792 - 7405 -> Weight: 0.00644
247 - 7406 -> Weight: 0.00739
5365 - 7407 -> Weight: 0.00459
6677 - 7408 -> Weight: 0.00709
1987 - 7409 -> Weight: 0.00905
7315 - 7410 -> Weight: 0.00983
2223 - 7411 -> Weight: 0.00957
890 - 7412 -> Weight: 0.00173
4167 - 7413 -> Weight: 0.00549
5498 - 7414 -> Weight: 0.00254
110 - 7415 -> Weight: 0.00692
1664 - 7416 -> Weight: 0.00564
2082 - 7417 -> Weight: 0.00435
1991 - 7418 -> Weight: 0.00661
5947 - 7419 -> Weight: 0.00359
6071 - 7420 -> Weight: 0.00104
1272 - 7421 -> Weight: 0.00482
1457 - 7422 -> Weight: 0.00914
1105 - 7423 -> Weight: 0.01117
7066 - 7424 -> Weight: 0.01164
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4059 - 7426 -> Weight: 0.00672
211 - 7427 -> Weight: 0.0067
4018 - 7428 -> Weight: 0.00349
7077 - 7429 -> Weight: 0.00337
5779 - 7430 -> Weight: 0.00538
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1187 - 7433 -> Weight: 0.00482
7233 - 7434 -> Weight: 0.00626
6927 - 7435 -> Weight: 0.00408
2371 - 7436 -> Weight: 0.01312
4388 - 7437 -> Weight: 0.00307
4996 - 7438 -> Weight: 0.00238
4644 - 7439 -> Weight: 0.00109
5900 - 7440 -> Weight: 0.00918
131 - 7441 -> Weight: 0.00441
1156 - 7442 -> Weight: 0.0022
2095 - 7443 -> Weight: 0.00548
3497 - 7444 -> Weight: 0.01412
7200 - 7445 -> Weight: 0.00342
3447 - 7446 -> Weight: 0.00703
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1607 - 7447 -> Weight: 0.01016
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2892 - 7449 -> Weight: 0.00314
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4154 - 7452 -> Weight: 0.00555
1184 - 7453 -> Weight: 0.00415
3957 - 7454 -> Weight: 0.00138
7183 - 7455 -> Weight: 0.00652
2478 - 7456 -> Weight: 0.00468
4456 - 7457 -> Weight: 0.00338
6538 - 7458 -> Weight: 0.00776
7257 - 7459 -> Weight: 0.00563
6731 - 7460 -> Weight: 0.01126
983 - 7461 -> Weight: 0.00742
2403 - 7462 -> Weight: 0.00235
5080 - 7463 -> Weight: 0.00599
3886 - 7464 -> Weight: 0.0073
4041 - 7465 -> Weight: 0.00402
1594 - 7466 -> Weight: 0.00259
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91 - 7469 -> Weight: 0.00258
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2341 - 7471 -> Weight: 0.0074
4504 - 7472 -> Weight: 0.00226
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2349 - 7474 -> Weight: 0.00954
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5214 - 7476 -> Weight: 0.00418
4610 - 7477 -> Weight: 0.00195
5776 - 7478 -> Weight: 0.00592
1746 - 7479 -> Weight: 0.00463
1127 - 7480 -> Weight: 0.00442
1458 - 7481 -> Weight: 0.00394
1065 - 7482 -> Weight: 0.00334
795 - 7483 -> Weight: 0.00844
1737 - 7484 -> Weight: 0.00588
6370 - 7485 -> Weight: 0.00289
463 - 7486 -> Weight: 0.00573
6192 - 7487 -> Weight: 0.00801
4209 - 7488 -> Weight: 0.00125
629 - 7489 -> Weight: 0.00571
```

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1365 - 7493 -> Weight: 0.01147
5893 - 7494 -> Weight: 0.00796
6955 - 7495 -> Weight: 0.00422
949 - 7496 -> Weight: 0.00311
5257 - 7497 -> Weight: 0.0078
2781 - 7498 -> Weight: 0.0076
5482 - 7499 -> Weight: 0.00468
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6390 - 7503 -> Weight: 0.00515
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5886 - 7505 -> Weight: 0.00233
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3355 - 7507 -> Weight: 0.0046
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7259 - 7514 -> Weight: 0.00479
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4994 - 7520 -> Weight: 0.00719
1799 - 7521 -> Weight: 0.0081
276 - 7522 -> Weight: 0.00705
678 - 7523 -> Weight: 0.00455
3762 - 7524 -> Weight: 0.00403
3690 - 7525 -> Weight: 0.00794
2013 - 7526 -> Weight: 0.01137
517 - 7527 -> Weight: 0.00586
5034 - 7528 -> Weight: 0.00841
5390 - 7529 -> Weight: 0.00311
1040 - 7530 -> Weight: 0.00439
```

3479 - 7531 -> Weight: 0.01016 4142 - 7532 -> Weight: 0.00459

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3275 - 7533 -> Weight: 0.00452
6159 - 7534 -> Weight: 0.00727
7489 - 7535 -> Weight: 0.0073
5411 - 7536 -> Weight: 0.00278
5084 - 7537 -> Weight: 0.00175
2424 - 7538 -> Weight: 0.00116
5810 - 7539 -> Weight: 0.00648
2517 - 7540 -> Weight: 0.00323
2450 - 7541 -> Weight: 0.00714
4329 - 7542 -> Weight: 0.01159
6888 - 7543 -> Weight: 0.00668
2866 - 7544 -> Weight: 0.01159
7197 - 7545 -> Weight: 0.0053
6621 - 7546 -> Weight: 0.01187
850 - 7547 -> Weight: 0.0035
1684 - 7548 -> Weight: 0.00452
4392 - 7549 -> Weight: 0.00229
3367 - 7550 -> Weight: 0.00362
5236 - 7551 -> Weight: 0.00316
3187 - 7552 -> Weight: 0.00268
6263 - 7553 -> Weight: 0.00884
1218 - 7554 -> Weight: 0.0059
6358 - 7555 -> Weight: 0.00781
764 - 7556 -> Weight: 0.00482
738 - 7557 -> Weight: 0.00998
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669 - 7559 -> Weight: 0.0059
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7440 - 7567 -> Weight: 0.0071
4406 - 7568 -> Weight: 0.00497
4498 - 7569 -> Weight: 0.0026
4504 - 7570 -> Weight: 0.00488
2577 - 7571 -> Weight: 0.00595
5224 - 7572 -> Weight: 0.00513
2522 - 7573 -> Weight: 0.00549
1448 - 7574 -> Weight: 0.00237
410 - 7575 -> Weight: 0.00489
```

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5024 - 7580 -> Weight: 0.00627
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6070 - 7583 -> Weight: 0.00276
4383 - 7584 -> Weight: 0.00135
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1126 - 7586 -> Weight: 0.00592
4282 - 7587 -> Weight: 0.00185
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553 - 7595 -> Weight: 0.00189
1667 - 7596 -> Weight: 0.00605
2741 - 7597 -> Weight: 0.00716
2885 - 7598 -> Weight: 0.00383
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7513 - 7603 -> Weight: 0.00899
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6044 - 7611 -> Weight: 0.00569
7267 - 7612 -> Weight: 0.00751
257 - 7613 -> Weight: 0.00294
630 - 7614 -> Weight: 0.00524
1337 - 7615 -> Weight: 0.00227
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1038 - 7617 -> Weight: 4.3E-4
2188 - 7618 -> Weight: 0.00527
```

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7275 - 7620 -> Weight: 0.01169
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7230 - 7624 -> Weight: 0.00567
2393 - 7625 -> Weight: 0.00424
3363 - 7626 -> Weight: 0.00377
2455 - 7627 -> Weight: 0.00766
593 - 7628 -> Weight: 0.00761
5619 - 7629 -> Weight: 0.00307
4804 - 7630 -> Weight: 0.00507
6935 - 7631 -> Weight: 0.00944
5049 - 7632 -> Weight: 7.4E-4
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4344 - 7635 -> Weight: 0.00388
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5256 - 7639 -> Weight: 0.00225
2696 - 7640 -> Weight: 0.00633
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4291 - 7642 -> Weight: 0.00531
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1335 - 7644 -> Weight: 0.00561
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5183 - 7646 -> Weight: 0.00204
6690 - 7647 -> Weight: 0.00468
1131 - 7648 -> Weight: 0.0055
2623 - 7649 -> Weight: 0.00279
932 - 7650 -> Weight: 0.00271
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2319 - 7653 -> Weight: 0.00828
2499 - 7654 -> Weight: 0.00586
4124 - 7655 -> Weight: 0.00521
5698 - 7656 -> Weight: 0.0046
2172 - 7657 -> Weight: 0.00801
2184 - 7658 -> Weight: 0.00757
1144 - 7659 -> Weight: 0.00483
7057 - 7660 -> Weight: 0.00371
4642 - 7661 -> Weight: 0.00697
```

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4278 - 7666 -> Weight: 0.00489
982 - 7667 -> Weight: 0.00115
923 - 7668 -> Weight: 0.00717
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2179 - 7670 -> Weight: 0.01229
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2787 - 7675 -> Weight: 0.00369
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7642 - 7678 -> Weight: 0.00333
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3979 - 7683 -> Weight: 0.00619
6175 - 7684 -> Weight: 0.00572
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323 - 7690 -> Weight: 0.01133
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4371 - 7693 -> Weight: 0.01063
2255 - 7694 -> Weight: 0.0101
422 - 7695 -> Weight: 0.01054
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5001 - 7697 -> Weight: 0.00859
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5361 - 7699 -> Weight: 0.0049
4259 - 7700 -> Weight: 0.00639
7593 - 7701 -> Weight: 0.00397
```

5713 - 7702 -> Weight: 0.00208 2608 - 7703 -> Weight: 0.00699 1759 - 7704 -> Weight: 0.00592

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6994 - 7705 -> Weight: 0.00638
5471 - 7706 -> Weight: 0.00284
2753 - 7707 -> Weight: 0.00707
5579 - 7708 -> Weight: 0.00499
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4277 - 7715 -> Weight: 0.00761
7365 - 7716 -> Weight: 0.00155
4292 - 7717 -> Weight: 0.00424
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1304 - 7719 -> Weight: 0.0102
6570 - 7720 -> Weight: 0.00498
4178 - 7721 -> Weight: 0.00114
1553 - 7722 -> Weight: 0.00254
7199 - 7723 -> Weight: 0.00407
2011 - 7724 -> Weight: 0.0039
7376 - 7725 -> Weight: 0.00484
4270 - 7726 -> Weight: 0.014
1877 - 7727 -> Weight: 0.01027
1325 - 7728 -> Weight: 0.00963
6839 - 7729 -> Weight: 0.01193
2181 - 7730 -> Weight: 0.00964
2458 - 7731 -> Weight: 0.0028
5180 - 7732 -> Weight: 0.00461
2097 - 7733 -> Weight: 0.00234
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3243 - 7735 -> Weight: 0.00265
3453 - 7736 -> Weight: 0.01056
1835 - 7737 -> Weight: 0.00409
6575 - 7738 -> Weight: 0.01032
4321 - 7739 -> Weight: 0.01026
1629 - 7740 -> Weight: 0.00392
4721 - 7741 -> Weight: 0.00315
5533 - 7742 -> Weight: 0.0054
3728 - 7743 -> Weight: 0.01074
905 - 7744 -> Weight: 7.6E-4
2506 - 7745 -> Weight: 0.0048
5760 - 7746 -> Weight: 0.00563
108 - 7747 -> Weight: 0.00379
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4312 - 7755 -> Weight: 0.01268
6673 - 7756 -> Weight: 0.0022
5160 - 7757 -> Weight: 0.00721
2300 - 7758 -> Weight: 0.00128
4680 - 7759 -> Weight: 0.00425
3605 - 7760 -> Weight: 0.0079
1042 - 7761 -> Weight: 0.00489
5647 - 7762 -> Weight: 0.00387
1920 - 7763 -> Weight: 0.00798
6368 - 7764 -> Weight: 0.0089
6723 - 7765 -> Weight: 0.00633
4733 - 7766 -> Weight: 0.00497
1587 - 7767 -> Weight: 0.00132
5515 - 7768 -> Weight: 0.00254
4832 - 7769 -> Weight: 0.00207
111 - 7770 -> Weight: 0.00782
7312 - 7771 -> Weight: 0.00824
6360 - 7772 -> Weight: 0.0053
820 - 7773 -> Weight: 0.00736
5798 - 7774 -> Weight: 0.0054
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4368 - 7777 -> Weight: 0.00451
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3436 - 7779 -> Weight: 0.00691
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6264 - 7781 -> Weight: 0.00455
3376 - 7782 -> Weight: 1.8E-4
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1067 - 7789 -> Weight: 0.00958
1449 - 7790 -> Weight: 0.00828
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3646 - 7792 -> Weight: 0.00406
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1381 - 7795 -> Weight: 0.00563
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2348 - 7797 -> Weight: 0.00693
235 - 7798 -> Weight: 0.00782
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7199 - 7800 -> Weight: 0.00716
7 - 7801 -> Weight: 0.00168
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7591 - 7808 -> Weight: 0.00492
5691 - 7809 -> Weight: 0.00839
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7733 - 7815 -> Weight: 0.00482
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6780 - 7822 -> Weight: 0.00556
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5763 - 7827 -> Weight: 0.00843
653 - 7828 -> Weight: 0.00658
7237 - 7829 -> Weight: 0.00643
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1330 - 7831 -> Weight: 0.00699
5687 - 7832 -> Weight: 0.0048
2334 - 7833 -> Weight: 0.01512
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5998 - 7839 -> Weight: 0.00205
6915 - 7840 -> Weight: 0.00447
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6276 - 7843 -> Weight: 0.00481
7784 - 7844 -> Weight: 0.00388
3252 - 7845 -> Weight: 0.00267
3604 - 7846 -> Weight: 0.00967
4164 - 7847 -> Weight: 0.00279
6346 - 7848 -> Weight: 0.0043
6484 - 7849 -> Weight: 0.01028
2286 - 7850 -> Weight: 0.00607
3736 - 7851 -> Weight: 0.00617
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1946 - 7853 -> Weight: 0.00264
1423 - 7854 -> Weight: 0.00224
4980 - 7855 -> Weight: 0.00556
804 - 7856 -> Weight: 0.00829
6908 - 7857 -> Weight: 0.00817
4408 - 7858 -> Weight: 0.00229
572 - 7859 -> Weight: 0.0072
6723 - 7860 -> Weight: 0.009
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1470 - 7862 -> Weight: 0.00265
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4962 - 7865 -> Weight: 0.00634
4208 - 7866 -> Weight: 0.00407
7816 - 7867 -> Weight: 0.00482
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3319 - 7872 -> Weight: 0.00313
2726 - 7873 -> Weight: 0.00316
2572 - 7874 -> Weight: 0.00512
2952 - 7875 -> Weight: 0.0151
708 - 7876 -> Weight: 0.00589
```

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4347 - 7879 -> Weight: 0.00301
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3943 - 7882 -> Weight: 0.0065
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3104 - 7887 -> Weight: 0.00518
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4408 - 7893 -> Weight: 0.00256
4892 - 7894 -> Weight: 0.00873
4008 - 7895 -> Weight: 0.00654
2692 - 7896 -> Weight: 0.00647
5558 - 7897 -> Weight: 0.00429
2114 - 7898 -> Weight: 0.00422
1890 - 7899 -> Weight: 0.00787
5396 - 7900 -> Weight: 0.0058
33 - 7901 -> Weight: 0.00172
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1035 - 7903 -> Weight: 0.00448
2189 - 7904 -> Weight: 0.01112
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7358 - 7907 -> Weight: 0.00398
7442 - 7908 -> Weight: 0.00406
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4136 - 7911 -> Weight: 0.00415
3284 - 7912 -> Weight: 0.00701
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1330 - 7914 -> Weight: 0.00798
414 - 7915 -> Weight: 0.00218
7526 - 7916 -> Weight: 0.00348
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1870 - 7918 -> Weight: 0.01003
```

3147 - 7919 -> Weight: 8.4E-4

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4398 - 7923 -> Weight: 0.00764
7564 - 7924 -> Weight: 0.00427
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4536 - 7926 -> Weight: 8.9E-4
7453 - 7927 -> Weight: 0.00893
1189 - 7928 -> Weight: 0.00672
7760 - 7929 -> Weight: 0.00378
2958 - 7930 -> Weight: 0.00901
6802 - 7931 -> Weight: 0.00348
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2312 - 7933 -> Weight: 0.00388
6515 - 7934 -> Weight: 0.00487
3031 - 7935 -> Weight: 0.00644
7580 - 7936 -> Weight: 0.00529
2737 - 7937 -> Weight: 0.00241
5788 - 7938 -> Weight: 0.0084
7218 - 7939 -> Weight: 0.00612
7904 - 7940 -> Weight: 0.00545
6 - 7941 -> Weight: 0.00643
2365 - 7942 -> Weight: 0.00388
2554 - 7943 -> Weight: 0.00171
7755 - 7944 -> Weight: 0.00927
4660 - 7945 -> Weight: 0.00973
5926 - 7946 -> Weight: 0.00546
1842 - 7947 -> Weight: 0.00334
7394 - 7948 -> Weight: 0.00297
4679 - 7949 -> Weight: 0.00189
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3428 - 7953 -> Weight: 0.0043
6341 - 7954 -> Weight: 0.01079
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6670 - 7957 -> Weight: 0.00696
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1263 - 7959 -> Weight: 0.00426
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1968 - 7961 -> Weight: 0.0067
2652 - 7962 -> Weight: 0.00118
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740 - 7968 -> Weight: 9.5E-4
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6476 - 7970 -> Weight: 0.00344
3692 - 7971 -> Weight: 0.00697
3691 - 7972 -> Weight: 0.01074
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2545 - 7976 -> Weight: 0.00664
6254 - 7977 -> Weight: 0.00495
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6859 - 7979 -> Weight: 0.00657
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6802 - 7981 -> Weight: 0.00413
4788 - 7982 -> Weight: 0.00157
1318 - 7983 -> Weight: 0.00111
4142 - 7984 -> Weight: 0.00159
2647 - 7985 -> Weight: 0.00432
2050 - 7986 -> Weight: 0.00709
3397 - 7987 -> Weight: 0.0064
7924 - 7988 -> Weight: 0.00427
7342 - 7989 -> Weight: 0.0052
7051 - 7990 -> Weight: 5.6E-4
1126 - 7991 -> Weight: 0.00197
6564 - 7992 -> Weight: 0.00274
1710 - 7993 -> Weight: 0.00202
4693 - 7994 -> Weight: 0.00611
6279 - 7995 -> Weight: 0.00492
6285 - 7996 -> Weight: 0.00589
4268 - 7997 -> Weight: 0.00407
2489 - 7998 -> Weight: 0.0037
3033 - 7999 -> Weight: 0.0031
4997 - 8000 -> Weight: 0.00806
7500 - 8001 -> Weight: 0.00481
6669 - 8002 -> Weight: 0.00395
134 - 8003 -> Weight: 0.00175
7997 - 8004 -> Weight: 0.00272
7364 - 8005 -> Weight: 0.00889
```

```
527 - 8006 -> Weight: 0.00916
1070 - 8007 -> Weight: 0.00294
1616 - 8008 -> Weight: 0.0034
5282 - 8009 -> Weight: 0.00138
7370 - 8010 -> Weight: 0.00203
1764 - 8011 -> Weight: 0.00414
3694 - 8012 -> Weight: 0.00508
2013 - 8013 -> Weight: 0.0076
3577 - 8014 -> Weight: 0.00524
5140 - 8015 -> Weight: 0.00112
4489 - 8016 -> Weight: 0.00374
411 - 8017 -> Weight: 0.00505
2767 - 8018 -> Weight: 0.00282
7473 - 8019 -> Weight: 0.0025
1259 - 8020 -> Weight: 0.00792
131 - 8021 -> Weight: 0.00704
5889 - 8022 -> Weight: 0.00509
1997 - 8023 -> Weight: 0.00693
2654 - 8024 -> Weight: 0.00623
863 - 8025 -> Weight: 0.00595
2707 - 8026 -> Weight: 0.00424
6742 - 8027 -> Weight: 0.00573
2335 - 8028 -> Weight: 0.00243
7190 - 8029 -> Weight: 0.00284
5254 - 8030 -> Weight: 0.00258
1181 - 8031 -> Weight: 0.01244
5033 - 8032 -> Weight: 0.00219
4676 - 8033 -> Weight: 0.00412
7719 - 8034 -> Weight: 0.01172
2693 - 8035 -> Weight: 0.00902
6170 - 8036 -> Weight: 0.01106
4918 - 8037 -> Weight: 0.00594
7995 - 8038 -> Weight: 0.0061
3400 - 8039 -> Weight: 0.0066
1417 - 8040 -> Weight: 8.1E-4
3052 - 8041 -> Weight: 2.8E-4
5020 - 8042 -> Weight: 0.00326
1781 - 8043 -> Weight: 0.00864
4393 - 8044 -> Weight: 0.00603
1233 - 8045 -> Weight: 0.00652
2044 - 8046 -> Weight: 0.00464
1348 - 8047 -> Weight: 3.8E-4
252 - 8048 -> Weight: 0.0018
```

```
4261 - 8049 -> Weight: 0.0031
7427 - 8050 -> Weight: 0.00416
2980 - 8051 -> Weight: 0.00676
685 - 8052 -> Weight: 0.00298
2231 - 8053 -> Weight: 0.01283
5945 - 8054 -> Weight: 0.00527
5176 - 8055 -> Weight: 0.00568
2711 - 8056 -> Weight: 0.00968
4674 - 8057 -> Weight: 0.00328
1597 - 8058 -> Weight: 0.00738
6455 - 8059 -> Weight: 0.00373
2798 - 8060 -> Weight: 0.00686
5127 - 8061 -> Weight: 0.00548
7515 - 8062 -> Weight: 0.00637
7136 - 8063 -> Weight: 0.00957
6587 - 8064 -> Weight: 0.00362
6894 - 8065 -> Weight: 6.6E-4
448 - 8066 -> Weight: 0.00326
5720 - 8067 -> Weight: 0.00397
5429 - 8068 -> Weight: 0.0032
5521 - 8069 -> Weight: 0.00568
2049 - 8070 -> Weight: 0.00705
73 - 8071 -> Weight: 0.00517
5509 - 8072 -> Weight: 0.00374
6256 - 8073 -> Weight: 0.00435
6343 - 8074 -> Weight: 0.00294
1779 - 8075 -> Weight: 0.00575
6646 - 8076 -> Weight: 0.00331
5754 - 8077 -> Weight: 0.00177
5339 - 8078 -> Weight: 0.00399
4043 - 8079 -> Weight: 0.00318
941 - 8080 -> Weight: 0.00672
2191 - 8081 -> Weight: 0.00135
981 - 8082 -> Weight: 0.00225
3617 - 8083 -> Weight: 0.00365
2819 - 8084 -> Weight: 0.00457
7047 - 8085 -> Weight: 0.00691
614 - 8086 -> Weight: 0.00882
4824 - 8087 -> Weight: 0.00614
1073 - 8088 -> Weight: 0.00387
7635 - 8089 -> Weight: 0.00253
7836 - 8090 -> Weight: 0.0016
5001 - 8091 -> Weight: 0.00381
```

```
6249 - 8092 -> Weight: 0.00834
829 - 8093 -> Weight: 0.01084
2036 - 8094 -> Weight: 0.00312
4990 - 8095 -> Weight: 0.01362
1371 - 8096 -> Weight: 0.00336
6283 - 8097 -> Weight: 0.00292
1301 - 8098 -> Weight: 0.0075
6300 - 8099 -> Weight: 0.00548
1323 - 8100 -> Weight: 0.00294
1559 - 8101 -> Weight: 7.7E-4
7548 - 8102 -> Weight: 0.00902
465 - 8103 -> Weight: 0.00523
7902 - 8104 -> Weight: 0.00276
73 - 8105 -> Weight: 0.0088
4482 - 8106 -> Weight: 0.00458
56 - 8107 -> Weight: 0.00451
3155 - 8108 -> Weight: 0.00268
3819 - 8109 -> Weight: 0.011
152 - 8110 -> Weight: 7.0E-4
3749 - 8111 -> Weight: 0.01022
2056 - 8112 -> Weight: 0.00806
1213 - 8113 -> Weight: 3.6E-4
7264 - 8114 -> Weight: 0.00867
1076 - 8115 -> Weight: 0.00493
6264 - 8116 -> Weight: 0.00473
6290 - 8117 -> Weight: 0.00827
1036 - 8118 -> Weight: 0.00484
140 - 8119 -> Weight: 0.00885
1140 - 8120 -> Weight: 0.00436
6970 - 8121 -> Weight: 0.00681
1138 - 8122 -> Weight: 0.00406
919 - 8123 -> Weight: 0.00369
5251 - 8124 -> Weight: 0.00782
2521 - 8125 -> Weight: 0.00285
1181 - 8126 -> Weight: 0.0034
2817 - 8127 -> Weight: 0.00998
4661 - 8128 -> Weight: 0.00126
1602 - 8129 -> Weight: 0.00323
3334 - 8130 -> Weight: 0.01031
3278 - 8131 -> Weight: 9.9E-4
3618 - 8132 -> Weight: 0.00472
2238 - 8133 -> Weight: 0.00535
5793 - 8134 -> Weight: 0.004
```

```
782 - 8135 -> Weight: 0.01139
7627 - 8136 -> Weight: 0.00713
3725 - 8137 -> Weight: 0.00243
1437 - 8138 -> Weight: 0.00986
2716 - 8139 -> Weight: 0.00473
4996 - 8140 -> Weight: 0.00361
2073 - 8141 -> Weight: 9.7E-4
1811 - 8142 -> Weight: 0.00747
2845 - 8143 -> Weight: 0.00353
2827 - 8144 -> Weight: 0.01024
5721 - 8145 -> Weight: 0.00643
1511 - 8146 -> Weight: 0.00507
7681 - 8147 -> Weight: 0.00786
5588 - 8148 -> Weight: 0.00363
416 - 8149 -> Weight: 0.00554
5248 - 8150 -> Weight: 0.00714
5817 - 8151 -> Weight: 0.00431
4599 - 8152 -> Weight: 0.00259
7868 - 8153 -> Weight: 0.00617
3530 - 8154 -> Weight: 0.00425
1348 - 8155 -> Weight: 0.00822
157 - 8156 -> Weight: 0.00219
5081 - 8157 -> Weight: 0.00629
2162 - 8158 -> Weight: 0.01083
4860 - 8159 -> Weight: 0.00776
4851 - 8160 -> Weight: 0.00753
7090 - 8161 -> Weight: 0.00162
3716 - 8162 -> Weight: 0.00817
4049 - 8163 -> Weight: 0.00565
6559 - 8164 -> Weight: 0.00353
2166 - 8165 -> Weight: 0.00306
5711 - 8166 -> Weight: 0.00498
7695 - 8167 -> Weight: 0.00246
6825 - 8168 -> Weight: 0.00307
3318 - 8169 -> Weight: 0.00143
5589 - 8170 -> Weight: 0.00364
2423 - 8171 -> Weight: 0.01038
6439 - 8172 -> Weight: 0.00498
3589 - 8173 -> Weight: 0.00328
5759 - 8174 -> Weight: 0.00203
1411 - 8175 -> Weight: 0.00646
1625 - 8176 -> Weight: 0.00691
5034 - 8177 -> Weight: 0.01207
```

```
4433 - 8178 -> Weight: 0.00243
482 - 8179 -> Weight: 0.00607
4559 - 8180 -> Weight: 0.00372
3325 - 8181 -> Weight: 0.00717
5502 - 8182 -> Weight: 0.00396
7993 - 8183 -> Weight: 8.7E-4
4314 - 8184 -> Weight: 0.00449
7398 - 8185 -> Weight: 0.00267
7281 - 8186 -> Weight: 0.01043
2941 - 8187 -> Weight: 0.00257
316 - 8188 -> Weight: 0.00652
6587 - 8189 -> Weight: 0.00932
5718 - 8190 -> Weight: 0.00711
2268 - 8191 -> Weight: 0.00413
200 - 8192 -> Weight: 0.00434
4176 - 8193 -> Weight: 0.00511
4052 - 8194 -> Weight: 0.00445
5802 - 8195 -> Weight: 0.00224
1145 - 8196 -> Weight: 0.00168
5034 - 8197 -> Weight: 0.00174
2656 - 8198 -> Weight: 0.00944
60 - 8199 -> Weight: 0.00448
6761 - 8200 -> Weight: 0.00199
1954 - 8201 -> Weight: 0.00956
619 - 8202 -> Weight: 0.00445
760 - 8203 -> Weight: 0.00764
5793 - 8204 -> Weight: 0.00407
823 - 8205 -> Weight: 0.00548
2202 - 8206 -> Weight: 0.00311
2568 - 8207 -> Weight: 0.00496
4609 - 8208 -> Weight: 0.0068
2682 - 8209 -> Weight: 0.00897
4028 - 8210 -> Weight: 0.00515
1576 - 8211 -> Weight: 0.00696
4942 - 8212 -> Weight: 0.00447
3284 - 8213 -> Weight: 0.00197
4787 - 8214 -> Weight: 0.00277
120 - 8215 -> Weight: 0.00392
4127 - 8216 -> Weight: 0.00687
6981 - 8217 -> Weight: 0.00581
4983 - 8218 -> Weight: 0.00359
5418 - 8219 -> Weight: 0.00485
7384 - 8220 -> Weight: 0.00559
```

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2694 - 8221 -> Weight: 0.01232
7045 - 8222 -> Weight: 0.00773
4842 - 8223 -> Weight: 0.00454
5931 - 8224 -> Weight: 0.00483
6898 - 8225 -> Weight: 0.00314
7484 - 8226 -> Weight: 0.00592
5022 - 8227 -> Weight: 0.00418
4229 - 8228 -> Weight: 0.00848
5870 - 8229 -> Weight: 0.00518
5297 - 8230 -> Weight: 0.00294
819 - 8231 -> Weight: 0.01111
5653 - 8232 -> Weight: 0.00272
7310 - 8233 -> Weight: 0.00626
6274 - 8234 -> Weight: 0.00113
6433 - 8235 -> Weight: 0.00586
1975 - 8236 -> Weight: 0.00896
3771 - 8237 -> Weight: 0.00476
2275 - 8238 -> Weight: 0.00272
3668 - 8239 -> Weight: 0.00828
4637 - 8240 -> Weight: 0.00377
5089 - 8241 -> Weight: 0.00771
6720 - 8242 -> Weight: 0.00871
842 - 8243 -> Weight: 0.01243
3686 - 8244 -> Weight: 0.00291
3889 - 8245 -> Weight: 0.00603
6437 - 8246 -> Weight: 0.00196
62 - 8247 -> Weight: 0.00361
4378 - 8248 -> Weight: 0.00679
2075 - 8249 -> Weight: 0.00973
4272 - 8250 -> Weight: 0.00633
1588 - 8251 -> Weight: 0.00595
5201 - 8252 -> Weight: 0.01359
7176 - 8253 -> Weight: 0.00464
3190 - 8254 -> Weight: 0.00305
1965 - 8255 -> Weight: 0.01163
7193 - 8256 -> Weight: 0.00541
8032 - 8257 -> Weight: 0.00459
3275 - 8258 -> Weight: 0.0042
4491 - 8259 -> Weight: 0.00479
5899 - 8260 -> Weight: 0.01002
7527 - 8261 -> Weight: 0.01048
5131 - 8262 -> Weight: 9.1E-4
5050 - 8263 -> Weight: 0.00101
```

```
5603 - 8264 -> Weight: 0.00869
4901 - 8265 -> Weight: 0.00749
1457 - 8266 -> Weight: 0.00617
2224 - 8267 -> Weight: 0.00277
5139 - 8268 -> Weight: 0.01231
1752 - 8269 -> Weight: 0.00929
3392 - 8270 -> Weight: 0.00343
4707 - 8271 -> Weight: 0.01185
4555 - 8272 -> Weight: 0.00551
1595 - 8273 -> Weight: 0.00158
5454 - 8274 -> Weight: 0.00721
5391 - 8275 -> Weight: 0.00162
607 - 8276 -> Weight: 0.00334
4410 - 8277 -> Weight: 4.7E-4
4035 - 8278 -> Weight: 0.00508
4080 - 8279 -> Weight: 0.0074
3407 - 8280 -> Weight: 0.0065
5508 - 8281 -> Weight: 0.0041
4349 - 8282 -> Weight: 0.00535
4576 - 8283 -> Weight: 0.01149
4684 - 8284 -> Weight: 0.00174
3400 - 8285 -> Weight: 0.00393
5105 - 8286 -> Weight: 0.00611
7273 - 8287 -> Weight: 0.01249
7953 - 8288 -> Weight: 0.00589
6312 - 8289 -> Weight: 0.00449
1172 - 8290 -> Weight: 0.01006
4611 - 8291 -> Weight: 0.00573
6500 - 8292 -> Weight: 0.00458
6820 - 8293 -> Weight: 0.00567
5504 - 8294 -> Weight: 0.0018
7600 - 8295 -> Weight: 0.00668
1992 - 8296 -> Weight: 0.00694
5266 - 8297 -> Weight: 0.01054
2241 - 8298 -> Weight: 0.00713
4880 - 8299 -> Weight: 0.00215
3592 - 8300 -> Weight: 0.00597
3791 - 8301 -> Weight: 0.00194
3733 - 8302 -> Weight: 0.00748
3930 - 8303 -> Weight: 0.01018
4542 - 8304 -> Weight: 0.00746
4705 - 8305 -> Weight: 0.00231
1771 - 8306 -> Weight: 0.00685
```

```
7620 - 8307 -> Weight: 0.00465
1771 - 8308 -> Weight: 0.00447
5705 - 8309 -> Weight: 0.00434
4912 - 8310 -> Weight: 0.00683
673 - 8311 -> Weight: 0.00522
241 - 8312 -> Weight: 0.00726
46 - 8313 -> Weight: 0.00472
3850 - 8314 -> Weight: 0.00454
1078 - 8315 -> Weight: 0.00127
4791 - 8316 -> Weight: 0.0057
5026 - 8317 -> Weight: 0.00175
812 - 8318 -> Weight: 0.00301
3810 - 8319 -> Weight: 0.00673
3386 - 8320 -> Weight: 0.01623
5269 - 8321 -> Weight: 0.00212
435 - 8322 -> Weight: 0.00446
7418 - 8323 -> Weight: 6.9E-4
1959 - 8324 -> Weight: 0.006
7650 - 8325 -> Weight: 0.00702
6927 - 8326 -> Weight: 0.00256
6899 - 8327 -> Weight: 0.00318
3888 - 8328 -> Weight: 0.00468
288 - 8329 -> Weight: 0.00684
5856 - 8330 -> Weight: 0.00271
845 - 8331 -> Weight: 0.00675
4177 - 8332 -> Weight: 0.00983
4063 - 8333 -> Weight: 0.00304
2736 - 8334 -> Weight: 0.00713
5249 - 8335 -> Weight: 0.00617
7485 - 8336 -> Weight: 0.00473
1423 - 8337 -> Weight: 0.0048
5952 - 8338 -> Weight: 0.00379
914 - 8339 -> Weight: 0.00469
6577 - 8340 -> Weight: 0.00683
1620 - 8341 -> Weight: 0.0076
4509 - 8342 -> Weight: 0.00744
438 - 8343 -> Weight: 0.0073
2057 - 8344 -> Weight: 0.00735
4516 - 8345 -> Weight: 0.00144
4377 - 8346 -> Weight: 0.00397
4894 - 8347 -> Weight: 0.0033
6230 - 8348 -> Weight: 0.0048
3312 - 8349 -> Weight: 0.00483
```

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2199 - 8350 -> Weight: 0.0046
4005 - 8351 -> Weight: 0.00279
2850 - 8352 -> Weight: 0.00557
2792 - 8353 -> Weight: 0.00621
3756 - 8354 -> Weight: 0.00159
5250 - 8355 -> Weight: 0.01122
4524 - 8356 -> Weight: 0.01118
4249 - 8357 -> Weight: 0.01072
3027 - 8358 -> Weight: 0.00779
2056 - 8359 -> Weight: 0.004
5482 - 8360 -> Weight: 0.0056
2680 - 8361 -> Weight: 0.00376
7367 - 8362 -> Weight: 0.00481
2611 - 8363 -> Weight: 0.00244
1791 - 8364 -> Weight: 0.00628
4029 - 8365 -> Weight: 0.0039
1267 - 8366 -> Weight: 0.00539
2770 - 8367 -> Weight: 0.00114
7928 - 8368 -> Weight: 0.00338
4491 - 8369 -> Weight: 0.00245
4203 - 8370 -> Weight: 0.00444
3544 - 8371 -> Weight: 0.00448
7925 - 8372 -> Weight: 0.00837
4010 - 8373 -> Weight: 0.01282
1109 - 8374 -> Weight: 0.00804
5502 - 8375 -> Weight: 0.00938
7221 - 8376 -> Weight: 0.00604
3024 - 8377 -> Weight: 5.7E-4
6192 - 8378 -> Weight: 0.0048
681 - 8379 -> Weight: 0.00517
2758 - 8380 -> Weight: 9.3E-4
7108 - 8381 -> Weight: 0.003
3720 - 8382 -> Weight: 0.01243
7890 - 8383 -> Weight: 0.00362
1012 - 8384 -> Weight: 0.00297
4569 - 8385 -> Weight: 0.00815
4182 - 8386 -> Weight: 0.00788
1349 - 8387 -> Weight: 0.00398
3599 - 8388 -> Weight: 0.00594
7894 - 8389 -> Weight: 0.0032
2829 - 8390 -> Weight: 0.00896
7843 - 8391 -> Weight: 0.00643
1945 - 8392 -> Weight: 0.00766
```

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7553 - 8393 -> Weight: 0.01381
7130 - 8394 -> Weight: 0.0119
1730 - 8395 -> Weight: 0.00464
6353 - 8396 -> Weight: 0.00375
2485 - 8397 -> Weight: 0.00326
7311 - 8398 -> Weight: 0.01244
7550 - 8399 -> Weight: 0.00361
4100 - 8400 -> Weight: 0.00397
2621 - 8401 -> Weight: 0.0026
528 - 8402 -> Weight: 0.01066
2692 - 8403 -> Weight: 0.0059
6537 - 8404 -> Weight: 5.4E-4
1943 - 8405 -> Weight: 0.00645
3983 - 8406 -> Weight: 0.00695
3673 - 8407 -> Weight: 0.00359
5713 - 8408 -> Weight: 0.00296
2426 - 8409 -> Weight: 0.00275
3666 - 8410 -> Weight: 0.00889
1589 - 8411 -> Weight: 0.00424
4138 - 8412 -> Weight: 0.00688
7297 - 8413 -> Weight: 0.00566
6379 - 8414 -> Weight: 0.00247
3544 - 8415 -> Weight: 0.00738
8132 - 8416 -> Weight: 2.3E-4
6349 - 8417 -> Weight: 0.00766
1818 - 8418 -> Weight: 0.0086
1536 - 8419 -> Weight: 0.0089
4809 - 8420 -> Weight: 0.00665
6998 - 8421 -> Weight: 0.00381
3359 - 8422 -> Weight: 0.0058
6180 - 8423 -> Weight: 0.01265
3473 - 8424 -> Weight: 0.00357
5744 - 8425 -> Weight: 0.00727
2016 - 8426 -> Weight: 0.00564
773 - 8427 -> Weight: 0.00677
4839 - 8428 -> Weight: 0.00172
2214 - 8429 -> Weight: 0.00225
492 - 8430 -> Weight: 0.00184
47 - 8431 -> Weight: 0.00545
2202 - 8432 -> Weight: 0.00388
8171 - 8433 -> Weight: 0.00567
7373 - 8434 -> Weight: 0.00449
3909 - 8435 -> Weight: 0.00708
```

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5996 - 8436 -> Weight: 0.0086
7661 - 8437 -> Weight: 0.00399
8400 - 8438 -> Weight: 0.00456
6783 - 8439 -> Weight: 0.00415
3779 - 8440 -> Weight: 0.01232
4941 - 8441 -> Weight: 0.00413
603 - 8442 -> Weight: 0.00758
2234 - 8443 -> Weight: 0.00311
4922 - 8444 -> Weight: 0.01179
1311 - 8445 -> Weight: 0.00948
8384 - 8446 -> Weight: 0.00782
5600 - 8447 -> Weight: 0.0087
4990 - 8448 -> Weight: 0.00994
1735 - 8449 -> Weight: 0.00647
3809 - 8450 -> Weight: 0.00456
1405 - 8451 -> Weight: 0.00806
5590 - 8452 -> Weight: 0.00556
8227 - 8453 -> Weight: 0.00184
286 - 8454 -> Weight: 0.00239
3354 - 8455 -> Weight: 0.00481
2613 - 8456 -> Weight: 0.00745
5909 - 8457 -> Weight: 0.00545
325 - 8458 -> Weight: 0.00149
4127 - 8459 -> Weight: 0.00542
3817 - 8460 -> Weight: 0.00679
1146 - 8461 -> Weight: 0.00132
6713 - 8462 -> Weight: 0.00345
6732 - 8463 -> Weight: 0.00483
2632 - 8464 -> Weight: 0.00272
6828 - 8465 -> Weight: 0.0045
8253 - 8466 -> Weight: 0.00503
2945 - 8467 -> Weight: 0.00444
5777 - 8468 -> Weight: 0.00773
6793 - 8469 -> Weight: 0.00404
6309 - 8470 -> Weight: 0.00556
4722 - 8471 -> Weight: 0.01183
3587 - 8472 -> Weight: 0.00739
4913 - 8473 -> Weight: 0.00511
6536 - 8474 -> Weight: 0.00681
7690 - 8475 -> Weight: 0.00852
6485 - 8476 -> Weight: 0.00301
5591 - 8477 -> Weight: 0.00513
5452 - 8478 -> Weight: 0.00519
```

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1504 - 8479 -> Weight: 0.00616
3070 - 8480 -> Weight: 0.00474
8311 - 8481 -> Weight: 0.00367
1041 - 8482 -> Weight: 0.00766
2832 - 8483 -> Weight: 0.00399
1213 - 8484 -> Weight: 0.01102
559 - 8485 -> Weight: 0.00748
7432 - 8486 -> Weight: 4.4E-4
4104 - 8487 -> Weight: 0.00728
6989 - 8488 -> Weight: 0.01071
2040 - 8489 -> Weight: 0.00367
7625 - 8490 -> Weight: 0.00585
8137 - 8491 -> Weight: 0.00926
1253 - 8492 -> Weight: 0.00672
4521 - 8493 -> Weight: 0.00566
5689 - 8494 -> Weight: 0.00666
1653 - 8495 -> Weight: 0.00918
6266 - 8496 -> Weight: 0.00568
3699 - 8497 -> Weight: 0.00865
3243 - 8498 -> Weight: 0.00153
6289 - 8499 -> Weight: 0.0041
5845 - 8500 -> Weight: 0.00819
5392 - 8501 -> Weight: 0.00855
7682 - 8502 -> Weight: 0.00516
3896 - 8503 -> Weight: 0.00508
1649 - 8504 -> Weight: 0.0034
6854 - 8505 -> Weight: 0.00648
4988 - 8506 -> Weight: 0.00184
768 - 8507 -> Weight: 0.01282
5901 - 8508 -> Weight: 0.00767
6906 - 8509 -> Weight: 0.00379
3800 - 8510 -> Weight: 0.00195
5529 - 8511 -> Weight: 0.00291
2773 - 8512 -> Weight: 0.00485
1510 - 8513 -> Weight: 0.00595
5536 - 8514 -> Weight: 0.00837
7570 - 8515 -> Weight: 0.00585
8269 - 8516 -> Weight: 0.00774
4243 - 8517 -> Weight: 0.00546
1711 - 8518 -> Weight: 0.00631
861 - 8519 -> Weight: 0.00739
4426 - 8520 -> Weight: 0.00413
1210 - 8521 -> Weight: 0.00316
```

```
8335 - 8522 -> Weight: 0.00321
```

- 2933 8523 -> Weight: 0.00428
- 5977 8524 -> Weight: 0.00826
- 2310 8525 -> Weight: 0.00426
- 858 8526 -> Weight: 0.00226
- 4224 8527 -> Weight: 0.00916
- 6862 8528 -> Weight: 0.00411
- 164 8529 -> Weight: 7.9E-4
- 6653 8530 -> Weight: 0.0077
- 695 8531 -> Weight: 0.00459
- 8189 8532 -> Weight: 0.00418
- 6311 8533 -> Weight: 0.00914
- 622 8534 -> Weight: 0.00423
- 3678 8535 -> Weight: 0.00802
- 944 8536 -> Weight: 0.0065
- 2289 8537 -> Weight: 0.00818
- 5383 8538 -> Weight: 0.0036
- 4484 8539 -> Weight: 0.00591
- 4037 8540 -> Weight: 0.00814
- 3529 8541 -> Weight: 0.00558
- 892 8542 -> Weight: 0.00143
- 4795 8543 -> Weight: 0.00377
- 483 8544 -> Weight: 0.00819
- 1565 8545 -> Weight: 0.0095
- 1575 8546 -> Weight: 0.0021
- 6017 8547 -> Weight: 0.00571
- 7518 8548 -> Weight: 0.004
- 1351 8549 -> Weight: 0.00437
- 827 8550 -> Weight: 0.00375
- 3578 8551 -> Weight: 0.00194
- 2147 8552 -> Weight: 0.00775
- 3946 8553 -> Weight: 0.00436
- 7611 8554 -> Weight: 0.00269
- 3696 8555 -> Weight: 0.00474
- 2734 8556 -> Weight: 0.00309
- 6592 8557 -> Weight: 0.00253
- 8211 8558 -> Weight: 0.0028
- 4095 8559 -> Weight: 0.00171
- 3550 8560 -> Weight: 0.00624
- 7142 8561 -> Weight: 0.00572
- 3820 8562 -> Weight: 0.00144
- 7501 8563 -> Weight: 0.0052
- 5252 8564 -> Weight: 0.00651

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2243 - 8565 -> Weight: 0.00231
4282 - 8566 -> Weight: 0.00221
5983 - 8567 -> Weight: 0.00435
5604 - 8568 -> Weight: 0.00418
4001 - 8569 -> Weight: 0.00444
5022 - 8570 -> Weight: 0.00443
3492 - 8571 -> Weight: 0.00783
8373 - 8572 -> Weight: 0.00387
5778 - 8573 -> Weight: 0.00574
4659 - 8574 -> Weight: 0.0046
4779 - 8575 -> Weight: 0.00485
1264 - 8576 -> Weight: 0.00744
724 - 8577 -> Weight: 0.0024
3170 - 8578 -> Weight: 0.00497
3063 - 8579 -> Weight: 0.00285
6440 - 8580 -> Weight: 0.0016
4150 - 8581 -> Weight: 0.00382
1466 - 8582 -> Weight: 0.00655
2169 - 8583 -> Weight: 0.01308
8492 - 8584 -> Weight: 0.01203
4928 - 8585 -> Weight: 0.00308
1754 - 8586 -> Weight: 6.6E-4
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8376 - 8588 -> Weight: 0.00649
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5541 - 8592 -> Weight: 0.0036
174 - 8593 -> Weight: 0.0023
6018 - 8594 -> Weight: 0.00625
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6670 - 8596 -> Weight: 0.00686
741 - 8597 -> Weight: 0.0033
1469 - 8598 -> Weight: 0.00497
4759 - 8599 -> Weight: 0.00901
291 - 8600 -> Weight: 0.01003
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3908 - 8602 -> Weight: 0.00884
8401 - 8603 -> Weight: 0.00939
1399 - 8604 -> Weight: 0.00626
6412 - 8605 -> Weight: 0.00569
8521 - 8606 -> Weight: 0.00721
7095 - 8607 -> Weight: 0.01012
```

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2872 - 8608 -> Weight: 0.00522
7667 - 8609 -> Weight: 0.00767
8246 - 8610 -> Weight: 0.00747
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4166 - 8612 -> Weight: 0.00837
6411 - 8613 -> Weight: 0.00637
4254 - 8614 -> Weight: 0.00396
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4225 - 8616 -> Weight: 0.00311
4357 - 8617 -> Weight: 0.00278
2884 - 8618 -> Weight: 0.00298
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1688 - 8620 -> Weight: 0.00533
8138 - 8621 -> Weight: 0.00116
5015 - 8622 -> Weight: 0.00118
6139 - 8623 -> Weight: 0.00676
1446 - 8624 -> Weight: 0.0074
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5769 - 8627 -> Weight: 0.00316
2648 - 8628 -> Weight: 0.0063
5673 - 8629 -> Weight: 0.00538
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5279 - 8631 -> Weight: 0.00491
7599 - 8632 -> Weight: 0.00619
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3477 - 8635 -> Weight: 0.00994
2229 - 8636 -> Weight: 0.00595
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816 - 8638 -> Weight: 0.00255
6895 - 8639 -> Weight: 0.009
3606 - 8640 -> Weight: 0.00315
5665 - 8641 -> Weight: 0.01158
7502 - 8642 -> Weight: 0.00518
7668 - 8643 -> Weight: 0.00515
2121 - 8644 -> Weight: 0.00309
3918 - 8645 -> Weight: 0.00886
6744 - 8646 -> Weight: 0.00422
4441 - 8647 -> Weight: 0.00355
8356 - 8648 -> Weight: 0.01024
730 - 8649 -> Weight: 0.00375
5081 - 8650 -> Weight: 0.00531
```

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6725 - 8654 -> Weight: 0.0038
2060 - 8655 -> Weight: 0.00258
5182 - 8656 -> Weight: 0.00271
755 - 8657 -> Weight: 0.00564
7364 - 8658 -> Weight: 0.00263
5677 - 8659 -> Weight: 0.00833
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4674 - 8663 -> Weight: 0.01502
4601 - 8664 -> Weight: 0.00631
3435 - 8665 -> Weight: 0.00493
4806 - 8666 -> Weight: 0.00767
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6929 - 8670 -> Weight: 0.00728
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7223 - 8672 -> Weight: 0.00473
6782 - 8673 -> Weight: 0.00872
3843 - 8674 -> Weight: 0.00465
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5272 - 8677 -> Weight: 0.00531
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7547 - 8681 -> Weight: 0.00771
5019 - 8682 -> Weight: 0.00855
7353 - 8683 -> Weight: 0.0091
5313 - 8684 -> Weight: 8.2E-4
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7561 - 8687 -> Weight: 0.00505
1019 - 8688 -> Weight: 0.00384
3542 - 8689 -> Weight: 0.01067
8404 - 8690 -> Weight: 0.00158
8267 - 8691 -> Weight: 0.00493
4903 - 8692 -> Weight: 0.0083
```

8005 - 8693 -> Weight: 0.00404

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738 - 8694 -> Weight: 0.00418
2580 - 8695 -> Weight: 0.0106
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1233 - 8697 -> Weight: 0.00733
4326 - 8698 -> Weight: 0.01382
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829 - 8703 -> Weight: 0.00545
520 - 8704 -> Weight: 0.01059
760 - 8705 -> Weight: 0.00781
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2098 - 8707 -> Weight: 0.00581
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474 - 8714 -> Weight: 0.00764
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5605 - 8722 -> Weight: 0.00687
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301 - 8724 -> Weight: 0.00681
2278 - 8725 -> Weight: 0.00527
8260 - 8726 -> Weight: 0.00687
7542 - 8727 -> Weight: 0.00342
1095 - 8728 -> Weight: 0.00132
809 - 8729 -> Weight: 0.00421
5010 - 8730 -> Weight: 0.00198
6190 - 8731 -> Weight: 0.00192
5121 - 8732 -> Weight: 0.01304
5077 - 8733 -> Weight: 0.00507
7059 - 8734 -> Weight: 0.00612
163 - 8735 -> Weight: 0.00211
1685 - 8736 -> Weight: 0.00514
```

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6772 - 8737 -> Weight: 0.00581
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7217 - 8742 -> Weight: 0.00442
6697 - 8743 -> Weight: 0.00473
5170 - 8744 -> Weight: 0.00493
6863 - 8745 -> Weight: 0.00563
632 - 8746 -> Weight: 0.00741
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5755 - 8748 -> Weight: 0.00301
5946 - 8749 -> Weight: 0.0072
171 - 8750 -> Weight: 0.01236
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1061 - 8755 -> Weight: 0.00142
2858 - 8756 -> Weight: 0.00447
3985 - 8757 -> Weight: 0.00456
8135 - 8758 -> Weight: 0.00338
1549 - 8759 -> Weight: 8.1E-4
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8392 - 8761 -> Weight: 0.00751
3944 - 8762 -> Weight: 0.00774
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1391 - 8764 -> Weight: 0.00482
6772 - 8765 -> Weight: 0.00834
5203 - 8766 -> Weight: 0.00496
5974 - 8767 -> Weight: 0.00358
6837 - 8768 -> Weight: 0.00449
3586 - 8769 -> Weight: 0.00369
8541 - 8770 -> Weight: 0.00342
8389 - 8771 -> Weight: 0.01049
7329 - 8772 -> Weight: 0.00842
5518 - 8773 -> Weight: 0.0019
2988 - 8774 -> Weight: 0.00182
2789 - 8775 -> Weight: 0.00823
2839 - 8776 -> Weight: 4.3E-4
1200 - 8777 -> Weight: 0.00271
2124 - 8778 -> Weight: 0.00275
1382 - 8779 -> Weight: 0.00196
```

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2085 - 8787 -> Weight: 0.00642
3289 - 8788 -> Weight: 0.00146
3881 - 8789 -> Weight: 4.6E-4
2523 - 8790 -> Weight: 0.00652
2037 - 8791 -> Weight: 0.00544
1682 - 8792 -> Weight: 5.6E-4
8678 - 8793 -> Weight: 0.00795
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7219 - 8798 -> Weight: 0.008
6123 - 8799 -> Weight: 0.00859
1078 - 8800 -> Weight: 0.00407
6072 - 8801 -> Weight: 0.00176
1846 - 8802 -> Weight: 0.00199
5775 - 8803 -> Weight: 0.00572
2223 - 8804 -> Weight: 0.00351
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7727 - 8806 -> Weight: 0.00287
2012 - 8807 -> Weight: 0.00207
6218 - 8808 -> Weight: 0.00806
6544 - 8809 -> Weight: 0.0035
539 - 8810 -> Weight: 0.00568
7459 - 8811 -> Weight: 0.00705
2689 - 8812 -> Weight: 0.00386
3016 - 8813 -> Weight: 0.0032
2125 - 8814 -> Weight: 0.0027
5232 - 8815 -> Weight: 0.00256
1472 - 8816 -> Weight: 0.00364
623 - 8817 -> Weight: 0.0075
269 - 8818 -> Weight: 0.00558
6226 - 8819 -> Weight: 0.00952
1254 - 8820 -> Weight: 8.3E-4
247 - 8821 -> Weight: 0.00454
4952 - 8822 -> Weight: 0.01005
```

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3299 - 8830 -> Weight: 0.00492
7829 - 8831 -> Weight: 0.0062
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6290 - 8833 -> Weight: 0.0011
6879 - 8834 -> Weight: 0.00835
7309 - 8835 -> Weight: 0.00229
8744 - 8836 -> Weight: 5.4E-4
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2172 - 8838 -> Weight: 0.00305
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842 - 8844 -> Weight: 0.00324
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3848 - 8846 -> Weight: 0.00361
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2940 - 8849 -> Weight: 0.0075
5297 - 8850 -> Weight: 0.00235
2148 - 8851 -> Weight: 0.00179
2316 - 8852 -> Weight: 0.00236
4293 - 8853 -> Weight: 0.00553
6936 - 8854 -> Weight: 0.00941
547 - 8855 -> Weight: 0.00595
1678 - 8856 -> Weight: 0.00762
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7381 - 8860 -> Weight: 0.00491
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1075 - 8863 -> Weight: 0.00504
7794 - 8864 -> Weight: 0.0109
7144 - 8865 -> Weight: 0.00366
```

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11 - 8869 -> Weight: 0.01037
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5888 - 8871 -> Weight: 0.00507
7295 - 8872 -> Weight: 0.0035
3407 - 8873 -> Weight: 0.00506
7150 - 8874 -> Weight: 0.00799
3956 - 8875 -> Weight: 0.00293
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454 - 8877 -> Weight: 0.01108
3384 - 8878 -> Weight: 0.00717
6286 - 8879 -> Weight: 0.00363
6955 - 8880 -> Weight: 0.00549
8162 - 8881 -> Weight: 0.00621
8332 - 8882 -> Weight: 0.00664
7637 - 8883 -> Weight: 0.00316
6456 - 8884 -> Weight: 0.00363
8108 - 8885 -> Weight: 0.00186
5503 - 8886 -> Weight: 0.00518
1918 - 8887 -> Weight: 0.00457
1900 - 8888 -> Weight: 0.00978
3697 - 8889 -> Weight: 0.00309
6058 - 8890 -> Weight: 0.00315
3987 - 8891 -> Weight: 0.00589
7817 - 8892 -> Weight: 0.00313
3677 - 8893 -> Weight: 0.01005
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5150 - 8896 -> Weight: 0.00942
1180 - 8897 -> Weight: 0.00987
5270 - 8898 -> Weight: 8.4E-4
6823 - 8899 -> Weight: 0.00408
2354 - 8900 -> Weight: 0.00762
5808 - 8901 -> Weight: 0.00456
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5505 - 8903 -> Weight: 0.00243
1304 - 8904 -> Weight: 0.00184
4079 - 8905 -> Weight: 0.00452
3386 - 8906 -> Weight: 0.00837
2689 - 8907 -> Weight: 0.00282
8540 - 8908 -> Weight: 0.00179
```

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8663 - 8909 -> Weight: 0.00885
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4008 - 8914 -> Weight: 0.0029
2226 - 8915 -> Weight: 0.00722
1096 - 8916 -> Weight: 0.01062
830 - 8917 -> Weight: 0.00323
6563 - 8918 -> Weight: 0.00391
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7481 - 8920 -> Weight: 0.00981
3423 - 8921 -> Weight: 0.00925
5039 - 8922 -> Weight: 0.00229
1379 - 8923 -> Weight: 0.00324
1018 - 8924 -> Weight: 0.00686
8839 - 8925 -> Weight: 0.00212
2631 - 8926 -> Weight: 0.00358
1631 - 8927 -> Weight: 0.00592
7547 - 8928 -> Weight: 6.2E-4
2708 - 8929 -> Weight: 0.00554
5457 - 8930 -> Weight: 0.00244
5055 - 8931 -> Weight: 0.01051
6034 - 8932 -> Weight: 0.00592
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1939 - 8934 -> Weight: 0.00422
933 - 8935 -> Weight: 0.00477
2854 - 8936 -> Weight: 0.01081
2516 - 8937 -> Weight: 0.0043
2911 - 8938 -> Weight: 0.00884
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5577 - 8940 -> Weight: 0.00665
2594 - 8941 -> Weight: 0.00551
7469 - 8942 -> Weight: 0.00681
8069 - 8943 -> Weight: 0.00621
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7115 - 8946 -> Weight: 0.01138
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7089 - 8950 -> Weight: 0.00297
7146 - 8951 -> Weight: 0.00318
```

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5180 - 8955 -> Weight: 0.0056
618 - 8956 -> Weight: 0.00612
8680 - 8957 -> Weight: 0.00299
1230 - 8958 -> Weight: 0.0069
1228 - 8959 -> Weight: 0.00201
1757 - 8960 -> Weight: 0.00219
8897 - 8961 -> Weight: 0.00301
3188 - 8962 -> Weight: 0.00765
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3107 - 8964 -> Weight: 0.00246
400 - 8965 -> Weight: 0.0038
1298 - 8966 -> Weight: 0.00759
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7554 - 8969 -> Weight: 0.00241
8356 - 8970 -> Weight: 0.00228
6068 - 8971 -> Weight: 0.00233
2561 - 8972 -> Weight: 0.00191
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5729 - 8974 -> Weight: 0.00853
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1679 - 8977 -> Weight: 0.00416
3238 - 8978 -> Weight: 0.00383
4655 - 8979 -> Weight: 0.00888
6087 - 8980 -> Weight: 0.00955
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7281 - 8982 -> Weight: 0.00801
3211 - 8983 -> Weight: 0.0117
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6263 - 8985 -> Weight: 0.00487
792 - 8986 -> Weight: 0.00471
2754 - 8987 -> Weight: 0.00285
2773 - 8988 -> Weight: 0.00711
6560 - 8989 -> Weight: 0.00301
6427 - 8990 -> Weight: 0.0104
5088 - 8991 -> Weight: 9.6E-4
2682 - 8992 -> Weight: 0.00938
5299 - 8993 -> Weight: 0.00563
5113 - 8994 -> Weight: 0.00426
```

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8365 - 8999 -> Weight: 0.00382
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8209 - 9001 -> Weight: 0.0082
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1930 - 9003 -> Weight: 0.00421
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5130 - 9007 -> Weight: 0.005
6803 - 9008 -> Weight: 0.00288
4837 - 9009 -> Weight: 0.00387
3080 - 9010 -> Weight: 0.00453
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1169 - 9012 -> Weight: 0.0056
4595 - 9013 -> Weight: 0.00115
2511 - 9014 -> Weight: 0.00395
8368 - 9015 -> Weight: 0.00356
5918 - 9016 -> Weight: 0.00648
8514 - 9017 -> Weight: 0.00507
2408 - 9018 -> Weight: 0.0031
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1831 - 9024 -> Weight: 0.00862
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6247 - 9026 -> Weight: 0.00413
8931 - 9027 -> Weight: 2.3E-4
8791 - 9028 -> Weight: 0.00218
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1553 - 9031 -> Weight: 0.00664
8370 - 9032 -> Weight: 0.00853
5242 - 9033 -> Weight: 0.00342
8976 - 9034 -> Weight: 0.00521
2188 - 9035 -> Weight: 0.00489
3526 - 9036 -> Weight: 0.00511
8670 - 9037 -> Weight: 0.00834
```

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1720 - 9039 -> Weight: 0.00687
1753 - 9040 -> Weight: 0.0042
1392 - 9041 -> Weight: 0.00421
3105 - 9042 -> Weight: 0.01108
5044 - 9043 -> Weight: 0.00901
1498 - 9044 -> Weight: 0.00862
6919 - 9045 -> Weight: 0.00809
1461 - 9046 -> Weight: 0.00615
2290 - 9047 -> Weight: 0.00748
2161 - 9048 -> Weight: 0.0037
2463 - 9049 -> Weight: 0.00621
8362 - 9050 -> Weight: 0.00539
419 - 9051 -> Weight: 0.00329
1886 - 9052 -> Weight: 0.00596
3977 - 9053 -> Weight: 5.4E-4
5789 - 9054 -> Weight: 0.00118
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3946 - 9056 -> Weight: 0.00679
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7867 - 9058 -> Weight: 0.00654
8837 - 9059 -> Weight: 0.00261
459 - 9060 -> Weight: 0.00438
3161 - 9061 -> Weight: 0.01704
1627 - 9062 -> Weight: 0.00596
7399 - 9063 -> Weight: 0.00794
3950 - 9064 -> Weight: 0.00415
2330 - 9065 -> Weight: 0.00521
2676 - 9066 -> Weight: 0.0072
7589 - 9067 -> Weight: 0.00363
8601 - 9068 -> Weight: 0.00398
5309 - 9069 -> Weight: 0.00734
755 - 9070 -> Weight: 0.00686
976 - 9071 -> Weight: 0.00253
6270 - 9072 -> Weight: 0.0027
9042 - 9073 -> Weight: 0.00416
8633 - 9074 -> Weight: 0.00262
9070 - 9075 -> Weight: 0.00566
2038 - 9076 -> Weight: 0.00879
8130 - 9077 -> Weight: 0.0099
8881 - 9078 -> Weight: 0.0061
1938 - 9079 -> Weight: 0.00405
4450 - 9080 -> Weight: 0.00595
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2358 - 9098 -> Weight: 0.0041
7870 - 9099 -> Weight: 0.0075
1778 - 9100 -> Weight: 0.00309
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505 - 9107 -> Weight: 0.00782
8322 - 9108 -> Weight: 0.00685
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8569 - 9112 -> Weight: 0.00202
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1231 - 9114 -> Weight: 0.00108
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326 - 9116 -> Weight: 0.00883
714 - 9117 -> Weight: 0.00151
2482 - 9118 -> Weight: 0.00587
4540 - 9119 -> Weight: 0.00793
2184 - 9120 -> Weight: 0.00568
3084 - 9121 -> Weight: 0.00158
4708 - 9122 -> Weight: 0.00712
2268 - 9123 -> Weight: 0.00518
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4640 - 9124 -> Weight: 0.00963
7619 - 9125 -> Weight: 0.00463
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8804 - 9127 -> Weight: 0.00301
2468 - 9128 -> Weight: 0.00134
8834 - 9129 -> Weight: 0.00322
2093 - 9130 -> Weight: 0.00647
5141 - 9131 -> Weight: 0.00403
8539 - 9132 -> Weight: 0.00364
1906 - 9133 -> Weight: 0.01049
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7833 - 9136 -> Weight: 0.0076
7490 - 9137 -> Weight: 0.00569
6909 - 9138 -> Weight: 0.00203
7423 - 9139 -> Weight: 0.00875
6356 - 9140 -> Weight: 0.00613
3158 - 9141 -> Weight: 0.00472
2670 - 9142 -> Weight: 0.0016
8568 - 9143 -> Weight: 0.00293
1835 - 9144 -> Weight: 0.00448
101 - 9145 -> Weight: 0.00907
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7783 - 9147 -> Weight: 0.00385
5332 - 9148 -> Weight: 0.00638
7252 - 9149 -> Weight: 0.00316
2176 - 9150 -> Weight: 0.00193
6549 - 9151 -> Weight: 0.00637
1808 - 9152 -> Weight: 0.0014
2720 - 9153 -> Weight: 0.00134
8485 - 9154 -> Weight: 0.00721
1868 - 9155 -> Weight: 0.00343
8609 - 9156 -> Weight: 0.00308
6857 - 9157 -> Weight: 0.00548
1169 - 9158 -> Weight: 0.00436
8745 - 9159 -> Weight: 0.00553
7303 - 9160 -> Weight: 0.00542
1137 - 9161 -> Weight: 0.00767
3689 - 9162 -> Weight: 0.0097
1400 - 9163 -> Weight: 0.0079
320 - 9164 -> Weight: 0.00348
2472 - 9165 -> Weight: 0.00927
3343 - 9166 -> Weight: 0.00985
```

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7730 - 9167 -> Weight: 0.00707
7445 - 9168 -> Weight: 0.00272
8795 - 9169 -> Weight: 0.00539
7727 - 9170 -> Weight: 0.00678
1361 - 9171 -> Weight: 0.01221
4777 - 9172 -> Weight: 0.00438
5804 - 9173 -> Weight: 0.0052
572 - 9174 -> Weight: 0.00117
3676 - 9175 -> Weight: 0.00516
2851 - 9176 -> Weight: 0.00371
5956 - 9177 -> Weight: 0.00462
5346 - 9178 -> Weight: 0.00423
6577 - 9179 -> Weight: 0.00422
3834 - 9180 -> Weight: 0.00374
7455 - 9181 -> Weight: 0.0024
4507 - 9182 -> Weight: 0.00374
1331 - 9183 -> Weight: 0.00195
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6069 - 9185 -> Weight: 0.00237
3418 - 9186 -> Weight: 0.00266
1964 - 9187 -> Weight: 0.01071
3514 - 9188 -> Weight: 0.00399
6474 - 9189 -> Weight: 0.00333
4958 - 9190 -> Weight: 0.00474
7833 - 9191 -> Weight: 0.00845
9094 - 9192 -> Weight: 0.00427
6245 - 9193 -> Weight: 0.00267
6933 - 9194 -> Weight: 0.00327
6387 - 9195 -> Weight: 0.00813
768 - 9196 -> Weight: 0.00347
3624 - 9197 -> Weight: 0.00894
5040 - 9198 -> Weight: 0.00492
6000 - 9199 -> Weight: 0.00424
8254 - 9200 -> Weight: 8.6E-4
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7322 - 9202 -> Weight: 0.00446
471 - 9203 -> Weight: 0.00694
4352 - 9204 -> Weight: 0.00376
3116 - 9205 -> Weight: 0.00286
8279 - 9206 -> Weight: 0.00454
1117 - 9207 -> Weight: 0.01167
7605 - 9208 -> Weight: 0.0015
2827 - 9209 -> Weight: 0.00664
```

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8043 - 9211 -> Weight: 0.00575
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5910 - 9213 -> Weight: 0.00686
7738 - 9214 -> Weight: 0.0044
2986 - 9215 -> Weight: 0.0093
7425 - 9216 -> Weight: 0.00403
3575 - 9217 -> Weight: 0.00415
1545 - 9218 -> Weight: 0.00467
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1743 - 9220 -> Weight: 0.00128
4594 - 9221 -> Weight: 0.00421
58 - 9222 -> Weight: 0.00736
8168 - 9223 -> Weight: 9.0E-4
1555 - 9224 -> Weight: 0.00647
1663 - 9225 -> Weight: 0.00661
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5685 - 9232 -> Weight: 0.00131
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7339 - 9246 -> Weight: 0.00346
2939 - 9247 -> Weight: 0.00863
3231 - 9248 -> Weight: 0.00787
2812 - 9249 -> Weight: 0.0016
2939 - 9250 -> Weight: 0.0011
6332 - 9251 -> Weight: 0.00413
386 - 9252 -> Weight: 0.00168
```

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4432 - 9254 -> Weight: 0.00193
7141 - 9255 -> Weight: 0.00479
6736 - 9256 -> Weight: 0.00761
2492 - 9257 -> Weight: 0.00553
2781 - 9258 -> Weight: 0.0013
5153 - 9259 -> Weight: 0.00523
8784 - 9260 -> Weight: 0.00549
5346 - 9261 -> Weight: 0.00452
5090 - 9262 -> Weight: 0.00425
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5555 - 9264 -> Weight: 0.00805
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1816 - 9266 -> Weight: 0.00803
9127 - 9267 -> Weight: 0.00688
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1043 - 9275 -> Weight: 0.003
9002 - 9276 -> Weight: 0.00177
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9166 - 9278 -> Weight: 0.00308
6631 - 9279 -> Weight: 0.01012
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610 - 9282 -> Weight: 0.00988
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8074 - 9284 -> Weight: 0.00107
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1580 - 9286 -> Weight: 0.00564
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8751 - 9291 -> Weight: 0.00631
3009 - 9292 -> Weight: 0.00765
7286 - 9293 -> Weight: 0.00436
8501 - 9294 -> Weight: 0.00907
2662 - 9295 -> Weight: 0.00171
```

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534 - 9296 -> Weight: 0.00804
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3208 - 9309 -> Weight: 0.0085
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6999 - 9323 -> Weight: 0.00196
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3165 - 9331 -> Weight: 0.00138
6404 - 9332 -> Weight: 0.00167
8044 - 9333 -> Weight: 0.00916
2510 - 9334 -> Weight: 0.00543
1247 - 9335 -> Weight: 0.00558
1397 - 9336 -> Weight: 0.00408
7186 - 9337 -> Weight: 0.00317
3880 - 9338 -> Weight: 0.00318
```

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1458 - 9339 -> Weight: 0.00479
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2471 - 9343 -> Weight: 0.00241
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6497 - 9345 -> Weight: 0.00413
2387 - 9346 -> Weight: 0.00909
7989 - 9347 -> Weight: 0.0081
3997 - 9348 -> Weight: 0.00218
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1463 - 9350 -> Weight: 6.9E-4
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2098 - 9363 -> Weight: 0.00372
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9047 - 9365 -> Weight: 0.00807
9222 - 9366 -> Weight: 0.01055
8298 - 9367 -> Weight: 0.0055
1887 - 9368 -> Weight: 0.00408
2952 - 9369 -> Weight: 0.00433
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2031 - 9371 -> Weight: 6.4E-4
7456 - 9372 -> Weight: 0.0051
9314 - 9373 -> Weight: 0.01112
3775 - 9374 -> Weight: 0.0048
3139 - 9375 -> Weight: 0.01064
314 - 9376 -> Weight: 0.00508
4177 - 9377 -> Weight: 0.00583
8046 - 9378 -> Weight: 0.00472
3319 - 9379 -> Weight: 0.00422
2342 - 9380 -> Weight: 0.00794
6157 - 9381 -> Weight: 0.00174
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10 - 9382 -> Weight: 0.01033
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6246 - 9385 -> Weight: 0.00554
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3711 - 9387 -> Weight: 0.00543
4455 - 9388 -> Weight: 0.00472
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876 - 9390 -> Weight: 0.00122
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4841 - 9419 -> Weight: 0.00816
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2951 - 9422 -> Weight: 0.0064
1613 - 9423 -> Weight: 0.00519
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7895 - 9424 -> Weight: 0.0036

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9305 - 9428 -> Weight: 0.00134
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4671 - 9432 -> Weight: 0.00724
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1698 - 9436 -> Weight: 7.7E-4
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3986 - 9438 -> Weight: 0.00532
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6081 - 9443 -> Weight: 7.5E-4
9116 - 9444 -> Weight: 0.00531
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8192 - 9462 -> Weight: 0.00971
4028 - 9463 -> Weight: 0.00239
7028 - 9464 -> Weight: 0.01141
3968 - 9465 -> Weight: 0.00722
6014 - 9466 -> Weight: 0.00176
7451 - 9467 -> Weight: 0.00645
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6145 - 9503 -> Weight: 0.00552
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4849 - 9509 -> Weight: 0.00501
1350 - 9510 -> Weight: 0.00279
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6281 - 9525 -> Weight: 0.00731
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5211 - 9537 -> Weight: 0.00496
1825 - 9538 -> Weight: 0.00252
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1197 - 9542 -> Weight: 0.00256
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2625 - 9547 -> Weight: 0.00743
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7146 - 9552 -> Weight: 0.00465
6673 - 9553 -> Weight: 0.00159
```

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3189 - 9596 -> Weight: 0.00124
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3024 - 9617 -> Weight: 0.00427
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9141 - 9639 -> Weight: 0.00649
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1600 - 9660 -> Weight: 0.00481
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9056 - 9663 -> Weight: 0.00194
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9364 - 9665 -> Weight: 0.00714
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2286 - 9673 -> Weight: 0.00494
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4730 - 9681 -> Weight: 0.00373
2758 - 9682 -> Weight: 0.00322
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1375 - 9690 -> Weight: 0.00576
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1021 - 9692 -> Weight: 0.00834
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5042 - 9701 -> Weight: 0.00711
9616 - 9702 -> Weight: 0.00411
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9386 - 9705 -> Weight: 0.00161
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1908 - 9707 -> Weight: 0.00172
294 - 9708 -> Weight: 0.00815
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8508 - 9710 -> Weight: 0.00782
3322 - 9711 -> Weight: 0.00356
9164 - 9712 -> Weight: 0.00636
3644 - 9713 -> Weight: 0.00552
7859 - 9714 -> Weight: 0.00398
9490 - 9715 -> Weight: 0.00262
5066 - 9716 -> Weight: 0.00747
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1220 - 9719 -> Weight: 0.00597
4346 - 9720 -> Weight: 0.00267
3326 - 9721 -> Weight: 0.00446
553 - 9722 -> Weight: 0.00463
7864 - 9723 -> Weight: 0.00187
6020 - 9724 -> Weight: 0.00808
8435 - 9725 -> Weight: 0.00853
```

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3793 - 9728 -> Weight: 0.00368
42 - 9729 -> Weight: 0.00756
110 - 9730 -> Weight: 0.0043
7288 - 9731 -> Weight: 0.00498
718 - 9732 -> Weight: 0.00587
8177 - 9733 -> Weight: 0.00212
8306 - 9734 -> Weight: 0.00154
2099 - 9735 -> Weight: 0.00262
1237 - 9736 -> Weight: 0.00545
6444 - 9737 -> Weight: 0.00431
3813 - 9738 -> Weight: 0.00725
2966 - 9739 -> Weight: 0.00165
8471 - 9740 -> Weight: 0.00477
6752 - 9741 -> Weight: 0.00538
9061 - 9742 -> Weight: 0.00955
668 - 9743 -> Weight: 0.00813
117 - 9744 -> Weight: 0.01237
9533 - 9745 -> Weight: 0.00399
7583 - 9746 -> Weight: 0.00381
5168 - 9747 -> Weight: 0.00465
5232 - 9748 -> Weight: 0.00729
8801 - 9749 -> Weight: 0.00131
6880 - 9750 -> Weight: 0.00627
7894 - 9751 -> Weight: 0.00629
2192 - 9752 -> Weight: 0.00298
5741 - 9753 -> Weight: 0.00276
5213 - 9754 -> Weight: 0.00632
5015 - 9755 -> Weight: 0.00169
1707 - 9756 -> Weight: 0.00494
5699 - 9757 -> Weight: 0.00415
4749 - 9758 -> Weight: 0.00354
1061 - 9759 -> Weight: 0.00584
4715 - 9760 -> Weight: 0.00145
5048 - 9761 -> Weight: 0.00375
6206 - 9762 -> Weight: 0.00578
5021 - 9763 -> Weight: 0.00168
7286 - 9764 -> Weight: 9.2E-4
6283 - 9765 -> Weight: 0.00159
206 - 9766 -> Weight: 0.00522
6799 - 9767 -> Weight: 0.00782
2179 - 9768 -> Weight: 0.00166
```

```
5231 - 9769 -> Weight: 0.00936
8377 - 9770 -> Weight: 0.0052
7282 - 9771 -> Weight: 0.00779
4283 - 9772 -> Weight: 0.00197
3523 - 9773 -> Weight: 0.00535
5074 - 9774 -> Weight: 0.00357
2987 - 9775 -> Weight: 0.00516
4936 - 9776 -> Weight: 0.01064
5324 - 9777 -> Weight: 0.0042
244 - 9778 -> Weight: 0.00793
3234 - 9779 -> Weight: 0.00366
9529 - 9780 -> Weight: 0.00564
5289 - 9781 -> Weight: 0.00293
4332 - 9782 -> Weight: 0.00304
5572 - 9783 -> Weight: 0.00335
929 - 9784 -> Weight: 0.00554
5352 - 9785 -> Weight: 0.0039
7807 - 9786 -> Weight: 0.00398
7014 - 9787 -> Weight: 0.00292
4300 - 9788 -> Weight: 0.00317
3786 - 9789 -> Weight: 0.00929
4676 - 9790 -> Weight: 0.004
1007 - 9791 -> Weight: 0.01438
3124 - 9792 -> Weight: 0.01012
3106 - 9793 -> Weight: 0.00307
8618 - 9794 -> Weight: 0.00549
3200 - 9795 -> Weight: 0.00221
9171 - 9796 -> Weight: 0.00812
3370 - 9797 -> Weight: 0.00447
4579 - 9798 -> Weight: 0.00832
5719 - 9799 -> Weight: 0.00821
7764 - 9800 -> Weight: 0.00527
3235 - 9801 -> Weight: 0.0046
2222 - 9802 -> Weight: 0.00775
3621 - 9803 -> Weight: 0.00224
1316 - 9804 -> Weight: 0.00148
8368 - 9805 -> Weight: 0.01099
4409 - 9806 -> Weight: 0.00741
5927 - 9807 -> Weight: 0.00207
9724 - 9808 -> Weight: 0.00697
3662 - 9809 -> Weight: 0.00437
8573 - 9810 -> Weight: 0.00793
```

7145 - 9811 -> Weight: 0.00147

```
1872 - 9812 -> Weight: 0.00266
6902 - 9813 -> Weight: 0.00942
1762 - 9814 -> Weight: 0.00307
4549 - 9815 -> Weight: 0.00615
8325 - 9816 -> Weight: 0.00355
132 - 9817 -> Weight: 0.00606
5175 - 9818 -> Weight: 0.00478
282 - 9819 -> Weight: 0.00166
2071 - 9820 -> Weight: 0.00595
8962 - 9821 -> Weight: 0.00319
4604 - 9822 -> Weight: 0.0062
4279 - 9823 -> Weight: 0.008
2597 - 9824 -> Weight: 0.00638
7232 - 9825 -> Weight: 0.00711
3742 - 9826 -> Weight: 0.00801
7735 - 9827 -> Weight: 0.00261
3333 - 9828 -> Weight: 0.01068
3463 - 9829 -> Weight: 0.00509
3099 - 9830 -> Weight: 0.00604
7017 - 9831 -> Weight: 0.01121
6101 - 9832 -> Weight: 0.00202
3947 - 9833 -> Weight: 0.00607
156 - 9834 -> Weight: 0.00876
3411 - 9835 -> Weight: 0.00856
4495 - 9836 -> Weight: 0.00493
9061 - 9837 -> Weight: 0.00529
7958 - 9838 -> Weight: 0.00563
67 - 9839 -> Weight: 0.00329
6484 - 9840 -> Weight: 0.00552
1575 - 9841 -> Weight: 0.00726
1134 - 9842 -> Weight: 0.008
9304 - 9843 -> Weight: 0.00781
9562 - 9844 -> Weight: 0.00147
322 - 9845 -> Weight: 0.00441
3843 - 9846 -> Weight: 0.00131
5039 - 9847 -> Weight: 0.0016
5065 - 9848 -> Weight: 0.00534
986 - 9849 -> Weight: 0.00556
5155 - 9850 -> Weight: 0.0037
7855 - 9851 -> Weight: 0.00583
746 - 9852 -> Weight: 0.00492
3281 - 9853 -> Weight: 6.6E-4
2502 - 9854 -> Weight: 0.004
```

```
3077 - 9855 -> Weight: 0.00554
5590 - 9856 -> Weight: 0.00242
6626 - 9857 -> Weight: 0.00232
346 - 9858 -> Weight: 0.00214
8389 - 9859 -> Weight: 0.00332
3542 - 9860 -> Weight: 0.0039
7825 - 9861 -> Weight: 0.00391
9738 - 9862 -> Weight: 0.00358
9274 - 9863 -> Weight: 0.00173
1653 - 9864 -> Weight: 0.00532
831 - 9865 -> Weight: 0.0057
6656 - 9866 -> Weight: 0.00278
3154 - 9867 -> Weight: 0.00545
970 - 9868 -> Weight: 0.00548
840 - 9869 -> Weight: 0.00855
8880 - 9870 -> Weight: 0.01328
6394 - 9871 -> Weight: 8.5E-4
4478 - 9872 -> Weight: 0.00195
8425 - 9873 -> Weight: 0.00732
6434 - 9874 -> Weight: 0.00719
5626 - 9875 -> Weight: 0.00267
7833 - 9876 -> Weight: 0.00317
6400 - 9877 -> Weight: 0.00232
4030 - 9878 -> Weight: 0.00353
6441 - 9879 -> Weight: 0.00668
4136 - 9880 -> Weight: 0.00728
2127 - 9881 -> Weight: 0.00453
5413 - 9882 -> Weight: 0.00454
8106 - 9883 -> Weight: 9.0E-4
5269 - 9884 -> Weight: 0.00179
9764 - 9885 -> Weight: 0.01449
1097 - 9886 -> Weight: 0.0031
7615 - 9887 -> Weight: 0.00393
528 - 9888 -> Weight: 0.00462
6670 - 9889 -> Weight: 0.00318
4781 - 9890 -> Weight: 0.00715
9430 - 9891 -> Weight: 0.00961
2957 - 9892 -> Weight: 0.00305
6361 - 9893 -> Weight: 0.00124
917 - 9894 -> Weight: 9.6E-4
7352 - 9895 -> Weight: 0.00211
8447 - 9896 -> Weight: 0.00227
5071 - 9897 -> Weight: 0.00636
```

```
7951 - 9898 -> Weight: 0.00711
3801 - 9899 -> Weight: 0.00338
8230 - 9900 -> Weight: 0.00719
9190 - 9901 -> Weight: 0.00537
4399 - 9902 -> Weight: 0.00683
3072 - 9903 -> Weight: 0.00184
3747 - 9904 -> Weight: 0.00635
3400 - 9905 -> Weight: 0.00547
7464 - 9906 -> Weight: 0.00526
9225 - 9907 -> Weight: 0.00794
4076 - 9908 -> Weight: 0.01457
3780 - 9909 -> Weight: 0.00787
8246 - 9910 -> Weight: 0.00421
1352 - 9911 -> Weight: 0.00381
9826 - 9912 -> Weight: 0.00217
369 - 9913 -> Weight: 0.00257
9015 - 9914 -> Weight: 0.0013
9043 - 9915 -> Weight: 0.00479
4739 - 9916 -> Weight: 0.00183
4706 - 9917 -> Weight: 0.00742
3982 - 9918 -> Weight: 0.0084
626 - 9919 -> Weight: 0.00421
3703 - 9920 -> Weight: 0.00708
59 - 9921 -> Weight: 0.00311
4203 - 9922 -> Weight: 0.00412
656 - 9923 -> Weight: 0.0064
6534 - 9924 -> Weight: 0.00385
4632 - 9925 -> Weight: 0.00587
6820 - 9926 -> Weight: 0.00231
9811 - 9927 -> Weight: 0.00696
8783 - 9928 -> Weight: 0.00627
3999 - 9929 -> Weight: 0.00604
3545 - 9930 -> Weight: 0.00182
2938 - 9931 -> Weight: 0.0067
7449 - 9932 -> Weight: 0.00447
4265 - 9933 -> Weight: 0.00564
5061 - 9934 -> Weight: 0.00358
290 - 9935 -> Weight: 0.00792
3837 - 9936 -> Weight: 0.00647
6908 - 9937 -> Weight: 0.01021
8038 - 9938 -> Weight: 0.00332
3422 - 9939 -> Weight: 0.01116
1941 - 9940 -> Weight: 0.00161
```

```
327 - 9941 -> Weight: 9.8E-4
1326 - 9942 -> Weight: 0.00316
5402 - 9943 -> Weight: 0.00639
3022 - 9944 -> Weight: 0.0056
319 - 9945 -> Weight: 0.00527
2398 - 9946 -> Weight: 0.00649
3705 - 9947 -> Weight: 0.00798
9249 - 9948 -> Weight: 0.00749
7876 - 9949 -> Weight: 0.00359
1470 - 9950 -> Weight: 0.0072
8388 - 9951 -> Weight: 0.00196
6635 - 9952 -> Weight: 0.00736
8793 - 9953 -> Weight: 0.0049
2228 - 9954 -> Weight: 0.00542
3123 - 9955 -> Weight: 0.00609
3627 - 9956 -> Weight: 0.00749
3823 - 9957 -> Weight: 0.00745
9513 - 9958 -> Weight: 0.00299
8235 - 9959 -> Weight: 0.00362
9144 - 9960 -> Weight: 0.00553
862 - 9961 -> Weight: 0.00398
5777 - 9962 -> Weight: 0.01301
3289 - 9963 -> Weight: 0.00772
3144 - 9964 -> Weight: 0.00408
574 - 9965 -> Weight: 0.00901
2149 - 9966 -> Weight: 0.00506
2193 - 9967 -> Weight: 0.0016
9152 - 9968 -> Weight: 0.00389
895 - 9969 -> Weight: 0.00352
157 - 9970 -> Weight: 0.00725
1953 - 9971 -> Weight: 0.00308
7070 - 9972 -> Weight: 0.00491
4926 - 9973 -> Weight: 0.01167
2746 - 9974 -> Weight: 0.00557
3975 - 9975 -> Weight: 0.00345
2461 - 9976 -> Weight: 0.00919
8355 - 9977 -> Weight: 0.00641
6708 - 9978 -> Weight: 0.00365
4361 - 9979 -> Weight: 0.00335
5558 - 9980 -> Weight: 0.00241
4394 - 9981 -> Weight: 0.0072
80 - 9982 -> Weight: 0.0033
2370 - 9983 -> Weight: 0.00281
```

```
4296 - 9984 -> Weight: 0.00263
1514 - 9985 -> Weight: 0.00254
9833 - 9986 -> Weight: 0.00305
2820 - 9987 -> Weight: 0.00497
3305 - 9988 -> Weight: 0.00767
2201 - 9989 -> Weight: 9.3E-4
8328 - 9990 -> Weight: 0.00242
3448 - 9991 -> Weight: 0.00934
9929 - 9992 -> Weight: 0.00389
7875 - 9993 -> Weight: 0.00662
6980 - 9994 -> Weight: 0.00831
782 - 9995 -> Weight: 0.00291
8892 - 9996 -> Weight: 0.00223
9898 - 9997 -> Weight: 0.00474
8258 - 9998 -> Weight: 0.00235
4672 - 9999 -> Weight: 0.00151
Final Weight: 68.15759
```

## 4. Conclusion

The use of weighted graphs can be very interesting for a lot of useful applications, like maps and rotes, and this is extremely important. The implementation of the Prim's Algorithm that was a little bit confusing and I'm not sure if it is right. The provided algorithm is confusing and not documented so I could not finish it. I implemented in another way in the MSTPrim.java and tried to implement as demanded at the MSTPrim2.java but the code is not working.