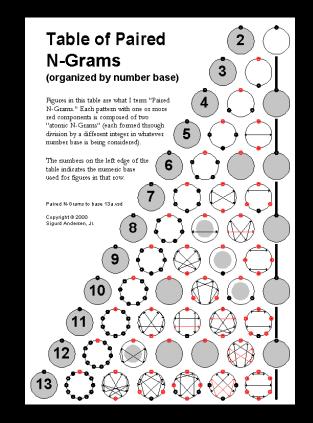
Quant Quest

Deep Patel

What are we analyzing?

General Approach- Other Approaches

- Other approaches
 - N- Grams
 - Rank System
 - LDA (Latent Dirichlet Allocation)



General Approach- Why Latent Semantic Indexing?

• We chose LSI because of it's

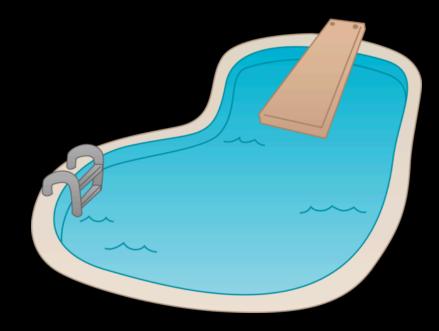
- Efficiency
- Analytical value
- Practicality

General Approach- What is LSI?

Latent semantic indexing is an indexing and retrieval method that identifies patterns and relationships between the words in a piece of text.

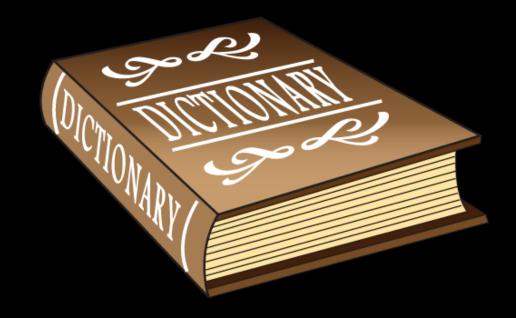
General Approach- LSI Process



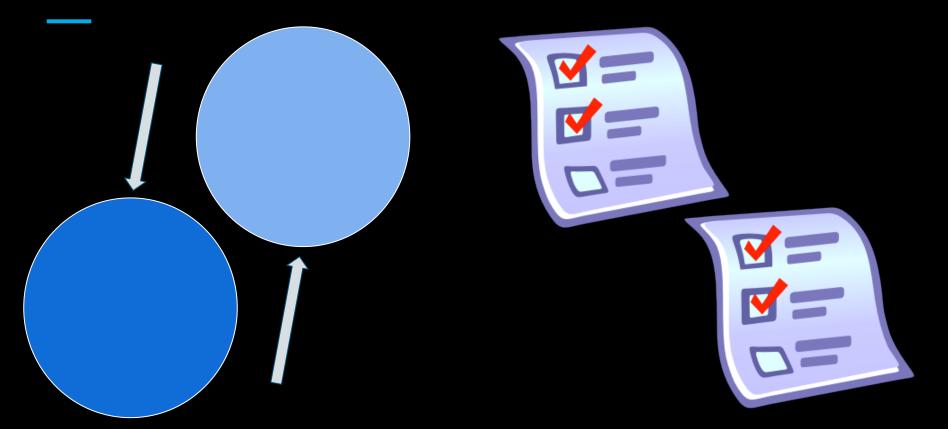


General Approach- LSI Process





General Approach- LSI Process



General Approach - Code Weaknesses

- Our code would not be able to
 - Link companies without Wikipedia pages
 - Relate information that's not there



General Approach - Time Constraints

- If we had more time we could have
 - Used more pages, more information
 - Created a larger corpus
 - Used more generators



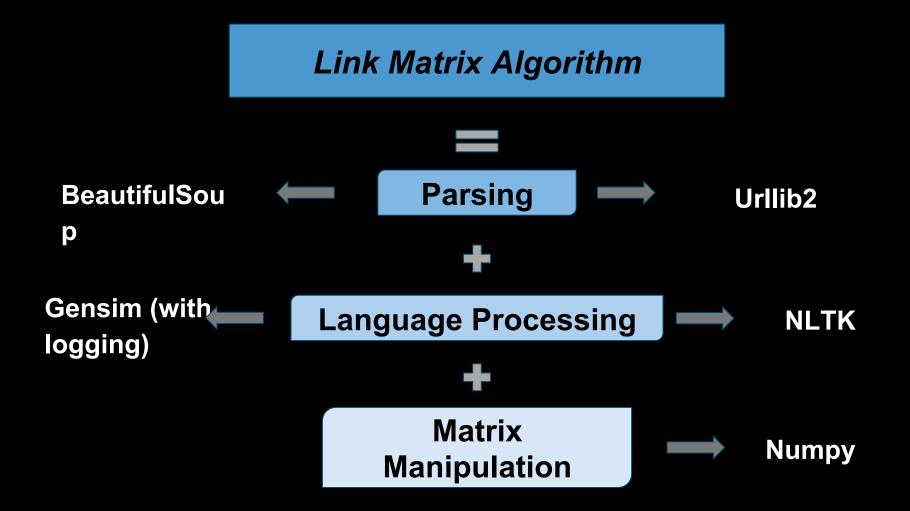
Technical Approach

Language: Python

- Brevity & Code Readability
- Useful modules
- Multifunctional







Technical Approach: Overcoming Obstacles

→ Some companies have multiple stock classes

Solution: remove duplicates

using

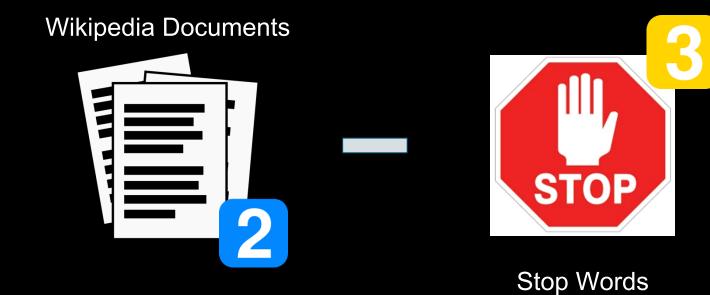
→ Companies without Wikipedia page
◆ Solution: use sector &

sub-industry



So what does the program actually do?



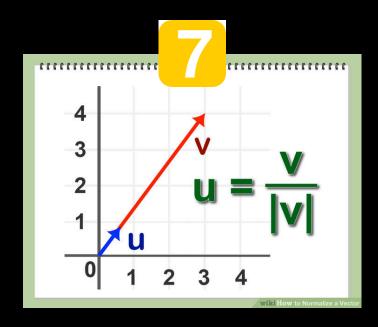


| chip butter 705 659 with coffee 352 311 cookic dough 259 238 300 171 190 171 127 123 127 123 103 101 103 101 103 101 65 77 72 neopolitan 68 67 68 67 68 67 64 1015 | 659 coffee 311 dough 238 swir1 171 | 705 with 352 cookie 259 | vanilla 1193 peanut 385 pecan 262 | chocolate 1896 mint 493 strawberry |
|--|--|-------------------------------------|--|--|
| 705 659 with coffee 352 311 cockie dough 259 238 cherry swirl 190 171 157 123 cockie caramel 127 123 103 101 103 101 tracks cup s5 77 72 68 67 68 67 | 659 coffee 311 dough 238 swir1 171 | 705 with 352 cookie 259 | 1193 peanut 385 pecan | 1896 mint 493 |
| 705 659 with coffee 352 311 cockie dough 259 238 cherry swirl 190 171 157 123 cockie caramel 127 123 103 101 103 101 tracks cup s5 77 72 68 67 68 67 | 659 coffee 311 dough 238 swir1 171 | 705 with 352 cookie 259 | 1193 peanut 385 pecan | 1896 mint 493 |
| 705 659 with coffee 352 311 cockie dough 259 238 cherry swirl 190 171 157 123 cockie caramel 127 123 103 101 103 101 tracks cup s5 77 72 68 67 68 67 | 659 coffee 311 dough 238 swir1 171 | 705 with 352 cookie 259 | 1193 peanut 385 pecan | 1896 mint 493 |
| with coffee 352 311 cookie dough 217 259 238 217 190 171 157 black caramel 1ike 127 123 119 rocky peach anything 103 101 100 tracks cup almond 65 77 72 68 67 64 | coffee 311 dough 238 swirl 171 | with 352 cookie 259 | peanut 385 pecan | mint 493 |
| 352 311 cookie dough 259 238 217 raspberry 190 171 157 157 190 171 157 157 127 123 103 101 103 101 85 77 72 68 67 64 | 311 dough 238 swirl 171 | 352 cookie 259 | 385 pecan | 493 |
| cookie dough 259 238 217 cherry swirl raspberry 190 171 157 black caramel like 127 123 119 rocky peach anything 103 101 100 tracks cup almond 65 77 72 68 67 64 | dough 238 swirl 171 | cookie 259 | pecan | |
| 259 238 217 cherry swirl raspberry 190 171 raspberry 190 171 raspberry 190 171 raspberry 127 123 119 rocky peach anything 103 101 100 tracks cup almond 85 77 72 necpolitan pistachio brownie 68 67 64 | 238 swirl 171 | 259 | | strawberry |
| cherry swirl raspberry 190 171 157 black carmel 11ke 127 123 119 rocky peech anything 103 101 100 tracks cup almond 85 77 72 necoplitan pistachic brownie 68 67 64 | swirl 171 | | | |
| 190 171 157 black caramel like 127 123 119 rocky peach anything 103 101 100 tracks cup almond 85 77 72 neopolitan pistachio brownie 68 67 64 | 171 | cherry | | 305 |
| black caramel like 127 123 119 rocky peach anything 103 101 100 tracks cup almond 85 77 72 neopolitan pistachio brownle 68 67 64 | | | cookies | choc |
| 127 123 119 rocky peach anything 103 101 100 tracks cup almond s5 77 72 neopolitan pistachio brownie 68 67 64 | caramel | 190 | 194 | 206 |
| rocky peach anything 103 101 100 tracks cup almond 85 77 72 neopolitan pistachio brownie 68 67 64 | | black | french | flavors |
| 103 101 100 tracks cup almond 85 77 72 neopolitan pistachio brownie 68 67 64 | 123 | 127 | 131 | 146 |
| tracks cup almond 85 77 72 neopolitan pistachio brownie 68 67 64 | peach | rocky | the | ice |
| 85 77 72 neopolitan pistachio brownie 68 67 64 | 101 | 103 | 112 | 114 |
| neopolitan pistachio brownie 68 67 64 | cup | tracks | bean | road |
| 68 67 64 | 77 | 85 | 93 | 100 |
| | pistachio | neopolitan | moose | something |
| walnut nuts fruit | 67 | 68 | 71 | 72 |
| | nuts | walnut | flavor | marshmallow |
| 62 60 56 | 60 | 62 | 63 | 64 |
| dark orange banana | orange | dark | any | maple |
| 51 51 50 | 51 | 51 | 53 | 55 |
| that chunks etc | chunks | that | ripple | mocha |
| 50 49 49 | 49 | 50 | 50 | 50 |
| would coconut carmel | coconut | would | all | cake |
| 39 38 37 | 38 | 39 | 39 | 41 |
| good chips for | chips | good | some | cheesecake |
| 34 33 32 | | 34 | 36 | 36 |



Corpus





Of Links Using LSI Model & Similarity Queries

NORMALIZE

FINAL OUTPUT

| | 2255 | 2282 | 2309 | 2336 | 2363 | 2390 | 2417 | 2444 | 2471 | 2498 | 1900 | 1 27 | 28 54 | 55 81 | 108 1 | | 62 18 | 9 216 | 243 | 270 | 297 | 298 324 | 325 326 | 1577 1603 | 1630 | 1657 | 1684 | 1711 | 1738 | 1765 | 1792 | 1819 | | 873 1 | 275 12 | 77 13 | 04 700 | 3 733 | | 761 787 | 788 814 | 815 841 | 842 868 | 86 89 | 9 5 | 59 896 5 922 |
|--------------|------|------------|--------------|------|------------|------------|--------------|--------------|--------------|--------------|--------------|--------------|------------|--------------|--------------------|-------------------------------|---------------------------|--|------------------|---------|--------------|------------|------------|--------------|------------|--------------|--------------|------|------------|--------------|-----------|------|------------------|-------|------------------|----------------|------------------|------------------|------------------|--------------|------------|--------------|------------|----------|--------|-----------------|
| 2254 | | | 2335 | | | 2416 | | | 2497 | 1899 | 1901 | 53 | 80 | 107 | | | 88 21 | | | | 323 | 350 | 352 | 1629 | | | | | | | | | | 274 1 | | | | | | 813 | 840 | 867 | 894 | 921 | | 948 |
| | | | 2361 | | | | | 2496 | 1898 | 1925 | 1927 | 79 | 106 | 133 159 | | 87 2 13 2 | | | | | 349 | 351 | 378 | 1655 | | | | | | | | | | | 302 13 | | | | | 839 | 866 | 893 | 920 | 947 | | 974 |
| 2306 2332 | | | 2387 2413 | | | 2468 | | 1897 | 1924 | 1926 | 1953 | 105 131 | 132 158 | 159 185 | | 13 2 39 2 | | | | 348 | 375 | 377 403 | 404 | 1681 | | 1735 1761 | | | | | 1870 | | | | 328 13 354 13 | | | | | 865 | 892 | 919 | 946 | 973 | | 1000 |
| 2358 | | | | | | | 1896 1922 | 1923 1949 | 1951 | 1952 1978 | 2005 | 151 | | | | $\frac{39}{65} = 2$ | | | | 400 | 402 | 429 | 4.5 | 07 | | | | | | 1869 1270 | 1271 1297 | | | | 380 14 | | | | | 891 | 918 | 945 | 972 | 1005 | | 1001 |
| 2308 | | | 2439 2465 | | | | 1922 | 1949 | 1951 | 2004 | 2005 | 183 | 210 | 211 237 | | $\frac{00}{91}$ $\frac{2}{3}$ | 12 31 | 9 049 5 079 |) 373) 300 | 400 | 402 428 | 429 | - 7 | Λ | 1786 | | | | | 1270 | | | | | 406 14 | | | | 016 | 917 | 070 | 971 | 1024 | 1025 | | 1027 |
| 2384 | | | | | 1920 | | | | 2003 | 2004 | 2051 2057 | 209 | | | | 91 3 17 3 | 14 37 | 5 37. 1 30i | 3 425 | 427 | 454 | 481 | | | | 1813 | | 1268 | | | | 1350 | | | 432 14 | | | | 910 942 | 945 | 910 | 1023 | 1024 | 1020 | | 1033 |
| 2436 | | | 1892 | 1919 | 1946 | 1973 | 2000 | 2002 | 2029 | 2056 | 2083 | 235 | | 289 | | 43 3 | 0 39 | 7 42 | | 453 | 480 | 507 | | | 1838 | | | 1294 | | 1348 | 1375 | 1377 | 1404 1 | 431 1 | 458 14 | | 12 91/ | 4 941 | | 995 | 1022 | 10.49 | 1051 | 1078 | | 1105 |
| 2462 | | | 1918 | 1945 | 1972 | 1999 | 2001 | 2028 | 2055 | 2082 | 2109 | 261 | 288 | | | 69 3 | 6 42 | 3 45 | 452 | 479 | 506 | 533 | 50 | 183 | | 1266 | | | | 1374 | 1376 | 1403 | 1430 1 | 457 1 | 484 15 | 11 15 | 38 940 | 967 | 994 | 1021 | 1048 | 1075 | 1077 | 1104 | | 1131 |
| | | 1917 | 1944 | 1971 | 1998 | 2025 | 2027 | 2054 | 2081 | 2108 | 2135 | 287 | 314 | 341 | 368 3 | 95 4 | 22 44 | 9 45 | 478 | 505 | 532 | 559 | -86 | 1863 | 65 | 1292 | 1319 | 1346 | 1373 | 1400 | 1402 | 1429 | 1456 1 | 483 1 | 510 15 | 37 15 | 64 966 | 3 993 | 1020 | 1047 | 1074 | 1076 | 1103 | 1130 | | 1157 |
| 14 | 1916 | 1943 | 1970 | 1997 | 2024 | 2026 | 2053 | 2080 | 2107 | 2134 | 2161 | 2188 | 340 | 367 | 394 4 | 21 4 | 18 47 | 5 47 | 504 | 531 | 558 | 585 | 612 | 1264 | 1291 | 1318 | 1345 | 1372 | 1399 | 1401 | 1428 | 1455 | 1482 1 | 509 1 | 536 15 | 63 15 | 90 992 | 2 1019 | 9 1046 | 1073 | 1100 | 1102 | 1129 | 1156 | | 1183 |
| 1915 | 1942 | 1969 | 1996 | 2023 | 2050 | 2052 | 2079 | 2106 | 2133 | 2160 | 2187 | 339 | 366 | 393 | 420 4 | 47 4 | 74 47 | 6 503 | 3 530 | 557 | 584 | 611 | 13 | 1290 | 1317 | 1344 | 1371 | 1398 | 1425 | 1427 | 1454 | 1481 | 1508 1 | 535 1 | 562 15 | 89 16 | 16 101 | 8 1043 | 5 1072 | 1099 | 1101 | 1128 | 1155 | 1182 | | 1209 |
| 1941 | | | 2022 | | | | | | 2159 | 2186 | 2213 | 365 | 392 | 419 | | 73 5 | | | | | 610 | 12 | 39 | 1316 | 1343 | 1370 | 1397 | 1424 | 1426 | 1453 | 1480 | | | | 588 16 | | | 4 107 | 1 1098 | 1125 | 1127 | 1154 | 1181 | 1208 | | 1235 |
| | | 2021 | | | 2077 | | | | 2185 | 2212 | 2239 | 391 | 418 | 445 | | 99 5 | | | | 609 | 11 | 38 | 65 | 1342 | | 1396 | | | | | | | | | 614 16 | | | | | | | 1180 | | 1234 | | 636 |
| 1993 | | | 2074 | | | | | | 2211 | 2238 | 2265 | 417 | 444 | 471 | | 25 5 | | | 608 | 10 | 37 | 64 | 91 | 1368 | 1395 | 1422 | | | | | | | | | 640 16 | | | | | 1152 | 1179 | 1206 | 1233 | 635 | | 662 |
| 2019 | | | 2100 | | | 2156 | | | 2237 | 2264 | 2291 | 443 | 470 | 497 | | 26 5 | | | . 9 | 36 | 63 | 90 | 117 | 1394 | 1421 | 1448 | | | | 1531 | | | | | | 93 17 | 20 112 | 2 1149 | 9 1151 | 1178 | 1205 | 1232 | 634 | 661 | | 588 |
| 2045 2071 | | | 2101 | | | | | | 2263 2289 | 2290 2316 | 2317 2343 | 469 495 | 496 522 | 523 549 | | 52 5 78 6 | 79 60 | 5 8 34 | 35 | 62 | 89 115 | 116 | 143 169 | 1420 1446 | 1447 | 1474 | 1476 1502 | | 1530 | 1557 1583 | 1584 | | 1638 1 1664 1 | | | 19 17 | 40 114 | 8 117 | a 1177 c 1902 | 1204 | 1231 | 633 | 660 | 687 | - 3 | 714 |
| 2071 2097 | | | 2127 2153 | | | | 2235 2261 | 2262 2288 | 2289 | 2310 | 2343 | 495 521 | 322 | 049 | 577 6 | 18 0 | 3 | | 61 | 88 | 141 | 142 | 109 | 1440 | | 1500 | 1002 | 1529 | | 1583 | 1610 | 1637 | 1004 1 | 091 1 | 718 17 | 45 17 | 12 117 | a 1170 0 1202 | 0 1203 9 1990 | 621 | 652 | 6.95 | 080 712 | 720 | 1 | 140 766 |
| 2097 2123 | | | | | | | 2201 2287 | | 2315 | 2342 | 2309 | 547 | | 76 | 603 | 5 | 59 | | | 140 | | | 21 | 1498 | | | | | | 1635 | 16 | | | | 17 | 97 18 | 98 120 24 120 | 1 120. | 2 1229 8 630 | 657 | 684 | 711 | 738 | 765 | 1 | 792 |
| 2149 | | | 2205 | | | | | 2340 | 2367 | 2394 | 2421 | 573 | | 02 | | 31 | 8 | | | 166 | | | | 1524 | 1 | | | | | 1661 | 16 | | | | | 23 18 | | 7 629 | 656 | 683 | 710 | 737 | 764 | 791 | j, | 818 |
| 2175 | | | 2231 | | 2285 | | | 2366 | 2393 | 2420 | 2447 | 599 | | 3 | | 57 | 11 | | | 192 | | | | 1550 | | (1) | 1606 | 16. | | 1687 | 17 | | 1768 1 | 795 1 | | | | 8 655 | 682 | 709 | 736 | 763 | 790 | 817 | ł | 844 |
| 2176 | | | | | | | 2365 | 2392 | 2419 | 2446 | 2473 | 625 | | 29 | | 33 | 13 | | | 218 | | | 99 | 1551 | | 1605 | 1632 | 1659 | | 1713 | 17 | | 1794 1 | 821 1 | 848 18 | 75 12 | 52 65 | 4 681 | 708 | 735 | 762 | 789 | 816 | 843 | - 8 | \$70 |
| 327 | 354 | 381 | 408 | 435 | 462 | 489 | 516 | 543 | 570 | 597 | 624 | 1876 | | 930 | 1957 19 | 084 | 203 | 8 20 | 2 | 2 21 19 | 2146 | | 200 | 955 | | 1006 | 1033 | 1060 | 1087 | 1114 | 11 | | 1195 1 | 222 1 | 249 63 | 26 65 | 53 130 | 5 1333 | 2 1359 | 1386 | 1413 | 1440 | 1467 | 1494 | 1 | 521 |
| | | | | | | 515 | 542 | 569 | 596 | 623 | 25 | 1902 | | 350 | 10.62 04 | 110 | 204 | | 2 | 3 2145 | | | 201 | | | 1032 | | | | 1140 | 11 | | 1001 1 | 0.40 | 61 | | | | | | | | | 1520 | | 1547 |
| 379 | | 100 | | | 514 | 541 | 568 | 595 | 622 | 24 | 26 | 1928 | | | | | 201 | | | 2171 | | | 227 | | | 1058 | 100 | 1119 | 1120 | 1166 | 11 | | | | 6 | | | | | | | | | 1546 | | 1573 |
| 405 | | 459 | | | 540 | 567 | 594 | 621 | 23 | 50 | 52 | 1954 | | | | | 21 | | | 2197 | | | 253 | | | 1084 | | | | 192 | 12 | | | | 70 | | | | | | | | | 1572 | 1 | 1599 |
| 431 | | | | 539 | 566 | 593 | 620 | 22 | 49 | 51 | 78 | 1980 | | | 2061 20 | | 21 | | (| 5 2223 | | | 279 | | | 1110 | | 1100 | | 218 | 12 | | | | 703 73 | | | | | | | 1544 | | 1598 | 1 | 625 |
| 457 | 484 | | 538 | 565 | 592 | 619 | 21 | 48 | 75 | 77 | 104 | 2006 | | | 2087 2 | | 210 | | | | 2251 | | 805 | | | | 1163 | | | 244 | 64 | | | | 729 7 | | | 5 146 | 2 1489 | 1516 | 1543 | 1570 | 1597 | 1624 | 1 | 626 |
| 483 509 | 536 | 537 563 | 564 | 591 | 618 | 20 | 47 | 74 | 76 | 103 | 130 156 | 2032 2058 | | | 2113 21 2139 21 | | 219 223 | | | | 2277 2303 | | | 1108 1134 | | | 1189 1215 | | | 645 671 | 67 | | | | 755 74 781 8 | | | 1 1483 | 8 1515 | 1542 | 1569 | 1590 1622 | 1623 | 1650 | - | 052 |
| 535 | 562 | 580 | 616 | 18 | 45 | 72 | 00 | 101 | 102 | 129 | 182 | 2038 | | | 2165 21 | | | 6 227 6 227 | | 2270 | 2303 | | | 1160 | | 20 | 1210 | 1242 | | 971 | 72 | | 121 1 | 104 1 | 101 0 | 10 04 34 86 | | 9 1540 | a 1041 0 1567 | 1504 | 1621 | 16.48 | 1675 | 1677 | 1 | 204 |
| | 588 | 615 | 17 | 44 | 71 | 98 | 125 | 127 | 154 | 181 | | 2110 | | | 2105 2: | | | 2 229 | | | | | 2409 | | | | | | | 723 | 75 | | | | 8 | 50 88 | | 9 1560 | 6 1593 | 1620 | 1647 | 1674 | 1676 | 1703 | î | 730 |
| 587 | 614 | 16 | 43 | 70 | 97 | 124 | 126 | 153 | 180 | 207 | 234 | 2136 | | | 2217 23 | | 229 | | | | | -108 | 2435 | | | | | | | 749 | 75 | | | | 8 | \$6 91 | 3 156 | 5 159 | 2 1619 | 1646 | 1673 | 1700 | 1702 | 1729 | 1 | 756 |
| 613 | 15 | 42 | 69 | 96 | 123 | 150 | 152 | 179 | 206 | 233 | 260 | 2162 | 2189 | 2216 | | | | | | 3 2380 | 2407 | 2434 | | 1238 | | 667 | 694 | 721 | | 775 | 777 | 804 | 831 8 | 858 8 | 885 9 | 12 93 | 159 159 | 1 161 | 8 1645 | 1672 | 1699 | 1701 | 1728 | 1755 | 1 | 782 |
| 1889 | 41 | 68 | 95 | 122 | 149 | 151 | 178 | 205 | 232 | 259 | 286 | 313 | 2215 | 2242 | 2269 23 | 296 23 | 23 23 | 0 235 | 2 2379 | 2406 | 2433 | 2460 | 2487 | 639 | 666 | 693 | 720 | 747 | 774 | 776 | 803 | 830 | 857 8 | 884 9 | 911 93 | 38 96 | 5 161 | 7 164 | 4 1671 | 1698 | 1725 | 1727 | 1754 | 1781 | 1 | 808 |
| 40 | 67 | 94 | 121 | | 175 | 177 | 204 | 231 | 258 | 285 | 312 | | | | 2295 23 | | | | | | | | | 665 | 692 | 719 | 746 | | 800 | 802 | | | 883 9 | | 937 9 | | 1 164 | 3 167 | 0 1697 | 1724 | | | | 1807 | 1 | 834 |
| 66 | 93 | 120 | 147 | | 176 | 203 | 230 | 257 | 284 | 311 | 338 | 2240 | | | 2321 23 | | | | | | | | | | 718 | 745 | | | 801 | 828 | 855 | 882 | 909 9 | 936 9 | 963 9 | 0 10 | 17 166 | 9 1696 | 6 1723 | | | | | 1833 | 1 | 860 |
| 92 | 119 | 146 | 173 | | 202 | 229 | 256 | 283 | 310 | 337 | 364 | 2266 | | | 2347 23 | | | | | | | | | | | 771 | | 825 | 827 | 854 | 881 | 908 | 935 9 | 962 1 | 989 10 | 16 10 | 43 169 | 5 172: | | | | 1805 | | 1859 | 1 | 261 |
| | 145 | 172 | | | | 255 | 282 | 309 | 336 | 363 | 390 | 2292 | | | | 100 24 | | | | | 1912 | 1939 | | | | | | | 853 | 880 | 907 | 934 | 961 9 | 988 1 | 015 10 | 42 10 | 69 172 | 1 1748 | 8 1775 | | | | 1858 | 1260 | 1 | 287 |
| 144 | 171 | 198 | | | | 281 | 308 | 335 | 362 | 389 | 416 | 2318 | | | 2399 24 | 101 24 | | | | | 1000 | 1965 | 1992 | 769 | 796 822 | 3 | 850 | | 879 | 906 | 933 | 960 | 987 1 | 014 1 | 041 10 | 68 10 | 95 174 | 7 177- | 4 1776 | 1803 | | 1857 | 1259 | 1286 | 1 | 313 |
| | | | | | | 307 333 | 334 | 361 | 388 414 | 415 | | | | | 2425 2426 24 | | 54 248 80 188 | | 3 1910 9 1936 | | | 1991 | 2018 | 95 | 822 | 849 | 851 | | 905 931 | 932 | 959 | 986 | 1013 1 | 040 1 | 067 10 | 94 11 | 21 177 | 3 1800 9 1801 | | 1829 1855 | | 1258 | 1285 | 1312 | 1 | 339 |
| | | | 252 278 | | 306 332 | 333 359 | 360 386 | 387 413 | 414 440 | 441 | 468 494 | 2370 2396 | | 2424 2450 | 2420 24 | 153 24 170 16 | 80 183 81 196 | | | | | 2904.2 | - 4 | 17 | 2.4 | e e | | | | 958 984 | 985 | 1012 | 1039 1 | 000 1 | 110 11 | 20 11 | 47 179 79 169 | 9 180 5 180 | 1 1828 | 1855 1256 | | 1284 | 1311 | 1338 | 1 | 365 |
| 222 248 | | | 304 | | 358 | 399 | 412 | 413 439 | 466 | 407 | 520 | 2390 | 2425 | 2400 | 2402 24 | 10 10 | 07 19 | 10 I I I I I I I I I I I I I I I I I I I | 0 1902 1 1985 | | 0.1 | 200 | 2 6 | 72 | 0.0 | 2 | | | 957 983 | 1010 | 1037 | 1064 | 1003 1 | 118 1 | 145 11 | 79 11 | 00 182 | 6 1851 | 3 1255 | 1230 | 1203 | 1310 | 1363 | 1304 | 1 | 1417 |
| | | | 330 | | 384 | 411 | 438 | 465 | 492 | 519 | 546 | 2448 | 2475 | 2401 | 1879 11 | 06 19 | 33 194 | 0 198 | 7 2014 | 0.41 | 206 | 20 | A | 6 | 01 | ŝ | 055 | 382 | 1009 | 1036 | 1063 | 1090 | 1117 1 | 144 1 | 171 11 | 98 12 | 25 185 | 2 125 | 4 1281 | 1308 | 1335 | 1362 | 1389 | 1416 | 1 | 1443 |
| | | | | | | 437 | 464 | 491 | 518 | 545 | | | | | 1905 1 | 32 19 | 59 193 | 6 201 | 3 2040 | 2067 | 2094 | 2121 | 2148 | 925 | 927 | 954 | 981 | 1008 | 1035 | 1062 | 1089 | 1116 | 1143 1 | 170 1 | 197 12 | 24 12 | | | | | | 1388 | 1415 | 1442 | 1 | 469 |
| | 328 | 355 | 382 | 409 | 436 | 463 | 490 | 517 | 544 | 571 | 598 | 2500 | 1877 | 1904 | 1931 19 | 058 19 | 85 20 | 2 203 | 9 2066 | 5 2093 | | | | | | 980 | 1007 | 1034 | 1061 | 1088 | 1115 | 1142 | 1169 1 | 196 1 | | | | 9 130 | 6 1333 | 1360 | 1387 | 1414 | 1441 | 1468 | | 1495 |

What did we accomplish?

460 SECONDS

ACCURACY

TOP 10 CORRELATIONS

| Marriott Int'l | Wyndham Worldwide | 0.00941 |
|---------------------------|---------------------------|---------|
| Marriott Int'l | Host Hotels & Resorts | 0.00920 |
| Marriott Int'l | Starwood Hotels & Resorts | 0.00945 |
| Wyndham Worldwide | Marriott Int'l | 0.00942 |
| Tiffany & Co. | Time Warner Co. | 0.00951 |
| Marathon Oil Corporation | ConocoPhillips | 0.00913 |
| Starwood Hotels & Resorts | Marriott Int'l | 0.00907 |
| Wyndham Worldwide | Host Hotels & Resorts | 0.00906 |
| Starwood Hotels & Resorts | Wyndham Worldwide | 0.00912 |
| NASDAQ OMX GROUP | CME Group Inc. | 0.00891 |

EXAMPLES

Case 1: Marathon Oil Corporation and ConocoPhillips

Case 2: Tiffany & Co. and Time Warner Inc.

A WHOLE NEW DEFINITION OF "DIVERSIFICATION"

Thank You!

Questions?