

# 10-Copy1

November 4, 2018

## 1 Assignment 10

Find your favorite news source and grab the article text.

1. Show the most common words in the article.
2. Show the most common words under a part of speech. (i.e. NOUN: {'Bob':12, 'Alice':4,})
3. Find a subject/object relationship through the dependency parser in any sentence.
4. Show the most common Entities and their types.
5. Find Entites and their dependency (hint: entity.root.head)
6. Find the most similar words in the article

```
In [1]: # !pip3 install spacy
```

```
In [2]: text = "In March 2017, a woman met with the admissions coordinator at Madison York Assis
text
```

```
Out[2]: 'In March 2017, a woman met with the admissions coordinator at Madison York Assisted Liv
```

```
In [3]: # !python3 -m spacy download en
```

```
In [4]: import spacy
```

```
In [5]: processor = spacy.load('en')
processed_text = processor(text)
```

```
In [6]: # Show the most common words in the article.
from collections import Counter

# all tokens that arent stop words or punctuations
words = [token.text
          for token in processed_text
          if token.is_punct != True]

word_freq = Counter(words)
common_words = word_freq.most_common(10)
common_words
```

```
Out[6]: [('the', 43),
          ('in', 32),
          ('and', 31),
          ('to', 30),
          ('a', 22),
          ('her', 18),
          ('for', 16),
          ('with', 13),
          ('living', 13),
          ('assisted', 12)]
```

```
In [7]: n = 0
        for sentence in processed_text.sents:
            for token in sentence:
                print(n, token, token.pos_ == "NOUN")
                n+=1
```

```
0 In False
1 March False
2 2017 False
3 , False
4 a False
5 woman True
6 met False
7 with False
8 the False
9 admissions True
10 coordinator True
11 at False
12 Madison False
13 York False
14 Assisted False
15 Living False
16 in False
17 Queens False
18 , False
19 inquiring False
20 about False
21 placement True
22 for False
23 her False
24 mother True
25 - False
26 in False
27 - False
28 law True
29 , False
30 who True
```

31 was False  
32 using False  
33 a False  
34 wheelchair True  
35 while False  
36 recovering False  
37 from False  
38 hip True  
39 surgery True  
40 . False  
41 False  
42 Wheelchairs True  
43 are False  
44 not False  
45 allowed False  
46 in False  
47 the False  
48 facility True  
49 , False  
50 False  
51 the False  
52 coordinator True  
53 told False  
54 her False  
55 . False  
56 False  
57 Walkers False  
58 , False  
59 canes True  
60 , False  
61 rollators True  
62 , False  
63 hemi True  
64 canes True  
65 , False  
66 something True  
67 like False  
68 that False  
69 is False  
70 acceptable False  
71 . False  
72 False  
73 But False  
74 , False  
75 he False  
76 went False  
77 on False  
78 , False

79 False  
80 we False  
81 can False  
82 not False  
83 accommodate False  
84 a False  
85 wheelchair True  
86 - False  
87 bound False  
88 patient True  
89 . False  
90 False  
91 In False  
92 November False  
93 , False  
94 another False  
95 woman True  
96 seeking False  
97 assisted False  
98 living True  
99 for False  
100 her False  
101 mother True  
102 - False  
103 in False  
104 - False  
105 law True  
106 emailed False  
107 the False  
108 admissions True  
109 coordinator True  
110 at False  
111 VillageCare False  
112 at False  
113 46 False  
114 & False  
115 Ten False  
116 in False  
117 Manhattan False  
118 . False  
119 False  
120 We False  
121 do False  
122 not False  
123 admit False  
124 residents True  
125 on False  
126 wheelchairs True

127 , False  
128 False  
129 the False  
130 coordinator True  
131 wrote False  
132 back False  
133 . False  
134 By False  
135 phone True  
136 , False  
137 the False  
138 woman True  
139 explained False  
140 that False  
141 her False  
142 mother True  
143 - False  
144 in False  
145 - False  
146 law True  
147 had False  
148 used False  
149 a False  
150 chair True  
151 for False  
152 decades True  
153 and False  
154 could False  
155 transfer False  
156 in False  
157 and False  
158 out False  
159 without False  
160 assistance True  
161 . False  
162 The False  
163 coordinator True  
164 would False  
165 nt False  
166 budge False  
167 . False  
168 False  
169 We False  
170 could False  
171 not False  
172 accept False  
173 anyone True  
174 in False

175 a False  
176 wheelchair True  
177 , False  
178 False  
179 she False  
180 said False  
181 . False  
182 Yet False  
183 at False  
184 both False  
185 places True  
186 , False  
187 and False  
188 at False  
189 two False  
190 other False  
191 assisted False  
192 living False  
193 facilities True  
194 in False  
195 New False  
196 York False  
197 City False  
198 , False  
199 people True  
200 who True  
201 made False  
202 similar False  
203 inquiries True  
204 False  
205 but False  
206 described False  
207 their False  
208 relatives True  
209 as False  
210 able False  
211 to False  
212 walk False  
213 False  
214 were False  
215 encouraged False  
216 to False  
217 submit False  
218 applications True  
219 . False  
220 None True  
221 of False  
222 these False

223 people True  
224 actually False  
225 had False  
226 family True  
227 members True  
228 who True  
229 needed False  
230 assisted False  
231 living True  
232 . False  
233 They False  
234 were False  
235 testers True  
236 , False  
237 professional False  
238 actors True  
239 working False  
240 for False  
241 the False  
242 nonprofit False  
243 Fair False  
244 Housing False  
245 Justice False  
246 Center False  
247 to False  
248 investigate False  
249 whether False  
250 such False  
251 facilities True  
252 discriminate False  
253 against False  
254 wheelchair True  
255 users True  
256 . False  
257 Excerpts True  
258 from False  
259 their False  
260 recorded False  
261 conversations True  
262 are False  
263 included False  
264 in False  
265 a False  
266 federal False  
267 lawsuit True  
268 filed False  
269 against False  
270 those False

271 centers True  
272 , False  
273 claiming False  
274 they False  
275 discriminate False  
276 against False  
277 people True  
278 in False  
279 wheelchairs True  
280 and False  
281 are False  
282 violating False  
283 the False  
284 Fair False  
285 Housing False  
286 Act False  
287 , False  
288 the False  
289 Americans False  
290 with False  
291 Disabilities False  
292 Act False  
293 and False  
294 other False  
295 federal False  
296 laws True  
297 . False  
298 False  
299 People True  
300 were False  
301 being False  
302 threatened False  
303 with False  
304 eviction True  
305 , False  
306 or False  
307 actually False  
308 evicted False  
309 , False  
310 for False  
311 even False  
312 part False  
313 - False  
314 time True  
315 use True  
316 of False  
317 a False  
318 wheelchair True



319 , False  
320 False  
321 said False  
322 Fred False  
323 Freiberg False  
324 , False  
325 director True  
326 of False  
327 the False  
328 anti False  
329 - False  
330 discrimination True  
331 group True  
332 , False  
333 which False  
334 brought False  
335 the False  
336 suit True  
337 after False  
338 receiving False  
339 complaints True  
340 from False  
341 residents True  
342 and False  
343 families True  
344 . False  
345 False  
346 It False  
347 s False  
348 outrageous False  
349 . False  
350 They False  
351 were False  
352 told False  
353 , False  
354 False  
355 If False  
356 you False  
357 re False  
358 going False  
359 to False  
360 use False  
361 a False  
362 wheelchair True  
363 , False  
364 you False  
365 ca False  
366 nt False

367 live False  
368 here False  
369 anymore. True  
370 False  
371 Related False  
372 cases True  
373 have False  
374 popped False  
375 up False  
376 for False  
377 years True  
378 in False  
379 senior False  
380 housing True  
381 nationwide False  
382 , False  
383 including False  
384 continuing False  
385 care True  
386 retirement True  
387 communities True  
388 . False  
389 In False  
390 2015 False  
391 , False  
392 for False  
393 instance True  
394 , False  
395 the False  
396 Justice False  
397 Department False  
398 reached False  
399 settlements True  
400 with False  
401 a False  
402 continuing False  
403 care True  
404 facility True  
405 in False  
406 Norfolk False  
407 , False  
408 Va. False  
409 , False  
410 and False  
411 one False  
412 in False  
413 Lincolnshire False  
414 , False

415 Ill. False  
416 , False  
417 for False  
418 discriminating False  
419 against False  
420 residents True  
421 with False  
422 disabilities True  
423 . False  
424 Unlike False  
425 nursing True  
426 homes True  
427 , False  
428 which False  
429 are False  
430 subject False  
431 to False  
432 federal False  
433 regulations True  
434 and False  
435 regular False  
436 inspections True  
437 , False  
438 assisted False  
439 and False  
440 independent False  
441 living True  
442 facilities True  
443 operate False  
444 under False  
445 widely False  
446 varying False  
447 state True  
448 laws True  
449 . False  
450 Oklahoma False  
451 and False  
452 Alabama False  
453 require False  
454 residents True  
455 to False  
456 be False  
457 False  
458 ambulatory False  
459 , False  
460 False  
461 for False  
462 instance True

463 , False  
464 but False  
465 Kentucky False  
466 allows False  
467 admission True  
468 of False  
469 the False  
470 False  
471 mobile False  
472 nonambulatory True  
473 , False  
474 False  
475 meaning False  
476 people True  
477 who True  
478 use False  
479 walkers True  
480 or False  
481 wheelchairs True  
482 . False  
483 False  
484 Many False  
485 states True  
486 have False  
487 similar False  
488 policies True  
489 , False  
490 though False  
491 with False  
492 different False  
493 language True  
494 , False  
495 like False  
496 False  
497 must False  
498 be False  
499 able False  
500 to False  
501 self True  
502 - False  
503 evacuate, False  
504 which False  
505 is False  
506 often False  
507 interpreted False  
508 to False  
509 mean False  
510 False

511 no False  
512 wheelchairs, True  
513 False  
514 said False  
515 Susan False  
516 Silverstein False  
517 , False  
518 a False  
519 senior False  
520 lawyer True  
521 for False  
522 the False  
523 AARP False  
524 Foundation False  
525 , False  
526 which False  
527 is False  
528 representing False  
529 the False  
530 plaintiffs True  
531 . False  
532 False  
533 Facilities True  
534 often False  
535 justify False  
536 their False  
537 policies True  
538 by False  
539 citing False  
540 state True  
541 laws True  
542 that False  
543 are False  
544 ambiguous False  
545 . False  
546 False  
547 Administrators True  
548 of False  
549 the False  
550 facilities True  
551 named False  
552 in False  
553 the False  
554 New False  
555 York False  
556 lawsuit True  
557 , False  
558 including False

559 Elm False  
560 York False  
561 Assisted False  
562 Living False  
563 and False  
564 Madison False  
565 York False  
566 Assisted False  
567 Living False  
568 , False  
569 ( False  
570 which False  
571 share False  
572 ownership True  
573 with False  
574 the False  
575 other False  
576 residence True  
577 in False  
578 Queens False  
579 ) False  
580 , False  
581 often False  
582 cited False  
583 state True  
584 laws True  
585 as False  
586 reasons True  
587 to False  
588 exclude False  
589 wheelchair True  
590 users True  
591 , False  
592 according False  
593 to False  
594 the False  
595 complaint True  
596 . False  
597 And False  
598 in False  
599 this False  
600 case True  
601 , False  
602 they False  
603 appear False  
604 to False  
605 be False  
606 correct False

607 . False  
608 New False  
609 York False  
610 State False  
611 regulations True  
612 governing False  
613 False  
614 adult True  
615 care True  
616 facilities True  
617 False  
618 and False  
619 Medicaid False  
620 - False  
621 funded False  
622 assisted False  
623 living True  
624 programs True  
625 , False  
626 which False  
627 all False  
628 four False  
629 facilities True  
630 are False  
631 licensed False  
632 to False  
633 offer False  
634 , False  
635 do False  
636 prohibit True  
637 residents True  
638 who True  
639 are False  
640 False  
641 chronically False  
642 chairfast False  
643 and False  
644 unable False  
645 to False  
646 transfer False  
647 False  
648 or False  
649 require False  
650 assistance True  
651 to False  
652 transfer False  
653 False  
654 even False

655 when False  
656 , False  
657 as False  
658 in False  
659 this False  
660 case True  
661 , False  
662 the False  
663 buildings True  
664 have False  
665 elevators True  
666 . False  
667 Those False  
668 40-year False  
669 - False  
670 old False  
671 policies True  
672 predate False  
673 the False  
674 federal False  
675 laws True  
676 barring False  
677 discrimination True  
678 based False  
679 on False  
680 disability True  
681 , False  
682 but False  
683 the False  
684 state True  
685 has False  
686 not False  
687 revised False  
688 them False  
689 . False  
690 For False  
691 that False  
692 reason True  
693 , False  
694 the False  
695 lawsuit True  
696 also False  
697 names False  
698 the False  
699 state True  
700 health True  
701 department True  
702 and False



703 commissioner True  
704 , False  
705 plus False  
706 Gov. False  
707 Andrew False  
708 Cuomo False  
709 , False  
710 as False  
711 defendants True  
712 . False  
713 Neither False  
714 the False  
715 governor True  
716 s False  
717 office True  
718 nor False  
719 the False  
720 four False  
721 assisted False  
722 living True  
723 facilities True  
724 would False  
725 comment False  
726 . False  
727 The False  
728 state True  
729 s False  
730 health True  
731 department True  
732 said False  
733 it False  
734 considered False  
735 False  
736 reasonable False  
737 wheelchair True  
738 accessibility True  
739 False  
740 in False  
741 adult True  
742 homes True  
743 a False  
744 priority True  
745 and False  
746 that False  
747 it False  
748 began False  
749 working False  
750 with False

751 existing False  
752 homes True  
753 last False  
754 year True  
755 on False  
756 False  
757 remediation True  
758 plans True  
759 that False  
760 include False  
761 appropriate False  
762 upgrades True  
763 . False  
764 False  
765 Newly False  
766 constructed False  
767 adult True  
768 homes True  
769 , False  
770 it False  
771 noted False  
772 , False  
773 must False  
774 comply False  
775 with False  
776 federal False  
777 , False  
778 state True  
779 and False  
780 local False  
781 accessibility True  
782 requirements True  
783 . False  
784 The False  
785 suit True  
786 asks False  
787 that False  
788 the False  
789 four False  
790 facilities True  
791 adopt False  
792 nondiscriminatory False  
793 admission True  
794 and False  
795 retention True  
796 policies True  
797 , False  
798 and False

799 that False  
800 the False  
801 state True  
802 update False  
803 its False  
804 regulations True  
805 to False  
806 reflect False  
807 federal False  
808 law True  
809 . False  
810 It False  
811 also False  
812 seeks False  
813 training True  
814 and False  
815 monitoring True  
816 to False  
817 ensure False  
818 compliance True  
819 . False  
820 While False  
821 administrators True  
822 might False  
823 still False  
824 turn False  
825 away False  
826 applicants True  
827 for False  
828 individual False  
829 reasons True  
830 , False  
831 they False  
832 could False  
833 nt False  
834 maintain False  
835 blanket True  
836 rules True  
837 against False  
838 wheelchairs True  
839 . False  
840 False  
841 There False  
842 s False  
843 going False  
844 to False  
845 be False  
846 a False

847 much False  
848 larger False  
849 number True  
850 of False  
851 people True  
852 in False  
853 the False  
854 next False  
855 few False  
856 years True  
857 who True  
858 will False  
859 need False  
860 assisted False  
861 living True  
862 , False  
863 and False  
864 those False  
865 facilities True  
866 need False  
867 to False  
868 be False  
869 open False  
870 to False  
871 people True  
872 , False  
873 False  
874 Mr. False  
875 Freiberg False  
876 said False  
877 . False  
878 Although False  
879 the False  
880 assisted False  
881 living True  
882 industry True  
883 mainly False  
884 attracts False  
885 people True  
886 who True  
887 are False  
888 paying False  
889 for False  
890 the False  
891 care True  
892 themselves False  
893 , False  
894 False

895 the False  
896 percentage True  
897 covered False  
898 by False  
899 Medicaid False  
900 is False  
901 growing False  
902 , False  
903 False  
904 said False  
905 Eric False  
906 Carlson False  
907 , False  
908 a False  
909 lawyer True  
910 at False  
911 Justice False  
912 in False  
913 Aging False  
914 , False  
915 an False  
916 advocacy True  
917 group True  
918 not False  
919 involved False  
920 in False  
921 the False  
922 lawsuit True  
923 . False  
924 A False  
925 recent False  
926 Government False  
927 Accountability False  
928 Office False  
929 report True  
930 pointed False  
931 out False  
932 that False  
933 in False  
934 2014 False  
935 , False  
936 Medicaid False  
937 covered False  
938 assisted False  
939 - False  
940 living True  
941 services True  
942 for False

943 more False  
944 than False  
945 330,000 False  
946 people True  
947 in False  
948 48 False  
949 states True  
950 False  
951 part True  
952 of False  
953 the False  
954 effort True  
955 to False  
956 support False  
957 alternatives True  
958 to False  
959 expensive False  
960 nursing True  
961 homes True  
962 . False  
963 A False  
964 favorable False  
965 settlement True  
966 or False  
967 trial True  
968 verdict True  
969 in False  
970 the False  
971 New False  
972 York False  
973 lawsuit True  
974 could False  
975 bring False  
976 changes True  
977 in False  
978 assisted False  
979 living True  
980 beyond False  
981 Medicaid False  
982 programs True  
983 and False  
984 beyond False  
985 New False  
986 York False  
987 State False  
988 . False  
989 False  
990 Private False

991 - False  
992 pay True  
993 assisted False  
994 living True  
995 is False  
996 still False  
997 subject False  
998 to False  
999 the False  
1000 Fair False  
1001 Housing False  
1002 Act False  
1003 , False  
1004 False  
1005 said False  
1006 Jota False  
1007 Borgmann False  
1008 , False  
1009 senior False  
1010 staff True  
1011 lawyer True  
1012 at False  
1013 Mobilization False  
1014 for False  
1015 Justice False  
1016 , False  
1017 a False  
1018 legal False  
1019 services True  
1020 organization True  
1021 and False  
1022 co True  
1023 - False  
1024 counsel True  
1025 in False  
1026 the False  
1027 case True  
1028 . False  
1029 Similar False  
1030 court True  
1031 cases True  
1032 have False  
1033 already False  
1034 changed False  
1035 assisted False  
1036 living True  
1037 regulations True  
1038 and False

1039 practices True  
1040 around False  
1041 the False  
1042 country True  
1043 , False  
1044 Mr. False  
1045 Carlson False  
1046 pointed False  
1047 out False  
1048 . False  
1049 False  
1050 It False  
1051 s False  
1052 not False  
1053 like False  
1054 flipping False  
1055 a False  
1056 switch True  
1057 , False  
1058 False  
1059 he False  
1060 said False  
1061 . False  
1062 False  
1063 It False  
1064 s False  
1065 step True  
1066 by False  
1067 step True  
1068 , False  
1069 but False  
1070 they False  
1071 have False  
1072 impact True  
1073 . False  
1074 False  
1075 While False  
1076 the False  
1077 relatives True  
1078 that False  
1079 testers True  
1080 described False  
1081 to False  
1082 administrators True  
1083 were False  
1084 fictitious False  
1085 , False  
1086 a False



1087 retired False  
1088 lawyer True  
1089 in False  
1090 her False  
1091 60s True  
1092 , False  
1093 known False  
1094 in False  
1095 court True  
1096 filings True  
1097 only False  
1098 as False  
1099 Jane False  
1100 Doe False  
1101 because False  
1102 she False  
1103 feared False  
1104 she False  
1105 might False  
1106 be False  
1107 blackballed False  
1108 from False  
1109 care True  
1110 facilities True  
1111 , False  
1112 is False  
1113 quite False  
1114 real False  
1115 . False  
1116 She False  
1117 s False  
1118 also False  
1119 a False  
1120 plaintiff True  
1121 in False  
1122 the False  
1123 lawsuit True  
1124 , False  
1125 along False  
1126 with False  
1127 her False  
1128 brother True  
1129 , False  
1130 who True  
1131 acts False  
1132 as False  
1133 her False  
1134 power True

1135 of False  
1136 attorney True  
1137 . False  
1138 Disabled False  
1139 by False  
1140 severe False  
1141 osteoporosis True  
1142 , False  
1143 the False  
1144 plaintiff True  
1145 lived False  
1146 at False  
1147 VillageCare False  
1148 for False  
1149 five False  
1150 years True  
1151 , False  
1152 until False  
1153 last False  
1154 spring True  
1155 when False  
1156 a False  
1157 urinary False  
1158 tract True  
1159 infection True  
1160 and False  
1161 its False  
1162 complications True  
1163 sent False  
1164 her False  
1165 to False  
1166 a False  
1167 hospital True  
1168 , False  
1169 then False  
1170 to False  
1171 a False  
1172 nursing True  
1173 home True  
1174 for False  
1175 rehabilitation True  
1176 . False  
1177 After False  
1178 two False  
1179 months True  
1180 , False  
1181 according False  
1182 to False

1183 the False  
1184 complaint True  
1185 , False  
1186 VillageCare False  
1187 told False  
1188 her False  
1189 she False  
1190 needed False  
1191 more False  
1192 assistance True  
1193 than False  
1194 it False  
1195 could False  
1196 provide False  
1197 , False  
1198 including False  
1199 help True  
1200 with False  
1201 False  
1202 ambulation True  
1203 , False  
1204 False  
1205 and False  
1206 told False  
1207 her False  
1208 she False  
1209 could False  
1210 not False  
1211 return False  
1212 . False  
1213 It False  
1214 began False  
1215 eviction True  
1216 proceedings True  
1217 , False  
1218 which False  
1219 her False  
1220 brother True  
1221 contested False  
1222 . False  
1223 In False  
1224 December False  
1225 , False  
1226 the False  
1227 facility True  
1228 agreed False  
1229 to False  
1230 an False

1231 in False  
1232 - False  
1233 person True  
1234 interview True  
1235 and False  
1236 assessment True  
1237 . False  
1238 The False  
1239 session True  
1240 False  
1241 including False  
1242 cognitive False  
1243 tests True  
1244 , False  
1245 sitting False  
1246 and False  
1247 standing False  
1248 , False  
1249 and False  
1250 taking False  
1251 her False  
1252 shoes True  
1253 on False  
1254 and False  
1255 off False  
1256 False  
1257 lasted False  
1258 four False  
1259 hours True  
1260 . False  
1261 False  
1262 It False  
1263 was False  
1264 grueling False  
1265 , False  
1266 False  
1267 said False  
1268 her False  
1269 brother True  
1270 , False  
1271 who True  
1272 traveled False  
1273 from False  
1274 his False  
1275 Florida False  
1276 home True  
1277 to False  
1278 accompany False

1279 her False  
1280 . False  
1281 False  
1282 It False  
1283 was False  
1284 a False  
1285 very False  
1286 difficult False  
1287 thing True  
1288 , False  
1289 but False  
1290 my False  
1291 sister True  
1292 did False  
1293 it False  
1294 . False  
1295 She False  
1296 walked False  
1297 with False  
1298 her False  
1299 walker True  
1300 just False  
1301 fine False  
1302 . False  
1303 False  
1304 But False  
1305 VillageCare False  
1306 refused False  
1307 to False  
1308 readmit False  
1309 her False  
1310 , False  
1311 saying False  
1312 she False  
1313 needed False  
1314 assistance True  
1315 with False  
1316 activities True  
1317 of False  
1318 daily False  
1319 living True  
1320 , False  
1321 including False  
1322 False  
1323 locomotion True  
1324 . False  
1325 False  
1326 So False

1327 she False  
1328 remains False  
1329 in False  
1330 a False  
1331 nursing True  
1332 home True  
1333 , False  
1334 where False  
1335 she False  
1336 is False  
1337 discouraged False  
1338 from False  
1339 walking False  
1340 at False  
1341 all False  
1342 , False  
1343 and False  
1344 worries True  
1345 that False  
1346 she False  
1347 may False  
1348 never False  
1349 go False  
1350 home False  
1351 . False  
1352 False  
1353 It False  
1354 s False  
1355 very False  
1356 disheartening False  
1357 , False  
1358 False  
1359 her False  
1360 brother True  
1361 said False  
1362 . False  
1363 False  
1364 I False  
1365 keep False  
1366 telling False  
1367 her False  
1368 , False  
1369 False  
1370 You False  
1371 re False  
1372 going False  
1373 to False  
1374 be False

```
1375 out False
1376 any False
1377 day, True
1378 and False
1379 I False
1380 ve False
1381 been False
1382 wrong False
1383 . False
1384 False
```

```
In [8]: # Show the most common words under a part of speech. (i.e. NOUN: {'Bob':12, 'Alice':4,})
```

```
nouns = [token.text
          for token in processed_text
          if token.is_stop != True
          and token.is_punct != True
          and token.pos_ == "NOUN"]
```

```
noun_freq = Counter(nouns)
common_nouns = noun_freq.most_common(10)
common_nouns
```

```
Out[8]: [('living', 12),
         ('facilities', 10),
         ('wheelchair', 8),
         ('people', 8),
         ('state', 8),
         ('lawsuit', 6),
         ('coordinator', 5),
         ('residents', 5),
         ('laws', 5),
         ('care', 5)]
```

```
In [30]: # Find a subject/object relationship through the dependency parser in any sentence.
```

```
def pr_tree(word, level):
    if word.is_punct:
        return
    for child in word.lefts:
        pr_tree(child, level+1)
    print('\t'* level + word.text + ' - ' + word.dep_)
    for child in word.rights:
        pr_tree(child, level+1)

for sentence in processed_text.noun_chunks: # changed .sents to .noun_chunks to narrow
    pr_tree(sentence.root, 0)
    print('-----')
```

```
March - pobj
2017 - nummod
```

-----  
a - det  
woman - nsubj  
-----

the - det  
admissions - compound  
coordinator - pobj  
at - prep

Madison - compound  
York - compound  
Assisted - compound  
Living - pobj  
in - prep  
Queens - pobj

-----  
Queens - pobj  
-----

placement - pobj  
for - prep

her - poss  
mother - pobj  
in - prep  
law - pobj  
who - nsubj  
was - aux  
using - relcl

a - det  
wheelchair - dobj  
while - mark  
recovering - advcl  
from - prep

hip - compound  
surgery - pobj

-----  
her - poss  
mother - pobj  
in - prep

law - pobj  
who - nsubj  
was - aux  
using - relcl

a - det  
wheelchair - dobj  
while - mark  
recovering - advcl  
from - prep

hip - compound  
surgery - pobj



```

-----
law - pobj
-----
who - nsubj
-----
      a - det
wheelchair - dobj
-----
      hip - compound
surgery - pobj
-----
Wheelchairs - nsubjpass
-----
      the - det
facility - pobj
-----
      the - det
coordinator - nsubj
-----
her - dobj
-----
Walkers - nsubj
      canes - conj
          rollators - conj
              hemi - amod
                  canes - conj
-----
canes - conj
      rollators - conj
          hemi - amod
              canes - conj
-----
rollators - conj
      hemi - amod
          canes - conj
-----
      hemi - amod
canes - conj
-----
something - nsubj
      like - prep
          that - pobj
-----
he - nsubj
-----
we - nsubj
-----
      a - det

```

```

wheelchair - npadvmod
bound - amod
patient - dobj
-----
November - pobj
-----
another - det
woman - nsubj
seeking - acl
-----
her - poss
mother - pobj
in - prep
law - pobj
-----
law - pobj
-----
the - det
admissions - compound
coordinator - dobj
at - prep
VillageCare - pobj
-----
VillageCare - pobj
-----
Manhattan - pobj
-----
We - nsubj
-----
residents - dobj
-----
wheelchairs - pobj
-----
the - det
coordinator - nsubj
-----
phone - pobj
-----
the - det
woman - nsubj
-----
her - poss
mother - nsubj
in - prep
law - pobj
-----
law - pobj
-----

```

```

        a - det
chair - dobj
-----
decades - pobj
-----
assistance - pobj
-----
        The - det
coordinator - nsubj
-----
We - nsubj
-----
anyone - dobj
        in - prep
                a - det
                wheelchair - pobj
-----
        a - det
wheelchair - pobj
-----
she - nsubj
-----
        both - det
places - pobj
-----
        two - nummod
        other - amod
        assisted - amod
        living - amod
facilities - pobj
        in - prep
                New - compound
                York - compound
                City - pobj
                people - appos
                        who - nsubj
                        made - relcl
                                similar - amod
                                inquiries - dobj
-----
        New - compound
        York - compound
City - pobj
        people - appos
                who - nsubj
                made - relcl
                        similar - amod
                        inquiries - dobj

```

```

-----
people - appos
      who - nsubj
      made - relcl
            similar - amod
            inquiries - dobj
-----
who - nsubj
-----
      similar - amod
inquiries - dobj
-----
      their - poss
relatives - dobj
-----
applications - dobj
-----
None - nsubj
      of - prep
            these - det
            people - pobj
-----
      these - det
people - pobj
-----
      family - compound
members - dobj
      who - nsubj
      needed - relcl
            assisted - amod
            living - dobj
-----
who - nsubj
-----
      assisted - amod
living - dobj
-----
They - nsubj
-----
testers - attr
      professional - amod
      actors - appos
            working - acl
            for - prep
the - det
nonprofit - amod
      Fair - compound
      Housing - compound

```

```

Justice - compound
Center - pobj
to - aux
investigate - advcl
    whether - mark
        such - amod
            facilities - nsubj
discriminate - ccomp
    against - prep
        wheelchair - compound
            users - pobj
-----
professional - amod
actors - appos
    working - acl
        for - prep
            the - det
                nonprofit - amod
                    Fair - compound
                    Housing - compound
                Justice - compound
            Center - pobj
            to - aux
investigate - advcl
    whether - mark
        such - amod
            facilities - nsubj
discriminate - ccomp
    against - prep
        wheelchair - compound
            users - pobj
-----
the - det
nonprofit - amod
    Fair - compound
    Housing - compound
Justice - compound
Center - pobj
-----
such - amod
facilities - nsubj
-----
wheelchair - compound
users - pobj
-----
Excerpts - nsubjpass
    from - prep
        their - poss

```

```

                                recorded - amod
                        conversations - pobj
-----
                their - poss
                recorded - amod
conversations - pobj
-----
                a - det
                federal - amod
lawsuit - pobj
                filed - acl
                        against - prep
                                those - det
                                centers - pobj
-----
                those - det
centers - pobj
-----
they - nsubj
-----
people - pobj
                in - prep
                        wheelchairs - pobj
-----
wheelchairs - pobj
-----
                the - det
                        Fair - compound
                Housing - compound
Act - dobj
                the - det
                Americans - appos
                        with - prep
                                Disabilities - pobj
                Act - appos
                        and - cc
                                other - amod
                                federal - amod
                        laws - conj
-----
                the - det
Americans - appos
                with - prep
                        Disabilities - pobj
                Act - appos
                        and - cc
                                other - amod
                                federal - amod

```

```

laws - conj
-----
Disabilities - pobj
-----
Act - appos
    and - cc
        other - amod
        federal - amod
    laws - conj
-----
    other - amod
    federal - amod
laws - conj
-----
People - nsubjpass
-----
eviction - pobj
-----
    even - amod
        part - amod
    time - compound
use - pobj
    of - prep
        a - det
        wheelchair - pobj
-----
    a - det
wheelchair - pobj
-----
    Fred - compound
Freiberg - nsubj
    director - appos
        of - prep
            the - det
            discrimination - compound
group - pobj
            which - nsubj
            brought - relcl
                the - det
                suit - dobj
                after - prep
                    receiving - pcomp
                        complaints - dobj
                        from - prep
                            residents - pobj
                                and - cc
                                    families - conj
-----

```

director - appos  
     of - prep  
         the - det  
         discrimination - compound  
     group - pobj  
         which - nsubj  
         brought - relcl  
             the - det  
             suit - dobj  
             after - prep  
                 receiving - pcomp  
                     complaints - dobj  
                     from - prep  
                         residents - pobj  
                         and - cc  
                         families - conj

-----

    the - det  
     discrimination - compound  
 group - pobj  
     which - nsubj  
     brought - relcl  
         the - det  
         suit - dobj  
         after - prep  
             receiving - pcomp  
                 complaints - dobj  
                 from - prep  
                     residents - pobj  
                     and - cc  
                     families - conj

-----

    the - det  
 suit - dobj

-----

complaints - dobj

-----

residents - pobj  
     and - cc  
     families - conj

-----

families - conj

-----

It - nsubj

-----

They - nsubjpass

-----

you - nsubj



```

-----
      a - det
wheelchair - dobj
-----
you - nsubj
-----
      anymore. - nmod
      Related - amod
cases - nsubj
-----
years - pobj
-----
      senior - amod
housing - pobj
      nationwide - advmod
-----
      continuing - amod
           care - compound
      retirement - compound
communities - pobj
-----
instance - pobj
-----
      the - det
      Justice - compound
Department - nsubj
-----
settlements - dobj
      with - prep
           a - det
           continuing - amod
           care - compound
      facility - pobj
           in - prep
               Norfolk - pobj
                   Va. - appos
           and - cc
           one - conj
               in - prep
                   Lincolnshire - pobj
                       Ill. - appos
           for - prep
               discriminating - pcomp
                   against - prep
                       residents - pobj
                           with - prep
                               disabilities - pobj
-----

```

a - det  
continuing - amod  
care - compound  
facility - pobj  
in - prep  
Norfolk - pobj  
Va. - appos  
and - cc  
one - conj  
in - prep  
Lincolnshire - pobj  
Ill. - appos  
for - prep  
discriminating - pcomp  
against - prep  
residents - pobj  
with - prep  
disabilities - pobj  
-----  
Norfolk - pobj  
Va. - appos  
-----  
Va. - appos  
-----  
Lincolnshire - pobj  
Ill. - appos  
-----  
Ill. - appos  
-----  
residents - pobj  
with - prep  
disabilities - pobj  
-----  
disabilities - pobj  
-----  
nursing - compound  
homes - pobj  
which - nsubj  
are - relcl  
subject - acomp  
to - prep  
federal - amod  
regulations - pobj  
and - cc  
regular - amod  
inspections - conj  
-----  
federal - amod

regulations - pobj  
     and - cc  
         regular - amod  
     inspections - conj  
 -----  
     regular - amod  
 inspections - conj  
 -----  
     assisted - amod  
         and - cc  
     independent - amod  
     living - compound  
 facilities - nsubj  
 -----  
         widely - advmod  
     varying - amod  
     state - compound  
 laws - pobj  
 -----  
 Oklahoma - nsubj  
     and - cc  
     Alabama - conj  
 -----  
 Alabama - conj  
 -----  
 residents - dobj  
 -----  
 instance - pobj  
 -----  
 Kentucky - nsubj  
 -----  
 admission - dobj  
     of - prep  
         the - det  
         mobile - amod  
         nonambulatory - pobj  
 -----  
     the - det  
     mobile - amod  
 nonambulatory - pobj  
 -----  
 people - dobj  
     who - nsubj  
     use - relcl  
         walkers - dobj  
         or - cc  
         wheelchairs - conj  
 -----

```

who - nsubj
-----
walkers - dobj
    or - cc
    wheelchairs - conj
-----
wheelchairs - conj
-----
    Many - amod
states - nsubj
-----
    similar - amod
policies - dobj
-----
    different - amod
language - pobj
-----
    no - det
wheelchairs, - dobj
-----
    Susan - compound
Silverstein - nsubj
    a - det
    senior - amod
lawyer - appos
    for - prep
                                the - det
                                AARP - compound
                                Foundation - pobj
                                    which - nsubj
                                    is - aux
                                    representing - relcl
                                        the - det
                                        plaintiffs - dobj
-----
    a - det
    senior - amod
lawyer - appos
    for - prep
                                the - det
                                AARP - compound
                                Foundation - pobj
                                    which - nsubj
                                    is - aux
                                    representing - relcl
                                        the - det
                                        plaintiffs - dobj
-----

```

the - det  
 AARP - compound  
 Foundation - pobj  
     which - nsubj  
     is - aux  
     representing - relcl  
         the - det  
         plaintiffs - dobj  
 -----  
     the - det  
 plaintiffs - dobj  
 -----  
 Facilities - nsubj  
 -----  
     their - poss  
 policies - dobj  
 -----  
     state - compound  
 laws - dobj  
         that - nsubj  
     are - relcl  
         ambiguous - acomp  
 -----  
 Administrators - nsubj  
     of - prep  
         the - det  
         facilities - pobj  
             named - acl  
                 in - prep  
                     the - det  
                         New - compound  
                         York - compound  
                         lawsuit - pobj  
             including - prep  
                 Elm - compound  
                 York - compound  
                 Assisted - compound  
                 Living - pobj  
                 and - cc  
                     Madison - compound  
                     York - conj  
                         Assisted - compound  
                     Living - conj  
                 which - nsubj  
                 share - relcl  
                     ownership - dobj  
                     with - prep  
                         the - det

```

other - amod
residence - pobj
in - prep
Queens - pobj
-----
the - det
facilities - pobj
named - acl
in - prep
the - det
New - compound
York - compound
lawsuit - pobj
including - prep
Elm - compound
York - compound
Assisted - compound
Living - pobj
and - cc
Madison - compound
York - conj
Assisted - compound
Living - conj
which - nsubj
share - relcl
ownership - dobj
with - prep
the - det
other - amod
residence - pobj
in - prep
Queens - pobj
-----
the - det
New - compound
York - compound
lawsuit - pobj
-----
Elm - compound
York - compound
Assisted - compound
Living - pobj
and - cc
Madison - compound
York - conj
Assisted - compound
Living - conj
-----

```

Madison - compound  
 York - conj  
 -----  
 Assisted - compound  
 Living - conj  
 -----  
 ownership - dobj  
 -----  
 the - det  
 other - amod  
 residence - pobj  
 in - prep  
 Queens - pobj  
 -----  
 Queens - pobj  
 -----  
 state - compound  
 laws - dobj  
 -----  
 reasons - pobj  
 to - aux  
 exclude - relcl  
 wheelchair - compound  
 users - dobj  
 -----  
 wheelchair - compound  
 users - dobj  
 -----  
 the - det  
 complaint - pobj  
 -----  
 this - det  
 case - pobj  
 -----  
 they - nsubj  
 -----  
 New - compound  
 York - compound  
 State - compound  
 regulations - nsubj  
 governing - acl  
 adult - compound  
 care - compound  
 facilities - dobj  
 and - cc  
 Medicaid - npadvmod  
 funded - amod  
 assisted - amod

```

        living - compound
    programs - conj
        which - dobj
            all - det
            four - nummod
        facilities - nsubjpass
        are - auxpass
    licensed - relcl
        to - aux
    offer - advcl
-----
        adult - compound
    care - compound
facilities - dobj
-----
        Medicaid - npadvmod
    funded - amod
    assisted - amod
    living - compound
programs - conj
    which - dobj
        all - det
        four - nummod
    facilities - nsubjpass
    are - auxpass
    licensed - relcl
        to - aux
    offer - advcl
-----
    all - det
    four - nummod
facilities - nsubjpass
-----
residents - dobj
    who - nsubj
    are - relcl
        chronically - advmod
    chairfast - acomp
        and - cc
        unable - conj
            to - aux
        transfer - xcomp
    or - cc
    require - conj
        assistance - dobj
            to - aux
        transfer - xcomp
even - advmod

```



```

when - advmod
as - prep
    in - prep
        this - det
            case - pobj
                the - det
                    buildings - nsubj
                        have - advcl
                            elevators - dobj
                                -----
who - nsubj
-----
assistance - dobj
-----
    this - det
case - pobj
-----
    the - det
buildings - nsubj
-----
elevators - dobj
-----
    Those - det
        40-year - npadvmod
    old - amod
policies - nsubj
-----
    the - det
    federal - amod
laws - dobj
    barring - acl
        discrimination - dobj
            based - acl
                on - prep
                    disability - pobj
                        -----
discrimination - dobj
    based - acl
        on - prep
            disability - pobj
                -----
disability - pobj
-----
    the - det
state - nsubj
-----
them - dobj
-----

```

that - det  
 reason - pobj  
 -----  
 the - det  
 lawsuit - nsubj  
 -----  
 the - det  
 state - compound  
 health - compound  
 department - dobj  
 and - cc  
 commissioner - conj  
 -----  
 commissioner - conj  
 -----  
 Gov. - compound  
 Andrew - compound  
 Cuomo - conj  
 as - prep  
 defendants - pobj  
 -----  
 defendants - pobj  
 -----  
 Neither - preconj  
 the - det  
 governor - poss  
 s - case  
 office - nsubj  
 nor - cc  
 the - det  
 four - nummod  
 assisted - amod  
 living - compound  
 facilities - conj  
 -----  
 the - det  
 four - nummod  
 assisted - amod  
 living - compound  
 facilities - conj  
 -----  
 The - det  
 state - poss  
 s - case  
 health - compound  
 department - nsubj  
 -----  
 it - nsubj

```

-----
        adult - compound
homes - pobj
-----
it - nsubj
-----
        existing - amod
homes - pobj
-----
        remediation - compound
plans - pobj
        that - nsubj
        include - relcl
                appropriate - amod
                upgrades - dobj
-----
        appropriate - amod
upgrades - dobj
-----
        Newly - advmod
        constructed - amod
        adult - compound
homes - nsubj
-----
it - nsubj
-----
        federal - amod
                state - conj
                        and - cc
                        local - conj
        accessibility - compound
requirements - pobj
-----
        The - det
suit - nsubj
-----
        the - det
        four - nummod
facilities - nsubj
-----
        nondiscriminatory - amod
admission - dobj
        and - cc
                retention - compound
        policies - conj
-----
        retention - compound
policies - conj

```

```

-----
the - det
state - nsubj
-----

its - poss
regulations - dobj
to - aux
reflect - acl
federal - amod
law - dobj
-----

federal - amod
law - dobj
-----

It - nsubj
-----

training - dobj
and - cc
monitoring - conj
to - aux
ensure - advcl
compliance - dobj
-----

monitoring - conj
-----

compliance - dobj
-----

administrators - nsubj
-----

applicants - dobj
for - prep
individual - amod
reasons - pobj
-----

individual - amod
reasons - pobj
-----

they - nsubj
-----

blanket - compound
rules - dobj
-----

wheelchairs - pobj
-----

a - det
much - advmod
larger - amod
number - attr

```

```

        of - prep
            people - pobj
-----
people - pobj
-----
        the - det
        next - amod
        few - amod
years - pobj
-----
who - nsubj
-----
        assisted - amod
living - dobj
-----
        those - det
facilities - nsubj
-----
people - pobj
-----
        Mr. - compound
Freiberg - nsubj
-----
        the - det
        assisted - amod
        living - compound
industry - nsubj
-----
people - dobj
        who - nsubj
        are - aux
    paying - relcl
        for - prep
                the - det
                care - pobj
                themselves - appos
-----
who - nsubj
-----
        the - det
care - pobj
        themselves - appos
-----
themselves - appos
-----
        the - det
percentage - nsubj
        covered - acl

```

```

                by - agent
                  Medicaid - pobj
-----
Medicaid - pobj
-----
        Eric - compound
Carlson - nsubj
          a - det
        lawyer - appos
          at - prep
            Justice - pobj
              in - prep
                Aging - pobj
          an - det
          advocacy - compound
        group - appos
          not - neg
          involved - acl
            in - prep
              the - det
                lawsuit - pobj
-----
        a - det
lawyer - appos
  at - prep
    Justice - pobj
      in - prep
        Aging - pobj
-----
Justice - pobj
  in - prep
    Aging - pobj
-----
Aging - pobj
-----
        an - det
        advocacy - compound
group - appos
  not - neg
  involved - acl
    in - prep
      the - det
        lawsuit - pobj
-----
        the - det
lawsuit - pobj
-----
        A - det

```

```

recent - amod
      Government - compound
      Accountability - compound
Office - compound
report - nsubj
-----
Medicaid - nsubj
-----
      assisted - amod
      living - compound
services - dobj
      for - prep
              more - amod
              than - quantmod
              330,000 - nummod
              people - pobj
              in - prep
                      48 - nummod
                      states - pobj
-----
      more - amod
      than - quantmod
      330,000 - nummod
people - pobj
      in - prep
              48 - nummod
              states - pobj
-----
      48 - nummod
states - pobj
-----
part - dobj
      of - prep
              the - det
              effort - pobj
                      to - aux
                      support - acl
                      alternatives - dobj
                      to - prep
                              expensive - amod
                              nursing - compound
                              homes - pobj
-----
      the - det
effort - pobj
      to - aux
      support - acl
      alternatives - dobj

```

```

                to - prep
                                expensive - amod
                                nursing - compound
                homes - pobj
-----
alternatives - dobj
-----
                expensive - amod
                nursing - compound
homes - pobj
-----
                A - det
                favorable - amod
settlement - nsubj
                or - cc
                        trial - compound
                verdict - conj
                in - prep
                                the - det
                                New - compound
                                York - compound
                lawsuit - pobj
-----
                trial - compound
verdict - conj
-----
                the - det
                        New - compound
                York - compound
lawsuit - pobj
-----
changes - dobj
-----
                assisted - amod
living - pobj
                beyond - prep
                                Medicaid - compound
                                programs - pobj
                                and - cc
                                beyond - conj
                                                New - compound
                                                York - compound
                State - pobj
-----
                Medicaid - compound
programs - pobj
-----
                New - compound

```



York - compound  
 State - pobj  
 -----  
     Private - amod  
     pay - nmod  
     assisted - amod  
 living - nsubj  
 -----  
     the - det  
         Fair - compound  
     Housing - compound  
 Act - pobj  
 -----  
     Jota - compound  
 Borgmann - nsubj  
     senior - amod  
     staff - compound  
 lawyer - appos  
     at - prep  
         Mobilization - pobj  
             for - prep  
                 Justice - pobj  
             a - det  
                 legal - amod  
             services - compound  
         organization - conj  
         and - cc  
             counsel - punct  
                 in - punct  
                     the - det  
                 case - conj  
 -----  
     senior - amod  
     staff - compound  
 lawyer - appos  
     at - prep  
         Mobilization - pobj  
             for - prep  
                 Justice - pobj  
             a - det  
                 legal - amod  
             services - compound  
         organization - conj  
         and - cc  
             counsel - punct  
                 in - punct  
                     the - det  
                 case - conj

-----  
Mobilization - pobj  
for - prep  
Justice - pobj  
-----  
Justice - pobj  
-----  
a - det  
legal - amod  
services - compound  
organization - conj  
and - cc  
counsel - punct  
in - punct  
the - det  
case - conj  
-----  
counsel - punct  
in - punct  
the - det  
case - conj  
-----  
Similar - amod  
court - compound  
cases - nsubj  
-----  
assisted - amod  
living - compound  
regulations - dobj  
and - cc  
practices - conj  
around - prep  
the - det  
country - pobj  
-----  
practices - conj  
around - prep  
the - det  
country - pobj  
-----  
the - det  
country - pobj  
-----  
Mr. - compound  
Carlson - nsubj  
-----  
It - nsubj  
-----

a - det  
switch - dobj  
-----  
he - nsubj  
-----  
It - nsubjpass  
-----  
step - pobj  
-----  
they - nsubj  
-----  
impact - dobj  
-----  
the - det  
relatives - nsubj  
that - dobj  
testers - nsubj  
described - relcl  
to - prep  
administrators - pobj  
-----  
testers - nsubj  
-----  
administrators - pobj  
-----  
her - poss  
60s - pobj  
-----  
court - compound  
filings - pobj  
only - advmod  
as - prep  
Jane - compound  
Doe - pobj  
-----  
Jane - compound  
Doe - pobj  
-----  
she - nsubj  
-----  
she - nsubjpass  
-----  
care - compound  
facilities - pobj  
-----  
She - nsubj  
-----  
a - det

plaintiff - attr  
     in - prep  
                 the - det  
                 lawsuit - pobj  
 -----  
         the - det  
 lawsuit - pobj  
 -----  
         her - poss  
 brother - pobj  
                 who - nsubj  
         acts - relcl  
                 as - prep  
                         her - poss  
                 power - pobj  
                         of - prep  
                         attorney - pobj  
 -----  
 who - nsubj  
 -----  
         her - poss  
 power - pobj  
         of - prep  
                 attorney - pobj  
 -----  
 attorney - pobj  
 -----  
         severe - amod  
 osteoporosis - pobj  
 -----  
         the - det  
 plaintiff - nsubj  
 -----  
 VillageCare - pobj  
 -----  
         five - nummod  
 years - pobj  
 -----  
         last - amod  
 spring - pobj  
                 when - advmod  
                         a - det  
                         urinary - amod  
                         tract - compound  
                 infection - nsubj  
                         and - cc  
                         its - poss  
                 complications - conj

```

sent - relcl
      her - dobj
      to - prep
            a - det
            hospital - pobj
-----
a - det
urinary - amod
tract - compound
infection - nsubj
and - cc
      its - poss
      complications - conj
-----
      its - poss
      complications - conj
-----
her - dobj
-----
      a - det
      hospital - pobj
-----
      a - det
      nursing - compound
home - pobj
-----
rehabilitation - pobj
-----
      two - nummod
months - pobj
-----
      the - det
      complaint - pobj
-----
VillageCare - nsubj
-----
her - dobj
-----
she - nsubj
-----
      more - amod
assistance - dobj
      than - mark
      it - nsubj
      could - aux
      provide - advcl
      including - prep
      help - pobj

```

```

                                with - prep
                                ambulation - pobj
-----
it - nsubj
-----
help - pobj
    with - prep
        ambulation - pobj
-----
ambulation - pobj
-----
her - dobj
-----
she - nsubj
-----
It - nsubj
-----
    eviction - compound
proceedings - dobj
    which - dobj
        her - poss
        brother - nsubj
    contested - relcl
-----
    her - poss
brother - nsubj
-----
December - pobj
-----
    the - det
facility - nsubj
-----
person - pobj
-----
assessment - conj
-----
    The - det
session - nsubj
    including - prep
        cognitive - amod
        tests - pobj
            sitting - conj
                and - cc
                standing - conj
                and - cc
                taking - conj
                    her - poss
                    shoes - dobj

```

```

on - prep
and - cc
off - conj
-----
cognitive - amod
tests - pobj
sitting - conj
and - cc
standing - conj
and - cc
taking - conj
her - poss
shoes - dobj
on - prep
and - cc
off - conj
-----
her - poss
shoes - dobj
-----
It - nsubj
-----
her - poss
brother - nsubj
who - nsubj
traveled - relcl
from - prep
his - poss
Florida - compound
home - pobj
to - aux
accompany - advcl
her - dobj
-----
who - nsubj
-----
his - poss
Florida - compound
home - pobj
-----
her - dobj
-----
It - nsubj
-----
a - det
very - advmod
difficult - amod
thing - attr

```

```

-----
my - poss
sister - nsubj
-----
it - dobj
-----
She - nsubj
-----
her - poss
walker - pobj
-----
VillageCare - nsubj
-----
her - dobj
-----
she - nsubj
-----
assistance - dobj
with - prep
    activities - pobj
        of - prep
            daily - amod
                living - pobj
                    including - prep
                        locomotion - pobj
-----
activities - pobj
of - prep
    daily - amod
        living - pobj
            including - prep
                locomotion - pobj
-----
daily - amod
living - pobj
including - prep
    locomotion - pobj
-----
locomotion - pobj
-----
she - nsubj
-----
a - det
nursing - compound
home - pobj
    where - advmod
    she - nsubjpass
    is - auxpass

```



```

discouraged - relcl
      from - prep
            walking - pcomp
                        at - advmod
                        all - advmod
-----
she - nsubjpass
-----
worries - conj
      that - mark
      she - nsubj
      may - aux
      never - neg
      go - ccomp
      home - advmod
-----
she - nsubj
-----
It - nsubj
-----
      her - poss
brother - nsubj
-----
I - nsubj
-----
her - dobj
-----
You - nsubj
-----
day, - ROOT
-----
I - nsubj
-----

```

```

In [10]: # Spacy tutorial method
         for chunk in processed_text.noun_chunks:
             print(chunk.text,
                   chunk.root.text,
                   chunk.root.dep_)

```

```

March March pobj
a woman woman nsubj
the admissions coordinator coordinator pobj
Queens Queens pobj
placement placement pobj
her mother mother pobj
law law pobj

```

who who nsubj  
 a wheelchair wheelchair dobj  
 hip surgery surgery pobj  
 Wheelchairs Wheelchairs nsubjpass  
 the facility facility pobj  
 the coordinator coordinator nsubj  
 her her dobj  
 Walkers Walkers nsubj  
 canes canes conj  
 rollators rollators conj  
 hemi canes canes conj  
 something something nsubj  
 he he nsubj  
 we we nsubj  
 a wheelchair-bound patient patient dobj  
 November November pobj  
 another woman woman nsubj  
 her mother mother pobj  
 law law pobj  
 the admissions coordinator coordinator dobj  
 VillageCare VillageCare pobj  
 Manhattan Manhattan pobj  
 We We nsubj  
 residents residents dobj  
 wheelchairs wheelchairs pobj  
 the coordinator coordinator nsubj  
 phone phone pobj  
 the woman woman nsubj  
 her mother mother nsubj  
 -law law pobj  
 a chair chair dobj  
 decades decades pobj  
 assistance assistance pobj  
 The coordinator coordinator nsubj  
 We We nsubj  
 anyone anyone dobj  
 a wheelchair wheelchair pobj  
 she she nsubj  
 both places places pobj  
 two other assisted living facilities facilities pobj  
 New York City City pobj  
 people people apppos  
 who who nsubj  
 similar inquiries inquiries dobj  
 their relatives relatives dobj  
 applications applications dobj  
 None None nsubj  
 these people people pobj

family members members dobj  
who who nsubj  
assisted living living dobj  
They They nsubj  
testers testers attr  
professional actors actors appos  
the nonprofit Fair Housing Justice Center Center pobj  
such facilities facilities nsubj  
wheelchair users users pobj  
Excerpts Excerpts nsubjpass  
their recorded conversations conversations pobj  
a federal lawsuit lawsuit pobj  
those centers centers pobj  
they they nsubj  
people people pobj  
wheelchairs wheelchairs pobj  
the Fair Housing Act Act dobj  
the Americans Americans appos  
Disabilities Disabilities pobj  
Act Act appos  
other federal laws laws conj  
People People nsubjpass  
eviction eviction pobj  
even part-time use use pobj  
a wheelchair wheelchair pobj  
Fred Freiberg Freiberg nsubj  
director director appos  
the anti-discrimination group group pobj  
the suit suit dobj  
complaints complaints dobj  
residents residents pobj  
families families conj  
It It nsubj  
They They nsubjpass  
you you nsubj  
a wheelchair wheelchair dobj  
you you nsubj  
anymore. Related cases cases nsubj  
years years pobj  
senior housing housing pobj  
continuing care retirement communities communities pobj  
instance instance pobj  
the Justice Department Department nsubj  
settlements settlements dobj  
a continuing care facility facility pobj  
Norfolk Norfolk pobj  
Va. Va. appos  
Lincolnshire Lincolnshire pobj

Ill. Ill. appos  
 residents residents pobj  
 disabilities disabilities pobj  
 nursing homes homes pobj  
 federal regulations regulations pobj  
 regular inspections inspections conj  
 assisted and independent living facilities facilities nsubj  
 widely varying state laws laws pobj  
 Oklahoma Oklahoma nsubj  
 Alabama Alabama conj  
 residents residents dobj  
 instance instance pobj  
 Kentucky Kentucky nsubj  
 admission admission dobj  
 the mobile nonambulatory nonambulatory pobj  
 people people dobj  
 who who nsubj  
 walkers walkers dobj  
 wheelchairs wheelchairs conj  
 Many states states nsubj  
 similar policies policies dobj  
 different language language pobj  
 no wheelchairs, wheelchairs, dobj  
 Susan Silverstein Silverstein nsubj  
 a senior lawyer lawyer appos  
 the AARP Foundation Foundation pobj  
 the plaintiffs plaintiffs dobj  
 Facilities Facilities nsubj  
 their policies policies dobj  
 state laws laws dobj  
 Administrators Administrators nsubj  
 the facilities facilities pobj  
 the New York lawsuit lawsuit pobj  
 Elm York Assisted Living Living pobj  
 Madison York York conj  
 Assisted Living Living conj  
 ownership ownership dobj  
 the other residence residence pobj  
 Queens Queens pobj  
 state laws laws dobj  
 reasons reasons pobj  
 wheelchair users users dobj  
 the complaint complaint pobj  
 this case case pobj  
 they they nsubj  
 New York State regulations regulations nsubj  
 adult care facilities facilities dobj  
 Medicaid-funded assisted living programs programs conj

all four facilities facilities nsubjpass  
residents residents dobj  
who who nsubj  
assistance assistance dobj  
this case case pobj  
the buildings buildings nsubj  
elevators elevators dobj  
Those 40-year-old policies policies nsubj  
the federal laws laws dobj  
discrimination discrimination dobj  
disability disability pobj  
the state state nsubj  
them them dobj  
that reason reason pobj  
the lawsuit lawsuit nsubj  
the state health department department dobj  
commissioner commissioner conj  
Gov. Andrew Cuomo Cuomo conj  
defendants defendants pobj  
Neither the governors office office nsubj  
the four assisted living facilities facilities conj  
The states health department department nsubj  
it it nsubj  
adult homes homes pobj  
it it nsubj  
existing homes homes pobj  
remediation plans plans pobj  
appropriate upgrades upgrades dobj  
Newly constructed adult homes homes nsubj  
it it nsubj  
federal, state and local accessibility requirements requirements pobj  
The suit suit nsubj  
the four facilities facilities nsubj  
nondiscriminatory admission admission dobj  
retention policies policies conj  
the state state nsubj  
its regulations regulations dobj  
federal law law dobj  
It It nsubj  
training training dobj  
monitoring monitoring conj  
compliance compliance dobj  
administrators administrators nsubj  
applicants applicants dobj  
individual reasons reasons pobj  
they they nsubj  
blanket rules rules dobj  
wheelchairs wheelchairs pobj

a much larger number number attr  
people people pobj  
the next few years years pobj  
who who nsubj  
assisted living living dobj  
those facilities facilities nsubj  
people people pobj  
Mr. Freiberg Freiberg nsubj  
the assisted living industry industry nsubj  
people people dobj  
who who nsubj  
the care care pobj  
themselves themselves appos  
the percentage percentage nsubj  
Medicaid Medicaid pobj  
Eric Carlson Carlson nsubj  
a lawyer lawyer appos  
Justice Justice pobj  
Aging Aging pobj  
an advocacy group group appos  
the lawsuit lawsuit pobj  
A recent Government Accountability Office report report nsubj  
Medicaid Medicaid nsubj  
assisted-living services services dobj  
more than 330,000 people people pobj  
48 states states pobj  
part part dobj  
the effort effort pobj  
alternatives alternatives dobj  
expensive nursing homes homes pobj  
A favorable settlement settlement nsubj  
trial verdict verdict conj  
the New York lawsuit lawsuit pobj  
changes changes dobj  
assisted living living pobj  
Medicaid programs programs pobj  
New York State State pobj  
Private-pay assisted living living nsubj  
the Fair Housing Act Act pobj  
Jota Borgmann Borgmann nsubj  
senior staff lawyer lawyer appos  
Mobilization Mobilization pobj  
Justice Justice pobj  
a legal services organization organization conj  
co-counsel in the case case conj  
Similar court cases cases nsubj  
assisted living regulations regulations dobj  
practices practices conj

the country country pobj  
Mr. Carlson Carlson nsubj  
It It nsubj  
a switch switch dobj  
he he nsubj  
It It nsubjpass  
step step pobj  
they they nsubj  
impact impact dobj  
the relatives relatives nsubj  
testers testers nsubj  
administrators administrators pobj  
her 60s 60s pobj  
court filings filings pobj  
Jane Doe Doe pobj  
she she nsubj  
she she nsubjpass  
care facilities facilities pobj  
She She nsubj  
a plaintiff plaintiff attr  
the lawsuit lawsuit pobj  
her brother brother pobj  
who who nsubj  
her power power pobj  
attorney attorney pobj  
severe osteoporosis osteoporosis pobj  
the plaintiff plaintiff nsubj  
VillageCare VillageCare pobj  
five years years pobj  
last spring spring pobj  
a urinary tract infection infection nsubj  
its complications complications conj  
her her dobj  
a hospital hospital pobj  
a nursing home home pobj  
rehabilitation rehabilitation pobj  
two months months pobj  
the complaint complaint pobj  
VillageCare VillageCare nsubj  
her her dobj  
she she nsubj  
more assistance assistance dobj  
it it nsubj  
help help pobj  
ambulation ambulation pobj  
her her dobj  
she she nsubj  
It It nsubj

eviction proceedings proceedings dobj  
 her brother brother nsubj  
 December December pobj  
 the facility facility nsubj  
 person person pobj  
 assessment assessment conj  
 The session session nsubj  
 cognitive tests tests pobj  
 her shoes shoes dobj  
 It It nsubj  
 her brother brother nsubj  
 who who nsubj  
 his Florida home home pobj  
 her her dobj  
 It It nsubj  
 a very difficult thing thing attr  
 my sister sister nsubj  
 it it dobj  
 She She nsubj  
 her walker walker pobj  
 VillageCare VillageCare nsubj  
 her her dobj  
 she she nsubj  
 assistance assistance dobj  
 activities activities pobj  
 daily living living pobj  
 locomotion locomotion pobj  
 she she nsubj  
 a nursing home home pobj  
 she she nsubjpass  
 worries worries conj  
 she she nsubj  
 It It nsubj  
 her brother brother nsubj  
 I I nsubj  
 her her dobj  
 You You nsubj  
 day, day, ROOT  
 I I nsubj

```

In [11]: # Show the most common Entities and their types.
         entities = [token.text + " " + token.label_
                     for token in processed_text.ents
                     ]
         entities_freq = Counter(entities)
         common_entities = entities_freq.most_common(10)
         common_entities
  
```



```
Out[11]: [('VillageCare ORG', 4),
          ('Medicaid ORG', 4),
          ('four CARDINAL', 3),
          ('Queens GPE', 2),
          ('the Fair Housing Act LAW', 2),
          ('New York GPE', 2),
          ('New York State GPE', 2),
          ('March 2017 DATE', 1),
          ('Madison York Assisted Living GPE', 1),
          ('November DATE', 1)]
```

```
In [12]: # Find Entites and their dependency (hint: entity.root.head)
        for entity in processed_text.ents:
            print(entity.label_, entity.root.head)
```

```
DATE In
GPE at
GPE in
DATE In
ORG at
CARDINAL at
GPE in
DATE for
CARDINAL facilities
GPE in
ORG for
LAW violating
LAW Act
PERSON said
ORDINAL -
DATE for
DATE In
ORG reached
GPE in
GPE Norfolk
CARDINAL facility
GPE in
GPE Lincolnshire
GPE require
GPE Oklahoma
GPE allows
PERSON said
ORG for
GPE lawsuit
GPE including
PERSON Living
PERSON Living
GPE in
```

GPE regulations  
ORG funded  
CARDINAL facilities  
CARDINAL old  
PERSON names  
CARDINAL facilities  
DATE working  
CARDINAL facilities  
DATE in  
PERSON said  
ORG by  
PERSON said  
ORG at  
ORG in  
ORG report  
DATE in  
ORG covered  
CARDINAL people  
CARDINAL states  
GPE lawsuit  
ORG programs  
GPE beyond  
LAW to  
PERSON said  
ORG at  
PERSON pointed  
DATE in  
PERSON as  
ORG at  
DATE for  
DATE until  
DATE After  
ORG told  
DATE In  
TIME lasted  
GPE home  
ORG refused  
DATE living

```
In [16]: # Find the most similar words in the article
         mylist= [(token1.text, token2.text, token1.similarity(token2)) for token2 in processed_

         import pandas as pd

         df = pd.DataFrame(mylist)
         df.columns = ["Token1", "Token2", "Similarity"]
         condition = (df.Similarity == 1) # excluding complete similarity (identical word compar
```

```

excluded = df[~condition]
sort_top = excluded.sort_values("Similarity", ascending=False)
sort_top

```

```

Out[16]:

```

	Token1	Token2	Similarity
1466894	she	he	0.940325
248974	he	she	0.940325
112355	could	can	0.928260
235531	can	could	0.928260
234145	we	We	0.923165
110969	We	we	0.923165
128644	December	November	0.919544
1695332	November	December	0.919544
506992	not	nt	0.914729
113936	nt	not	0.914729
1154915	not	nt	0.908144
1676683	nt	not	0.908144
1152401	can	could	0.906925
113017	could	can	0.906925
1153787	not	nt	0.903787
114403	nt	not	0.903787
1676216	nt	not	0.903370
508120	not	nt	0.903370
1153876	not	nt	0.897983
237668	nt	not	0.897983
112550	ca	can	0.893729
505606	can	ca	0.893729
173403	in	on	0.893460
385155	on	in	0.893460
507081	not	nt	0.891237
237201	nt	not	0.891237
229735	not	nt	0.891232
1676015	nt	not	0.891232
506357	could	ca	0.890284
1152685	ca	could	0.890284
...	...	...	...
1509130	facilities	in	-0.361261
1199114	in	facilities	-0.361261
738227	for	Facilities	-0.362232
31003	Facilities	for	-0.362232
1851208	larger	is	-0.363472
1175816	is	larger	-0.363472
1301012	must	-	-0.363726
689284	-	must	-0.363726
1305203	Facilities	for	-0.365534
739147	for	Facilities	-0.365534
738778	with	Facilities	-0.375959
794138	Facilities	with	-0.375959

433013	,	part	-0.377315
1237117	part	,	-0.377315
1145928	Facilities	for	-0.377583
739032	for	Facilities	-0.377583
739331	with	Facilities	-0.383096
1560043	Facilities	with	-0.383096
1016817	members	considered	-0.383660
315129	considered	members	-0.383660
738626	with	Facilities	-0.385675
583618	Facilities	with	-0.385675
738445	for	Facilities	-0.389710
332933	Facilities	for	-0.389710
739094	for	Facilities	-0.394835
1231798	Facilities	for	-0.394835
738458	against	Facilities	-0.402491
350938	Facilities	against	-0.402491
739042	against	Facilities	-0.410657
1159778	Facilities	against	-0.410657

[1894752 rows x 3 columns]