

Problem 1: Provide links of articles

Solution:

- <http://www.telegraph.co.uk/culture/art/art-reviews/11525401/Sonia-Delaunay-Tate-Modern-review-a-riot-of-hues.html>
- <http://www.telegraph.co.uk/culture/art/art-reviews/11527259/Velazquez-Grand-Palais-Paris-review-super.html>

Problem 2: Table for URI, extracted entity

Solution:

Note: The arrow points to the Person for whom the text is applicable to

1. uri	label
2. http://d.opencalais.com/pershash-1/86c657d8-b4be-3eed-af55-47fe2c879a9e	Charles->"Charles"
3. http://d.opencalais.com/pershash-1/24382f08-597b-3256-8b21-601507a8f846	Nancy Cunard->"Nancy Cunard"
4. http://d.opencalais.com/pershash-1/415034e6-21e3-32d3-9aed-6f1473493c23	Marlene Dumas->"Marlene Dumas"
5. http://d.opencalais.com/pershash-1/d37ce104-e574-3886-82c4-e3f75a81fc29	Robert Delaunay->"Robert Delaunay"
6. http://d.opencalais.com/pershash-1/d37ce104-e574-3886-82c4-e3f75a81fc29	him->"Robert Delaunay"
7. http://d.opencalais.com/pershash-1/d37ce104-e574-3886-82c4-e3f75a81fc29	Robert->"Robert Delaunay"
8. http://d.opencalais.com/pershash-1/d37ce104-e574-3886-82c4-e3f75a81fc29	his->"Robert Delaunay"
9. http://d.opencalais.com/pershash-1/d37ce104-e574-3886-82c4-e3f75a81fc29	Robert->"Robert Delaunay"
10. http://d.opencalais.com/pershash-1/d37ce104-e574-3886-82c4-e3f75a81fc29	Robert->"Robert Delaunay"
11. http://d.opencalais.com/pershash-1/d37ce104-e574-3886-82c4-e3f75a81fc29	Robert->"Robert Delaunay"
12. http://d.opencalais.com/pershash-1/d37ce104-e574-3886-82c4-e3f75a81fc29	Robert->"Robert Delaunay"
13. http://d.opencalais.com/pershash-1/d37ce104-e574-3886-82c4-e3f75a81fc29	his->"Robert Delaunay"
14. http://d.opencalais.com/pershash-1/c052e24b-eed0-3a51-9ae0-26db242df024	Gloria Swanson->"Gloria Swanson"

15. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	Sonia Delaunay->"Sonia Delaunay"
16. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	Delaunay->"Sonia Delaunay"
17. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	Sonia Delaunay->"Sonia Delaunay"
18. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	Delaunay->"Sonia Delaunay"
19. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	her->"Sonia Delaunay"
20. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	her->"Sonia Delaunay"
21. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	Her->"Sonia Delaunay"
22. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	Sonia->"Sonia Delaunay"
23. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	she->"Sonia Delaunay"
24. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	She->"Sonia Delaunay"
25. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	she->"Sonia Delaunay"
26. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	her->"Sonia Delaunay"
27. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	Delaunay->"Sonia Delaunay"
28. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	her->"Sonia Delaunay"
29. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	her->"Sonia Delaunay"
30. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	she->"Sonia Delaunay"
31. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	she->"Sonia Delaunay"
32. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	her->"Sonia Delaunay"

33. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	she->"Sonia Delaunay"
34. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	Delaunay->"Sonia Delaunay"
35. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	her->"Sonia Delaunay"
36. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	She->"Sonia Delaunay"
37. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	her->"Sonia Delaunay"
38. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	Delaunay->"Sonia Delaunay"
39. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	She->"Sonia Delaunay"
40. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	she->"Sonia Delaunay"
41. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	She->"Sonia Delaunay"
42. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	her->"Sonia Delaunay"
43. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	Delaunay->"Sonia Delaunay"
44. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	her->"Sonia Delaunay"
45. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	Sonia->"Sonia Delaunay"
46. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	her->"Sonia Delaunay"
47. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	she->"Sonia Delaunay"
48. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	She->"Sonia Delaunay"
49. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	Sonia->"Sonia Delaunay"
50. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	Her->"Sonia Delaunay"

51. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	her->"Sonia Delaunay"
52. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	she->"Sonia Delaunay"
53. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	Delaunay->"Sonia Delaunay"
54. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	She->"Sonia Delaunay"
55. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	her->"Sonia Delaunay"
56. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	she->"Sonia Delaunay"
57. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	Delaunay->"Sonia Delaunay"
58. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	her->"Sonia Delaunay"
59. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	she->"Sonia Delaunay"
60. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	she->"Sonia Delaunay"
61. http://d.opencalais.com/pershash-1/4b6fd697-34cc-30c4-b3af-a9765a79d791	Delaunay->"Sonia Delaunay"
62. http://d.opencalais.com/genericHasher-1/cabec86b-1ef2-36a3-9afd-4b58b6e470a7	Odessa->"Odessa"
63. http://d.opencalais.com/genericHasher-1/8a279b90-2170-3e5f-a909-c3b49316d0df	St Petersburg->"St Petersburg"
64. http://d.opencalais.com/genericHasher-1/56fc901f-59a3-3278-addc-b0fc69b283e7	Paris->"Paris"
65. http://d.opencalais.com/genericHasher-1/56fc901f-59a3-3278-addc-b0fc69b283e7	Paris->"Paris"
66. http://d.opencalais.com/genericHasher-1/56fc901f-59a3-3278-addc-b0fc69b283e7	Paris->"Paris"
67. http://d.opencalais.com/genericHasher-1/56fc901f-59a3-3278-addc-b0fc69b283e7	Paris->"Paris"
68. http://d.opencalais.com/genericHasher-1/2e458a3d-9b69-33fb-9ce6-98ef05a4fe52	the times Delaunay lived through->"Sonia Delaunay"

69. http://d.opencalais.com/genericHasher-1/262b4961-0477-3bea-9312-cc8ba0d4a7b1	Delaunay bridged->"Sonia Delaunay"
70. http://d.opencalais.com/genericHasher-1/237a1b23-e7be-3efc-8d07-053612534c32	Sheâ€™d often wear->"Sonia Delaunay"
71. http://d.opencalais.com/genericHasher-1/f073c9f9-93f4-31e7-a909-ff541bd73709	She spent the Second World War->"Sonia Delaunay"
72. http://d.opencalais.com/genericHasher-1/9699ee11-db81-317b-a3db-16e10b510fca	She embraced fashion->"Sonia Delaunay"
73. http://d.opencalais.com/genericHasher-1/777c7c2b-c8a8-3d64-a264-6a0a246463a7	Delaunay get on->"Sonia Delaunay"
74. http://d.opencalais.com/genericHasher-1/53e4116c-4d00-3ef3-adb7-d8c9c47f04a0	she was a perpetual outsider->"Sonia Delaunay"
75. http://d.opencalais.com/genericHasher-1/82c91d41-5fa0-32f6-acc6-1ca8fd39fce3	She claimed her deep affinity for colour, moreover, stemmed from the âœpure coloursâ€ of peasant weddings back in Ukraine.->"Sonia Delaunay"
76. http://d.opencalais.com/genericHasher-1/1180c27a-ddb2-3a57-a6e5-04f995691388	Robert died of cancer->"Robert Delaunay"
77. http://d.opencalais.com/genericHasher-1/d03971b7-60a5-3b79-801b-90780b5cbd68	Amsterdamâ€™s Metz & Co seized on her fashion designs->"Amsterdamâ€™s Metz & Co"
78. http://d.opencalais.com/genericHasher-1/34969917-1896-3f29-ba9a-6fb601ac063f	she designed in patchwork colours->"Sonia Delaunay"
79. http://d.opencalais.com/genericHasher-1/fdcdd296-d75c-303a-b72e-4ba9a67e9fcd	she always played down her own work->"Sonia Delaunay"
80. http://d.opencalais.com/genericHasher-1/6d34a138-2c64-31b8-ab5f-21d348decda5	she developed a theory->"Sonia Delaunay"
81. http://d.opencalais.com/genericHasher-1/68edd6f2-efd3-30ac-8fe7-d39db4363015	Her bleached yellow skin->"Sonia Delaunay"
82. http://d.opencalais.com/genericHasher-1/084cf841-75c5-3dbf-812d-8be530b304b8	She didnâ€™t give up art->"Sonia Delaunay"
83. http://d.opencalais.com/genericHasher-1/841008b6-fc79-307b-9aad-b52abd5266f2	she decorated in the late Sixties->"Sonia Delaunay"
84. http://d.opencalais.com/genericHasher-1/5c68f9c9-3ca0-3dc4-b7fe-e576bcfe2824	she worked->"Sonia Delaunay"
85. http://d.opencalais.com/genericHasher-1/b60c0bea-4a90-3f1e-9be6-4ac3de13e62a	she rejected painting->"Sonia Delaunay"
86. http://d.opencalais.com/genericHasher-1/cc5251b-e2d1-3302-9042-0292f315fa92	she needed an alternative means of funding->"Sonia Delaunay"

87. http://d.opencalais.com/genericHasher-1/636bc105-0530-3a3a-bb9d-6e0729f9d54b	Robert put it->"Robert Delaunay"
88. http://d.opencalais.com/genericHasher-1/b325947f-91ce-3f5d-a5b1-229416f9962d	It also saw Delaunay->"Sonia Delaunay"
89. http://d.opencalais.com/genericHasher-1/57f4cef1-466c-36f3-a1ea-7b3583445570	Delaunay had a privileged youth->"Sonia Delaunay"
90. http://d.opencalais.com/pershash-1/9f1e2d56-8b00-3779-b0f9-af05bb037f5f	King Philip IV->"Philip IV"
91. http://d.opencalais.com/pershash-1/9f1e2d56-8b00-3779-b0f9-af05bb037f5f	King Philip IV->"Philip IV"
92. http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	Diego Velázquez->"Diego Velázquez"
93. http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	his->"Diego Velázquez"
94. http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	His->"Diego Velázquez"
95. http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	him->"Diego Velázquez"
96. http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	his->"Diego Velázquez"
97. http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	his->"Diego Velázquez"
98. http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	His->"Diego Velázquez"
99. http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	his->"Diego Velázquez"
100. http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	Velázquez->"Diego Velázquez"
101. http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	him->"Diego Velázquez"
102. http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	his->"Diego Velázquez"
103. http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	His->"Diego Velázquez"
104. http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	his->"Diego Velázquez"

105.	http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	his->"Diego Velázquez"
106.	http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	he->"Diego Velázquez"
107.	http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	His->"Diego Velázquez"
108.	http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	his->"Diego Velázquez"
109.	http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	him->"Diego Velázquez"
110.	http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	his->"Diego Velázquez"
111.	http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	his->"Diego Velázquez"
112.	http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	Velázquez->"Diego Velázquez"
113.	http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	his->"Diego Velázquez"
114.	http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	him->"Diego Velázquez"
115.	http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	his->"Diego Velázquez"
116.	http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	Velázquez->"Diego Velázquez"
117.	http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	his->"Diego Velázquez"
118.	http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	his->"Diego Velázquez"
119.	http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	the King->"Diego Velázquez"
120.	http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	him->"Diego Velázquez"
121.	http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	he->"Diego Velázquez"
122.	http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	his->"Diego Velázquez"

123.	http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	his->"Diego Velázquez"
124.	http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	he->"Diego Velázquez"
125.	http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	his->"Diego Velázquez"
126.	http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	Velázquez->"Diego Velázquez"
127.	http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	his->"Diego Velázquez"
128.	http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	her->"Diego Velázquez"
129.	http://d.opencalais.com/pershash-1/a348acef-bdb8-3a5a-aa50-7f42fbf0e412	her->"Diego Velázquez"
130.	http://d.opencalais.com/genericHasher-1/0e13c7ea-337f-36ec-b788-7aeba90708e7	It presents him->"Diego Velázquez"
131.	http://d.opencalais.com/genericHasher-1/88e9a078-7eb4-34a0-83e7-ebbfd475e06b	Diego Velázquez died->"Diego Velázquez"
132.	http://d.opencalais.com/genericHasher-1/cf091c18-b759-31a9-9d60-583b1010f923	His complex, enigmatic portraits made him->"Diego Velázquez"
133.	http://d.opencalais.com/genericHasher-1/97a8be23-18d3-3d54-aff2-286cf1b7b756	Velázquez toned his style->"Diego Velázquez"
134.	http://d.opencalais.com/genericHasher-1/24d02386-1843-3853-939c-2ee5b8c7a78c	him grew->"Diego Velázquez"
135.	http://d.opencalais.com/genericHasher-1/54136ab0-15ab-3ae3-838d-56f1bc92be63	he honed his critical eye->"Diego Velázquez"
136.	http://d.opencalais.com/genericHasher-1/6029764f-c735-3146-ae4b-11a765bde35f	he quickly discovered a talent for naturalism->"Diego Velázquez"

Problem 3: Manually labelled table

1. uri	manual_label	False Negative
2. Person	Marlene Dumas->"Marlene Dumas"	Yes
3. Person	Sonia Delaunay->"Sonia Delaunay"	No
4. Person	Matisse->"Matisse"	Yes
5. Person	Malevich->"Malevich"	Yes
6. Person	Delaunay->"Sonia Delaunay"	No
7. Person	Sonia Delaunay->"Sonia Delaunay"	No
8. Person	Delaunay->"Sonia Delaunay"	No
9. Person	her->"Sonia Delaunay"	No
10. Person	her->"prostitute"	Yes
11. Person	Gauguin->"Gauguin"	Yes
12. Person	Her->"prostitute"	Yes
13. Person	Sonia->"Sonia Delaunay"	No
14. Person	Robert Delaunay->"Robert Delaunay"	No
15. Person	she->"Sonia Delaunay"	No
16. Person	him->"Robert Delaunay"	No
17. Person	She->"Sonia Delaunay"	No
18. Person	she->"Sonia Delaunay"	No
19. Person	her->"Sonia Delaunay"	No
20. Person	Charles->"Charles"	No
21. Person	Picasso->"Picasso"	Yes
22. Person	Braque->"Braque"	Yes
23. Person	Delaunay->"Sonia Delaunay"	No
24. Person	her->"Sonia Delaunay"	No
25. Person	her->"Sonia Delaunay"	No
26. Person	husband->"Robert Delaunay"	Yes
27. Person	she->"Sonia Delaunay"	No
28. Person	she->"Sonia Delaunay"	No
29. Person	her->"Sonia Delaunay"	No
30. Person	Robert->"Robert Delaunay"	No

31. Person	his->"Robert Delaunay"	No
32. Person	she->"Sonia Delaunay"	No
33. Person	Delaunay->"Sonia Delaunay"	No
34. Person	her->"Sonia Delaunay"	No
35. Person	Diaghilev->"Diaghilev"	Yes
36. Person	She->"Sonia Delaunay"	No
37. Person	her->"Sonia Delaunay"	No
38. Person	Delaunay->"Sonia Delaunay"	No
39. Person	She->"Sonia Delaunay"	No
40. Person	she->"Sonia Delaunay"	No
41. Person	She->"Sonia Delaunay"	No
42. Person	Robert->"Robert Delaunay"	No
43. Person	her->"Sonia Delaunay"	No
44. Person	Gloria Swanson->"Gloria Swanson"	No
45. Person	Nancy Cunard->"Nancy Cunard"	No
46. Person	Delaunay->"Sonia Delaunay"	No
47. Person	her->"Sonia Delaunay"	No
48. Person	Robert->"Robert Delaunay"	No
49. Person	Sonia->"Sonia Delaunay"	No
50. Person	her->"Sonia Delaunay"	No
51. Person	Robert->"Robert Delaunay"	No
52. Person	she->"Sonia Delaunay"	No
53. Person	She->"Sonia Delaunay"	No
54. Person	Robert->"Robert Delaunay"	No
55. Person	Sonia->"Sonia Delaunay"	No
56. Person	Her->"Sonia Delaunay"	No
57. Person	her->"Sonia Delaunay"	No
58. Person	she->"Sonia Delaunay"	No
59. Person	Delaunay->"Sonia Delaunay"	No
60. Person	She->"Sonia Delaunay"	No
61. Person	her->"Sonia Delaunay"	No
62. Person	she->"Sonia Delaunay"	No

63. Person	Picasso->"Picasso"	Yes
64. Person	his->"Picasso"	Yes
65. Person	Delaunay->"Sonia Delaunay"	No
66. Person	her->"Sonia Delaunay"	No
67. Person	Klee->"Klee"	Yes
68. Person	Kandinsky->"Kandinsky"	Yes
69. Person	she->"Sonia Delaunay"	No
70. Person	she->"Sonia Delaunay"	No
71. Person	Delaunay->"Sonia Delaunay"	No
72. City	Odessa->"Odessa"	No
73. City	St Petersburg->"St Petersburg"	No
74. City	Paris->"Paris"	No
75. City	Paris->"Paris"	No
76. City	Paris->"Paris"	No
77. City	Paris->"Paris"	No
78. City	Amsterdam->"Amsterdam"	Yes
79. Organization	Tate->"Tate"	Yes
80. Organization	Tate Modern->"Tate Modern"	Yes
81. Organization	Tate Modern->"Tate Modern"	Yes
82. Organization	Tate->"Tate"	Yes
83. Organization	Tate->"Tate"	Yes
84. Generic	artists have->"artists"	Yes
85. Generic	Delaunay get on->"Sonia Delaunay"	No
86. Generic	who was Sonia Delaunay->"Sonia Delaunay"	Yes
87. Generic	Delaunay had a privileged youth->"Sonia Delaunay"	No
88. Generic	prostitute detached from her boudoir backdrop->"prostitute"	Yes
89. Generic	Her bleached yellow skin->"prostitute"	Yes
90. Generic	she rejected painting->"Sonia Delaunay"	No
91. Generic	She didn't give up art->"Sonia Delaunay"	No
92. Generic	she made for her infant son->"Sonia Delaunay"	Yes
93. Generic	It also saw Delaunay->"Sonia Delaunay"	No
94. Generic	she developed a theory->"Sonia Delaunay"	No

95. Generic	she always played down her own work->"Sonia Delaunay"	No
96. Generic	She claimed her deep affinity for colour, moreover, stemmed from the %0Ûpure colours%0Û of peasant weddings back in Ukraine.->"Sonia Delaunay"	No
97. Generic	She embraced fashion->"Sonia Delaunay"	No
98. Generic	she designed in patchwork colours->"Sonia Delaunay"	No
99. Generic	She%0Ûd often wear->"Sonia Delaunay"	No
100. Generic	Robert put it->"Robert Delaunay"	No
101. Generic	Metz & Co seized on her fashion designs->"Metz & Co"	Yes
102. Generic	Delaunay bridged->"Sonia Delaunay"	No
103. Generic	her move into design->"Sonia Delaunay"	Yes
104. Generic	bankrolling her and Robert->"Sonia Delaunay, Robert Delaunay"	Yes
105. Generic	she needed an alternative means of funding->"Sonia Delaunay"	No
106. Generic	She didn%0Ût completely give up painting->"Sonia Delaunay"	Yes
107. Generic	Robert died of cancer->"Robert Delaunay"	No
108. Generic	Sonia returned to painting->"Sonia Delaunay"	Yes
109. Generic	Her palette grew->"Sonia Delaunay"	Yes
110. Generic	she worked->"Sonia Delaunay"	No
111. Generic	the times Delaunay lived through->"Sonia Delaunay"	No
112. Generic	She spent the Second World War->"Sonia Delaunay"	No
113. Generic	she%0Ûd shown->"Sonia Delaunay"	Yes
114. Generic	Delaunay was celebrating->"Sonia Delaunay"	Yes
115. Generic	she was a perpetual outsider->"Sonia Delaunay"	No
116. Generic	she decorated in the late Sixties->"Sonia Delaunay"	No
117. Person	Diego VelÃ¡zquez->"Diego VelÃ¡zquez"	No
118. Person	his->"Diego VelÃ¡zquez"	No
119. Person	His->"Diego VelÃ¡zquez"	No
120. Person	him->"Diego VelÃ¡zquez"	No
121. Person	Manet->"Manet"	Yes
122. Person	Picasso->"Picasso"	Yes
123. Person	his->"Diego VelÃ¡zquez"	No
124. Person	his->"Diego VelÃ¡zquez"	No
125. Person	His->"Diego VelÃ¡zquez"	No

126.	Person	King Philip IV->"Philip IV"	No
127.	Person	artist->"Diego Velázquez"	Yes
128.	Person	his->"Diego Velázquez"	No
129.	Person	Velázquez->"Diego Velázquez"	No
130.	Person	him->"Diego Velázquez"	No
131.	Person	his->"Diego Velázquez"	No
132.	Person	His->"Diego Velázquez"	No
133.	Person	his->"Diego Velázquez"	No
134.	Person	King Philip IV->"Philip IV"	No
135.	Person	his->"Diego Velázquez"	No
136.	Person	he->"Diego Velázquez"	No
137.	Person	His->"Diego Velázquez"	No
138.	Person	his->"Diego Velázquez"	No
139.	Person	him->"Diego Velázquez"	No
140.	Person	his->"Diego Velázquez"	No
141.	Person	his->"Diego Velázquez"	No
142.	Person	Velázquez->"Diego Velázquez"	No
143.	Person	drunken boy->"boy"	Yes
144.	Person	the viewer->"viewer"	Yes
145.	Person	his->"boy"	Yes
146.	Person	him->"boy"	Yes
147.	Person	his->"boy"	Yes
148.	Person	Velázquez->"Diego Velázquez"	No
149.	Person	his->"Diego Velázquez"	No
150.	Person	his->"Diego Velázquez"	No
151.	Person	the King->"Philip IV"	Yes
152.	Person	him->"Diego Velázquez"	No
153.	Person	he->"Diego Velázquez"	No
154.	Person	his->"Diego Velázquez"	No
155.	Person	his->"Diego Velázquez"	No
156.	Person	Pope Innocent X->"Pope Innocent X"	Yes
157.	Person	he->"Diego Velázquez"	No

158.	Person	his->"Pope Innocent X"	Yes
159.	Person	Velázquez->"Diego Velázquez"	No
160.	Person	the viewer->"the viewer"	Yes
161.	Person	his->"Diego Velázquez"	No
162.	Person	her->"Venus"	Yes
163.	Person	her->"Venus"	Yes
164.	Generic	Diego Velázquez died->"Diego Velázquez"	No
165.	Generic	His complex, enigmatic portraits made him->"Diego Velázquez"	No
166.	Generic	Manet and Picasso both painted->"Manet, Picasso"	Yes
167.	Generic	It presents him->"Diego Velázquez"	No
168.	Generic	he quickly discovered a talent for naturalism->"Diego Velázquez"	No
169.	Generic	Velázquez toned his style->"Diego Velázquez"	No
170.	Generic	the King's confidence in him grew->"Philip IV"	Yes
171.	Generic	he honed his critical eye->"Diego Velázquez"	No

Problem 4: Calais labelled table

1. uri	Calais_label	True Positive
2. Person	Charles->"Charles"	Yes
3. Person	Nancy Cunard->"Nancy Cunard"	Yes
4. Person	Marlene Dumas->"Marlene Dumas"	Yes
5. Person	Robert Delaunay->"Robert Delaunay"	Yes
6. Person	him->"Robert Delaunay"	Yes
7. Person	Robert->"Robert Delaunay"	Yes
8. Person	his->"Robert Delaunay"	Yes
9. Person	Robert->"Robert Delaunay"	Yes
10. Person	Robert->"Robert Delaunay"	Yes
11. Person	Robert->"Robert Delaunay"	Yes
12. Person	Robert->"Robert Delaunay"	Yes
13. Person	his->"Robert Delaunay"	No
14. Person	Gloria Swanson->"Gloria Swanson"	Yes
15. Person	Sonia Delaunay->"Sonia Delaunay"	Yes
16. Person	Delaunay->"Sonia Delaunay"	Yes

17. Person	Sonia Delaunay->"Sonia Delaunay"	Yes
18. Person	Delaunay->"Sonia Delaunay"	Yes
19. Person	her->"Sonia Delaunay"	Yes
20. Person	her->"Sonia Delaunay"	Yes
21. Person	Her->"Sonia Delaunay"	No
22. Person	Sonia->"Sonia Delaunay"	Yes
23. Person	she->"Sonia Delaunay"	Yes
24. Person	She->"Sonia Delaunay"	Yes
25. Person	she->"Sonia Delaunay"	Yes
26. Person	her->"Sonia Delaunay"	Yes
27. Person	Delaunay->"Sonia Delaunay"	Yes
28. Person	her->"Sonia Delaunay"	Yes
29. Person	her->"Sonia Delaunay"	Yes
30. Person	she->"Sonia Delaunay"	Yes
31. Person	she->"Sonia Delaunay"	Yes
32. Person	her->"Sonia Delaunay"	Yes
33. Person	she->"Sonia Delaunay"	Yes
34. Person	Delaunay->"Sonia Delaunay"	Yes
35. Person	her->"Sonia Delaunay"	Yes
36. Person	She->"Sonia Delaunay"	Yes
37. Person	her->"Sonia Delaunay"	Yes
38. Person	Delaunay->"Sonia Delaunay"	Yes
39. Person	She->"Sonia Delaunay"	Yes
40. Person	she->"Sonia Delaunay"	Yes
41. Person	She->"Sonia Delaunay"	Yes
42. Person	her->"Sonia Delaunay"	Yes
43. Person	Delaunay->"Sonia Delaunay"	Yes
44. Person	her->"Sonia Delaunay"	Yes
45. Person	Sonia->"Sonia Delaunay"	Yes
46. Person	her->"Sonia Delaunay"	Yes
47. Person	she->"Sonia Delaunay"	Yes
48. Person	She->"Sonia Delaunay"	Yes

49. Person	Sonia->"Sonia Delaunay"	Yes
50. Person	Her->"Sonia Delaunay"	Yes
51. Person	her->"Sonia Delaunay"	Yes
52. Person	she->"Sonia Delaunay"	Yes
53. Person	Delaunay->"Sonia Delaunay"	Yes
54. Person	She->"Sonia Delaunay"	Yes
55. Person	her->"Sonia Delaunay"	Yes
56. Person	she->"Sonia Delaunay"	Yes
57. Person	Delaunay->"Sonia Delaunay"	Yes
58. Person	her->"Sonia Delaunay"	No
59. Person	she->"Sonia Delaunay"	Yes
60. Person	she->"Sonia Delaunay"	Yes
61. Person	Delaunay->"Sonia Delaunay"	Yes
62. City	Odessa->"Odessa"	Yes
63. City	St Petersburg->"St Petersburg"	Yes
64. City	Paris->"Paris"	Yes
65. City	Paris->"Paris"	Yes
66. City	Paris->"Paris"	Yes
67. City	Paris->"Paris"	Yes
68. Generic	the times Delaunay lived through->"Sonia Delaunay"	Yes
69. Generic	Delaunay bridged->"Sonia Delaunay"	Yes
70. Generic	She%Ů³d often wear->"Sonia Delaunay"	Yes
71. Generic	She spent the Second World War->"Sonia Delaunay"	Yes
72. Generic	She embraced fashion->"Sonia Delaunay"	Yes
73. Generic	Delaunay get on->"Sonia Delaunay"	Yes
74. Generic	she was a perpetual outsider->"Sonia Delaunay"	Yes
75. Generic	She claimed her deep affinity for colour, moreover, stemmed from the %Ůïpure colours%Ůï of peasant weddings back in Ukraine.->"Sonia Delaunay"	Yes
76. Generic	Robert died of cancer->"Robert Delaunay"	Yes
77. Generic	Amsterdam%Ů³s Metz & Co seized on her fashion designs->"Amsterdam%Ů³s Metz & Co"	No
78. Generic	she designed in patchwork colours->"Sonia Delaunay"	Yes
79. Generic	she always played down her own work->"Sonia Delaunay"	Yes

80. Generic	she developed a theory->"Sonia Delaunay"	Yes
81. Generic	Her bleached yellow skin->"Sonia Delaunay"	No
82. Generic	She didn't give up art->"Sonia Delaunay"	Yes
83. Generic	she decorated in the late Sixties->"Sonia Delaunay"	Yes
84. Generic	she worked->"Sonia Delaunay"	Yes
85. Generic	she rejected painting->"Sonia Delaunay"	Yes
86. Generic	she needed an alternative means of funding->"Sonia Delaunay"	Yes
87. Generic	Robert put it->"Robert Delaunay"	Yes
88. Generic	It also saw Delaunay->"Sonia Delaunay"	Yes
89. Generic	Delaunay had a privileged youth->"Sonia Delaunay"	Yes
90. Person	King Philip IV->"Philip IV"	Yes
91. Person	King Philip IV->"Philip IV"	Yes
92. Person	Diego Velázquez->"Diego Velázquez"	Yes
93. Person	his->"Diego Velázquez"	Yes
94. Person	His->"Diego Velázquez"	Yes
95. Person	him->"Diego Velázquez"	Yes
96. Person	his->"Diego Velázquez"	Yes
97. Person	his->"Diego Velázquez"	Yes
98. Person	His->"Diego Velázquez"	Yes
99. Person	his->"Diego Velázquez"	Yes
100. Person	Velázquez->"Diego Velázquez"	Yes
101. Person	him->"Diego Velázquez"	Yes
102. Person	his->"Diego Velázquez"	Yes
103. Person	His->"Diego Velázquez"	Yes
104. Person	his->"Diego Velázquez"	Yes
105. Person	his->"Diego Velázquez"	Yes
106. Person	he->"Diego Velázquez"	Yes
107. Person	His->"Diego Velázquez"	Yes
108. Person	his->"Diego Velázquez"	Yes
109. Person	him->"Diego Velázquez"	Yes
110. Person	his->"Diego Velázquez"	Yes
111. Person	his->"Diego Velázquez"	Yes

112.	Person	Velázquez->"Diego Velázquez"	Yes
113.	Person	his->"Diego Velázquez"	No
114.	Person	him->"Diego Velázquez"	No
115.	Person	his->"Diego Velázquez"	No
116.	Person	Velázquez->"Diego Velázquez"	Yes
117.	Person	his->"Diego Velázquez"	Yes
118.	Person	his->"Diego Velázquez"	Yes
119.	Person	the King->"Diego Velázquez"	No
120.	Person	him->"Diego Velázquez"	Yes
121.	Person	he->"Diego Velázquez"	Yes
122.	Person	his->"Diego Velázquez"	Yes
123.	Person	his->"Diego Velázquez"	Yes
124.	Person	he->"Diego Velázquez"	Yes
125.	Person	his->"Diego Velázquez"	No
126.	Person	Velázquez->"Diego Velázquez"	Yes
127.	Person	his->"Diego Velázquez"	Yes
128.	Person	her->"Diego Velázquez"	No
129.	Person	her->"Diego Velázquez"	No
130.	Generic	It presents him->"Diego Velázquez"	Yes
131.	Generic	Diego Velázquez died->"Diego Velázquez"	Yes
132.	Generic	His complex, enigmatic portraits made him->"Diego Velázquez"	Yes
133.	Generic	Velázquez toned his style->"Diego Velázquez"	Yes
134.	Generic	him grew->"Diego Velázquez"	No
135.	Generic	he honed his critical eye->"Diego Velázquez"	Yes
136.	Generic	he quickly discovered a talent for naturalism->"Diego Velázquez"	Yes

Problem 5: F-Score

Solution:

Precision: $122/135 = 0.9037 = 90.37\%$

Recall : $122/170 = 0.7176 = 71.76\%$

F-Score : $0.8 = 80\%$

Explanation:

The algorithm used in opencalais does a good job of extracting names when the full names are given. It then proceeds to associate all pronouns to such found names. Similarly, it also matches all cities well because it is easy to identify a city by looking up the word in a dictionary of cities. The algo finds all obvious generic relations of the simple form, which have subject verb object or subject verb. It wrongly associates pronouns in several cases to an identified person, when the pronoun is actually associated to a general person like “his->the boy”, “her->the prostitute”. Due to this it also misidentifies generic relations where the sentence contains a pronoun but is associated to a general subject/object. In such cases, it associates the relation to an already identified person when the relation may not refer to the person at all. Example: In “Her bleached yellow skin” the relation and “Her” is associated to a prostitute who is portrayed in a painting but opencalais associates it “Sonia Delauney”, the painter. It also fails in every case where the sentence is of the form subject+verb+preposition+object. It also fails where the subject/object is several people like in the case of “bankrolling her and Robert” where both “her and Robert” are the object. Another major flaw I discovered was it does not have a sense of gender. It associates “Diego Vellázquez” to both his and her when its algorithm should prevent mapping diego to her when it has already been mapped to his.

Although the algo has good precision it has average recall because it has one major flaw among several. Its biggest flaw is it fails to identify people where only the first name or only the last name is provided or the person is an authority like Pope Innocent X because it identifies a person only if its full name is provided. It chooses to ignore such names. It also fails to identify the organization “Tate Modern” and cities that have an apostrophe like “Amsterdam’s”.