#### **Deidentification Class Python File Similarity Check**

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Methods
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Levenshtein
Tensorflow Virtualization Similarity Score
STS Benchmark
Conlcusion

# **Deidentification Class Python File Similarity Check**

## **Abstract**

This lab is for checking similarity between two python files which were created by BMI500 students in the Deidentification Assignment by using Levenshtein, Tensorflow, and STS Benchmark.

## **Methods**

- Before doing all methods, all python files are preprocessed by neglecting stat.py because this file is commonly used by all students.
- Levenshtein
  - Jaro
  - Distance
  - Ration
- Tensorflow
- STS Benchmark

# Results

#### Levenshtein

```
Parisa deid.py : Shaojun deid.py

The similarity results tested by Levenshtein are following:

jaro: 1.0

distance: 0

ratio: 1.0

Parisa deid.py : Shaojun deid-Shaojun Yu.py

The similarity results tested by Levenshtein are following:
```

```
11 | jaro: 0.6622267258095486
12
    distance: 6217
13
    ratio: 0.49563492063492065
14
15
   Parisa deid.py : FeverDreams deid.py
16
17
    The similarity results tested by Levenshtein are following:
    jaro: 0.6684480457968126
    distance: 5400
19
   ratio: 0.6632829908393166
20
21
22
   Parisa deid.py : FeverDreams deid_phone.py
23
   The similarity results tested by Levenshtein are following:
24
    jaro: 0.822566622827735
25
    distance: 261
26
   ratio: 0.9741347227391143
27
28
29
   Parisa deid.py : Itoshikihiro deid-Jie.py
30
31
    The similarity results tested by Levenshtein are following:
    jaro: 1.0
32
33
    distance: 0
   ratio: 1.0
35
   Parisa deid.py : Itoshikihiro deid.py
36
37
    The similarity results tested by Levenshtein are following:
38
39
    jaro: 1.0
    distance: 0
40
   ratio: 1.0
41
42
43
    Parisa deid.py : Itoshikihiro deid-date-Jie.py
44
45
    The similarity results tested by Levenshtein are following:
    jaro: 0.6557711323609124
46
    distance: 2317
47
   ratio: 0.6839400428265524
48
49
50
    Parisa deid.py : Itoshikihiro deid-name-Jie.py
51
    The similarity results tested by Levenshtein are following:
52
53
    jaro: 0.7251300664288114
54
    distance: 2450
    ratio: 0.6850410722006053
55
56
57
    Parisa deid.py : Nasim de-id-location.py
58
59
    The similarity results tested by Levenshtein are following:
    jaro: 0.7288723120536037
60
61
   distance: 3611
    ratio: 0.6504225995583645
62
63
```

```
Parisa deid.py : Nasim deid.py
64
 65
 66
     The similarity results tested by Levenshtein are following:
     jaro: 1.0
 67
 68
    distance: 0
     ratio: 1.0
 69
 70
 71
     Parisa deid.py: Nasim de-id-date.py
 72
 73
     The similarity results tested by Levenshtein are following:
     jaro: 0.7532462007044755
 74
    distance: 2080
 75
     ratio: 0.8198847262247838
 77
 78
    Parisa deid.py : Nasim de-id-age.py
 79
 80
     The similarity results tested by Levenshtein are following:
     jaro: 0.779738456966431
 81
     distance: 2053
     ratio: 0.7371695178849145
 83
 84
     Parisa deid.py : Andre deid-Andre_Holder.py
 85
 86
     The similarity results tested by Levenshtein are following:
 87
     jaro: 0.7873682872182086
 88
     distance: 1287
 89
 90
    ratio: 0.8806998939554613
 91
     Parisa deid.py: Mahmoud deid_ssn_mahmoud.py
 92
 93
 94
     The similarity results tested by Levenshtein are following:
 95
     jaro: 0.8231258743340041
 96
     distance: 211
     ratio: 0.9756950837783097
 97
     Parisa deid.py: Mahmoud deid_date_mahmoud.py
99
100
101
     The similarity results tested by Levenshtein are following:
102
     jaro: 0.7991964384755024
     distance: 702
103
     ratio: 0.9272179918540818
104
105
106
     Parisa deid.py : Mahmoud deid_age_mahmoud.py
107
     The similarity results tested by Levenshtein are following:
108
109
     jaro: 0.8142641234970611
110
     distance: 427
    ratio: 0.950575859254557
111
112
113
     Parisa deid.py : ChenLin deid-ChenLin.py
114
115
     The similarity results tested by Levenshtein are following:
116
     jaro: 0.5947612031278235
```

```
117
     distance: 14970
118
     ratio: 0.41918212151780865
119
120
     Parisa deid.py : ChenLin deid.py
121
     The similarity results tested by Levenshtein are following:
122
123
    jaro: 1.0
124
     distance: 0
     ratio: 1.0
125
126
127
     Parisa deid_Date_Parisa.py : Shaojun deid.py
128
129
     The similarity results tested by Levenshtein are following:
     jaro: 0.7322073315167268
130
     distance: 2398
131
     ratio: 0.8149387693009812
132
133
134
     Parisa deid_Date_Parisa.py : Shaojun deid-Shaojun Yu.py
135
136
     The similarity results tested by Levenshtein are following:
137
     jaro: 0.7237631068216985
138 distance: 6303
139
     ratio: 0.49515287099179717
140
141
     Parisa deid_Date_Parisa.py : FeverDreams deid.py
142
    The similarity results tested by Levenshtein are following:
143
     jaro: 0.7367499790096219
144
     distance: 5355
145
     ratio: 0.6577508257079431
146
147
148
     Parisa deid_Date_Parisa.py : FeverDreams deid_phone.py
149
     The similarity results tested by Levenshtein are following:
150
     jaro: 0.7272623539456684
     distance: 2638
152
    ratio: 0.7939667713038818
153
154
155
     Parisa deid_Date_Parisa.py : Itoshikihiro deid-Jie.py
156
     The similarity results tested by Levenshtein are following:
157
158
     jaro: 0.7322073315167268
     distance: 2398
159
160
     ratio: 0.8149387693009812
161
162
     Parisa deid_Date_Parisa.py : Itoshikihiro deid.py
163
164
     The similarity results tested by Levenshtein are following:
     jaro: 0.7322073315167268
165
     distance: 2398
166
167
     ratio: 0.8149387693009812
168
169
     Parisa deid_Date_Parisa.py : Itoshikihiro deid-date-Jie.py
```

```
170
171
     The similarity results tested by Levenshtein are following:
172
     jaro: 0.5837053487892885
     distance: 4556
173
174
     ratio: 0.5521324980691668
175
176
     Parisa deid_Date_Parisa.py : Itoshikihiro deid-name-Jie.py
177
     The similarity results tested by Levenshtein are following:
178
     jaro: 0.6426224800866115
179
     distance: 4406
180
    ratio: 0.5817552961521834
181
182
183
     Parisa deid_Date_Parisa.py : Nasim de-id-location.py
184
185
     The similarity results tested by Levenshtein are following:
186
     jaro: 0.7612652290570937
187
     distance: 3969
188
     ratio: 0.6266994691182183
189
190
     Parisa deid_Date_Parisa.py : Nasim deid.py
191
192
     The similarity results tested by Levenshtein are following:
193
     jaro: 0.7322073315167268
     distance: 2398
194
     ratio: 0.8149387693009812
195
196
197
     Parisa deid_Date_Parisa.py : Nasim de-id-date.py
198
199
     The similarity results tested by Levenshtein are following:
200
     jaro: 0.7908737317285306
     distance: 2574
201
202
     ratio: 0.7787909490037149
203
204
     Parisa deid_Date_Parisa.py : Nasim de-id-age.py
205
     The similarity results tested by Levenshtein are following:
206
207
     jaro: 0.7140789999533025
208
     distance: 3698
209
     ratio: 0.6609785563273936
210
211
     Parisa deid_Date_Parisa.py : Andre deid-Andre_Holder.py
212
213
     The similarity results tested by Levenshtein are following:
     jaro: 0.7089230082292618
214
215
     distance: 2789
216
     ratio: 0.7516325482427177
217
218
     Parisa deid_Date_Parisa.py : Mahmoud deid_ssn_mahmoud.py
219
220
     The similarity results tested by Levenshtein are following:
     jaro: 0.7342713019060986
221
222
     distance: 2394
```

```
ratio: 0.8124478178368122
223
224
225
     Parisa deid_Date_Parisa.py : Mahmoud deid_date_mahmoud.py
226
227
     The similarity results tested by Levenshtein are following:
     jaro: 0.7271487077544735
228
229
    distance: 2429
230
     ratio: 0.7919453222606012
231
232
     Parisa deid_Date_Parisa.py : Mahmoud deid_age_mahmoud.py
233
     The similarity results tested by Levenshtein are following:
234
235
     jaro: 0.7362675054664228
     distance: 2394
236
     ratio: 0.8026986506746626
237
238
239
     Parisa deid_Date_Parisa.py : ChenLin deid-ChenLin.py
240
241
     The similarity results tested by Levenshtein are following:
242
     jaro: 0.623545294976766
     distance: 14776
243
244
    ratio: 0.43521914052764626
245
246
     Parisa deid_Date_Parisa.py : ChenLin deid.py
247
     The similarity results tested by Levenshtein are following:
248
     jaro: 0.7322073315167268
249
250
     distance: 2398
    ratio: 0.8149387693009812
251
252
253
     Parisa deid_Age_Parisa.py : Shaojun deid.py
254
255
     The similarity results tested by Levenshtein are following:
     jaro: 0.7243258176235227
256
257
     distance: 2638
     ratio: 0.796168811733014
258
259
260
     Parisa deid_Age_Parisa.py : Shaojun deid-Shaojun Yu.py
261
     The similarity results tested by Levenshtein are following:
262
263
     jaro: 0.7420013817826021
     distance: 6248
264
265
     ratio: 0.501756373937677
266
267
     Parisa deid_Age_Parisa.py : FeverDreams deid.py
268
269
     The similarity results tested by Levenshtein are following:
270
     jaro: 0.7389892685200682
     distance: 5165
271
     ratio: 0.6595311998287487
272
273
274
     Parisa deid_Age_Parisa.py : FeverDreams deid_phone.py
275
```

```
The similarity results tested by Levenshtein are following:
276
277
     jaro: 0.7195949762116066
278
     distance: 2877
     ratio: 0.775116734447959
279
280
     Parisa deid_Age_Parisa.py : Itoshikihiro deid-Jie.py
281
282
283
     The similarity results tested by Levenshtein are following:
     jaro: 0.7243258176235227
284
     distance: 2638
285
     ratio: 0.796168811733014
286
287
288
     Parisa deid_Age_Parisa.py : Itoshikihiro deid.py
289
290
     The similarity results tested by Levenshtein are following:
     jaro: 0.7243258176235227
291
292
    distance: 2638
293
     ratio: 0.796168811733014
294
295
     Parisa deid_Age_Parisa.py : Itoshikihiro deid-date-Jie.py
296
297
     The similarity results tested by Levenshtein are following:
     jaro: 0.5723869285370724
298
299
     distance: 4791
     ratio: 0.535804549283909
300
301
     Parisa deid_Age_Parisa.py : Itoshikihiro deid-name-Jie.py
302
303
     The similarity results tested by Levenshtein are following:
304
305
     jaro: 0.6343294942401324
306
    distance: 4631
     ratio: 0.5693430656934306
307
308
     Parisa deid_Age_Parisa.py : Nasim de-id-location.py
309
310
     The similarity results tested by Levenshtein are following:
311
     jaro: 0.7590299153664958
312
313
     distance: 3979
    ratio: 0.6337227861840005
314
315
316
     Parisa deid_Age_Parisa.py : Nasim deid.py
317
318
     The similarity results tested by Levenshtein are following:
319
     jaro: 0.7243258176235227
     distance: 2638
320
321
     ratio: 0.796168811733014
322
323
     Parisa deid_Age_Parisa.py : Nasim de-id-date.py
324
325
     The similarity results tested by Levenshtein are following:
326
    jaro: 0.7832572893510522
     distance: 2708
327
328
     ratio: 0.7639462122220743
```

```
329
330
     Parisa deid_Age_Parisa.py : Nasim de-id-age.py
331
     The similarity results tested by Levenshtein are following:
332
333
     jaro: 0.7116282243114193
334
     distance: 3868
335
    ratio: 0.657752024366689
336
     Parisa deid_Age_Parisa.py: Andre deid-Andre_Holder.py
337
338
339
     The similarity results tested by Levenshtein are following:
340
     jaro: 0.7016318793130444
     distance: 3015
    ratio: 0.7350859453993933
342
343
344
     Parisa deid_Age_Parisa.py : Mahmoud deid_ssn_mahmoud.py
345
     The similarity results tested by Levenshtein are following:
347
     jaro: 0.7272199841071779
     distance: 2629
348
     ratio: 0.7955495818399044
349
350
351
     Parisa deid_Age_Parisa.py : Mahmoud deid_date_mahmoud.py
352
353
     The similarity results tested by Levenshtein are following:
     jaro: 0.7194463696118539
354
    distance: 2639
355
     ratio: 0.7779224537037037
356
357
358
     Parisa deid_Age_Parisa.py : Mahmoud deid_age_mahmoud.py
359
360
     The similarity results tested by Levenshtein are following:
361
     jaro: 0.7291634696614113
     distance: 2600
362
363
     ratio: 0.7920631408128642
364
365
     Parisa deid_Age_Parisa.py : ChenLin deid-ChenLin.py
366
367
     The similarity results tested by Levenshtein are following:
     jaro: 0.6245976809757386
369
     distance: 14610
370
     ratio: 0.44601469756924816
371
372
     Parisa deid_Age_Parisa.py : ChenLin deid.py
373
374
     The similarity results tested by Levenshtein are following:
375
     jaro: 0.7243258176235227
376
     distance: 2638
     ratio: 0.796168811733014
377
378
379
     Parisa deid_Location_Parisa.py : Shaojun deid.py
380
381
     The similarity results tested by Levenshtein are following:
```

```
382 iaro: 0.6437365646226846
383
     distance: 5972
384
     ratio: 0.6351456893962151
385
386
    Parisa deid_Location_Parisa.py : Shaojun deid-Shaojun Yu.py
387
388
     The similarity results tested by Levenshtein are following:
389
     jaro: 0.7234994300222922
     distance: 7455
390
     ratio: 0.4926663800105107
391
392
393
     Parisa deid_Location_Parisa.py : FeverDreams deid.py
394
395
     The similarity results tested by Levenshtein are following:
396
     jaro: 0.7655451703892462
     distance: 6373
397
398
    ratio: 0.6265762279783311
399
400
     Parisa deid_Location_Parisa.py : FeverDreams deid_phone.py
401
     The similarity results tested by Levenshtein are following:
402
     jaro: 0.6401688216903018
403
404
     distance: 6187
405
     ratio: 0.6181532701250075
406
407
     Parisa deid_Location_Parisa.py : Itoshikihiro deid-Jie.py
408
409
     The similarity results tested by Levenshtein are following:
     jaro: 0.6437365646226846
410
411
     distance: 5972
     ratio: 0.6351456893962151
412
413
414
     Parisa deid_Location_Parisa.py : Itoshikihiro deid.py
415
416
     The similarity results tested by Levenshtein are following:
     jaro: 0.6437365646226846
417
    distance: 5972
418
419
     ratio: 0.6351456893962151
420
     Parisa deid_Location_Parisa.py : Itoshikihiro deid-date-Jie.py
421
422
423
     The similarity results tested by Levenshtein are following:
424
     jaro: 0.5295364901509254
425
     distance: 8121
     ratio: 0.41594614216883374
426
427
428
     Parisa deid_Location_Parisa.py : Itoshikihiro deid-name-Jie.py
429
     The similarity results tested by Levenshtein are following:
430
431
     jaro: 0.5901775270985143
432
    distance: 7886
     ratio: 0.4509061939852619
433
434
```

```
Parisa deid_Location_Parisa.py : Nasim de-id-location.py
435
436
437
     The similarity results tested by Levenshtein are following:
     jaro: 0.6984485606975257
438
439
     distance: 6280
     ratio: 0.579075168918919
440
441
442
     Parisa deid_Location_Parisa.py : Nasim deid.py
443
     The similarity results tested by Levenshtein are following:
444
     jaro: 0.6437365646226846
445
    distance: 5972
446
     ratio: 0.6351456893962151
448
449
     Parisa deid_Location_Parisa.py : Nasim de-id-date.py
450
451
     The similarity results tested by Levenshtein are following:
452
     jaro: 0.6950032392233699
453
     distance: 5486
     ratio: 0.6526798885428619
454
455
     Parisa deid_Location_Parisa.py : Nasim de-id-age.py
456
457
458
     The similarity results tested by Levenshtein are following:
459
     jaro: 0.6430648750237822
460
     distance: 6834
    ratio: 0.5479632063074902
461
462
     Parisa deid_Location_Parisa.py : Andre deid-Andre_Holder.py
463
464
465
     The similarity results tested by Levenshtein are following:
     jaro: 0.6186117818786692
466
467
     distance: 6213
     ratio: 0.5934489402697495
468
469
470
     Parisa deid_Location_Parisa.py : Mahmoud deid_ssn_mahmoud.py
471
472
     The similarity results tested by Levenshtein are following:
473
     jaro: 0.647447643781852
     distance: 5960
474
475
     ratio: 0.6351586397169076
476
477
     Parisa deid_Location_Parisa.py : Mahmoud deid_date_mahmoud.py
478
     The similarity results tested by Levenshtein are following:
479
480
     jaro: 0.6349372362754272
481
     distance: 5903
     ratio: 0.625431160479392
482
483
484
     Parisa deid_Location_Parisa.py : Mahmoud deid_age_mahmoud.py
485
486
     The similarity results tested by Levenshtein are following:
487
     jaro: 0.6470411874713099
```

```
488
     distance: 5921
489
     ratio: 0.6335669319396603
490
     Parisa deid_Location_Parisa.py : ChenLin deid-ChenLin.py
491
492
     The similarity results tested by Levenshtein are following:
493
494
     jaro: 0.6639069664685247
     distance: 13990
495
     ratio: 0.46123159727718854
496
497
498
     Parisa deid_Location_Parisa.py : ChenLin deid.py
499
500
     The similarity results tested by Levenshtein are following:
     jaro: 0.6437365646226846
501
     distance: 5972
502
     ratio: 0.6351456893962151
503
504
505
     Shaojun deid.py : FeverDreams deid.py
506
507
     The similarity results tested by Levenshtein are following:
508
     jaro: 0.6684480457968126
509
    distance: 5400
510
     ratio: 0.6632829908393166
511
512
     Shaojun deid.py : FeverDreams deid_phone.py
513
514
     The similarity results tested by Levenshtein are following:
     jaro: 0.822566622827735
515
     distance: 261
516
     ratio: 0.9741347227391143
517
518
519
     Shaojun deid.py : Itoshikihiro deid-Jie.py
520
     The similarity results tested by Levenshtein are following:
521
     jaro: 1.0
     distance: 0
523
     ratio: 1.0
524
525
     Shaojun deid.py : Itoshikihiro deid.py
526
527
528
     The similarity results tested by Levenshtein are following:
529
     jaro: 1.0
530
     distance: 0
531
     ratio: 1.0
532
533
     Shaojun deid.py: Itoshikihiro deid-date-Jie.py
534
535
     The similarity results tested by Levenshtein are following:
     jaro: 0.6557711323609124
536
537
     distance: 2317
538
     ratio: 0.6839400428265524
539
540
     Shaojun deid.py : Itoshikihiro deid-name-Jie.py
```

```
541
542
     The similarity results tested by Levenshtein are following:
543
     jaro: 0.7251300664288114
     distance: 2450
544
545
    ratio: 0.6850410722006053
546
547
     Shaojun deid.py: Nasim de-id-location.py
548
     The similarity results tested by Levenshtein are following:
549
550
     jaro: 0.7288723120536037
     distance: 3611
551
    ratio: 0.6504225995583645
552
554
    Shaojun deid.py : Nasim deid.py
555
     The similarity results tested by Levenshtein are following:
556
557
     jaro: 1.0
     distance: 0
559
    ratio: 1.0
560
     Shaojun deid.py: Nasim de-id-date.py
561
562
563
     The similarity results tested by Levenshtein are following:
564
     jaro: 0.7532462007044755
     distance: 2080
565
    ratio: 0.8198847262247838
566
567
568
     Shaojun deid.py: Nasim de-id-age.py
569
570
     The similarity results tested by Levenshtein are following:
571
     jaro: 0.779738456966431
     distance: 2053
572
573
     ratio: 0.7371695178849145
574
575
     Shaojun deid.py : Andre deid-Andre_Holder.py
576
577
     The similarity results tested by Levenshtein are following:
578
     jaro: 0.7873682872182086
579
     distance: 1287
     ratio: 0.8806998939554613
580
581
582
     Shaojun deid.py: Mahmoud deid_ssn_mahmoud.py
583
584
     The similarity results tested by Levenshtein are following:
     jaro: 0.8231258743340041
585
586
    distance: 211
587
     ratio: 0.9756950837783097
588
     Shaojun deid.py: Mahmoud deid_date_mahmoud.py
589
590
591
     The similarity results tested by Levenshtein are following:
     jaro: 0.7991964384755024
592
593
     distance: 702
```

```
594
     ratio: 0.9272179918540818
595
596
     Shaojun deid.py: Mahmoud deid_age_mahmoud.py
597
598
     The similarity results tested by Levenshtein are following:
     jaro: 0.8142641234970611
599
600
    distance: 427
601
     ratio: 0.950575859254557
602
603
     Shaojun deid.py : ChenLin deid-ChenLin.py
604
     The similarity results tested by Levenshtein are following:
605
606
     jaro: 0.5947612031278235
     distance: 14970
607
    ratio: 0.41918212151780865
608
609
610
     Shaojun deid.py: ChenLin deid.py
611
612
     The similarity results tested by Levenshtein are following:
     jaro: 1.0
613
     distance: 0
614
615
    ratio: 1.0
616
617
     Shaojun deid-Shaojun Yu.py: FeverDreams deid.py
618
     The similarity results tested by Levenshtein are following:
619
     jaro: 0.7124344572682443
620
621
     distance: 7468
     ratio: 0.4725565013208101
622
623
624
     Shaojun deid-Shaojun Yu.py : FeverDreams deid_phone.py
625
626
     The similarity results tested by Levenshtein are following:
     jaro: 0.6567340587947946
627
628
     distance: 6251
     ratio: 0.4920846082213649
629
630
631
     Shaojun deid-Shaojun Yu.py: Itoshikihiro deid-Jie.py
632
633
     The similarity results tested by Levenshtein are following:
634
     jaro: 0.6622267258095486
     distance: 6217
635
636
     ratio: 0.49563492063492065
637
     Shaojun deid-Shaojun Yu.py: Itoshikihiro deid.py
638
639
640
     The similarity results tested by Levenshtein are following:
641
     jaro: 0.6622267258095486
     distance: 6217
642
     ratio: 0.49563492063492065
643
644
     Shaojun deid-Shaojun Yu.py: Itoshikihiro deid-date-Jie.py
645
646
```

```
The similarity results tested by Levenshtein are following:
648
     jaro: 0.5727770920659783
649
     distance: 6961
     ratio: 0.41611624834874505
650
651
     Shaojun deid-Shaojun Yu.py: Itoshikihiro deid-name-Jie.py
652
653
654
     The similarity results tested by Levenshtein are following:
     jaro: 0.6137336138928172
655
656
     distance: 6695
     ratio: 0.45797015807357067
657
658
659
     Shaojun deid-Shaojun Yu.py: Nasim de-id-location.py
660
661
     The similarity results tested by Levenshtein are following:
     jaro: 0.7306528551812068
662
663
    distance: 6176
     ratio: 0.49520638383374477
665
     Shaojun deid-Shaojun Yu.py: Nasim deid.py
666
667
     The similarity results tested by Levenshtein are following:
668
     jaro: 0.6622267258095486
669
     distance: 6217
670
     ratio: 0.49563492063492065
671
672
     Shaojun deid-Shaojun Yu.py: Nasim de-id-date.py
673
674
     The similarity results tested by Levenshtein are following:
675
     jaro: 0.7248433566644152
677
     distance: 6140
    ratio: 0.5056621766599118
678
679
     Shaojun deid-Shaojun Yu.py: Nasim de-id-age.py
680
681
     The similarity results tested by Levenshtein are following:
682
     jaro: 0.676308203734497
683
684
     distance: 6059
685
     ratio: 0.5121903134652034
687
     Shaojun deid-Shaojun Yu.py : Andre deid-Andre_Holder.py
688
689
     The similarity results tested by Levenshtein are following:
     jaro: 0.660990082325941
690
     distance: 6312
691
692
     ratio: 0.47660556338930904
693
694
     Shaojun deid-Shaojun Yu.py: Mahmoud deid_ssn_mahmoud.py
695
696
     The similarity results tested by Levenshtein are following:
697
     jaro: 0.6646610308045853
     distance: 6233
698
699
     ratio: 0.49471877475574333
```

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700
701
     Shaojun deid-Shaojun Yu.py: Mahmoud deid_date_mahmoud.py
702
     The similarity results tested by Levenshtein are following:
703
704
     jaro: 0.6736615772550122
705
     distance: 6318
706
    ratio: 0.48292682926829267
707
     Shaojun deid-Shaojun Yu.py: Mahmoud deid_age_mahmoud.py
708
709
710
     The similarity results tested by Levenshtein are following:
711
     jaro: 0.6694987258141047
712
     distance: 6264
    ratio: 0.49030235747404166
713
714
     Shaojun deid-Shaojun Yu.py: ChenLin deid-ChenLin.py
715
716
717
     The similarity results tested by Levenshtein are following:
718
     jaro: 0.6073715186342309
719
     distance: 14620
720
     ratio: 0.4179640718562874
721
722
     Shaojun deid-Shaojun Yu.py : ChenLin deid.py
723
724
     The similarity results tested by Levenshtein are following:
     jaro: 0.6622267258095486
725
    distance: 6217
726
     ratio: 0.49563492063492065
727
728
729
     FeverDreams deid.py: Itoshikihiro deid-Jie.py
730
731
     The similarity results tested by Levenshtein are following:
732
     jaro: 0.6684480457968126
     distance: 5400
733
734
     ratio: 0.6632829908393166
735
     FeverDreams deid.py : Itoshikihiro deid.py
736
737
738
     The similarity results tested by Levenshtein are following:
739
     jaro: 0.6684480457968126
740
     distance: 5400
741
     ratio: 0.6632829908393166
742
743
    FeverDreams deid.py: Itoshikihiro deid-date-Jie.py
744
745
     The similarity results tested by Levenshtein are following:
746
     jaro: 0.609015309758357
747
     distance: 7108
748
     ratio: 0.5066157413722548
749
750
     FeverDreams deid.py: Itoshikihiro deid-name-Jie.py
751
752
     The similarity results tested by Levenshtein are following:
```

```
753 jaro: 0.605252252532336
754
     distance: 7667
755
     ratio: 0.44119665157129134
756
757
    FeverDreams deid.py: Nasim de-id-location.py
758
759
     The similarity results tested by Levenshtein are following:
     jaro: 0.7000749155711296
760
     distance: 6385
761
762
     ratio: 0.5432674072067191
763
764
    FeverDreams deid.py: Nasim deid.py
765
     The similarity results tested by Levenshtein are following:
766
767
     jaro: 0.6684480457968126
     distance: 5400
768
769
    ratio: 0.6632829908393166
770
771
    FeverDreams deid.py: Nasim de-id-date.py
772
773
     The similarity results tested by Levenshtein are following:
774
     jaro: 0.7144974163880845
775
     distance: 5406
776
     ratio: 0.6406197372852812
777
778
     FeverDreams deid.py : Nasim de-id-age.py
779
780
     The similarity results tested by Levenshtein are following:
781
     jaro: 0.6466321019112898
782
     distance: 6771
     ratio: 0.5293791915338707
783
784
785
     FeverDreams deid.py: Andre deid-Andre_Holder.py
786
787
     The similarity results tested by Levenshtein are following:
     jaro: 0.6590157499549273
788
789
     distance: 6048
790
     ratio: 0.6147373482389711
791
792
     FeverDreams deid.py: Mahmoud deid_ssn_mahmoud.py
793
794
     The similarity results tested by Levenshtein are following:
795
     jaro: 0.6691917126632388
796
     distance: 5475
     ratio: 0.6543499752842313
797
798
799
     FeverDreams deid.py: Mahmoud deid_date_mahmoud.py
800
     The similarity results tested by Levenshtein are following:
801
802
     jaro: 0.6729055762370497
803
    distance: 5565
     ratio: 0.6462445835339432
804
805
```

```
FeverDreams deid.py : Mahmoud deid_age_mahmoud.py
806
807
808
     The similarity results tested by Levenshtein are following:
     jaro: 0.6728284776142273
809
810
     distance: 5506
     ratio: 0.6462780598201725
811
812
813
     FeverDreams deid.py: ChenLin deid-ChenLin.py
814
     The similarity results tested by Levenshtein are following:
815
     jaro: 0.6602505669234963
816
    distance: 11383
817
     ratio: 0.6153202984306663
819
820
    FeverDreams deid.py : ChenLin deid.py
821
822
     The similarity results tested by Levenshtein are following:
     jaro: 0.6684480457968126
824
     distance: 5400
     ratio: 0.6632829908393166
825
826
827
     FeverDreams deid_phone.py : Itoshikihiro deid-Jie.py
828
829
     The similarity results tested by Levenshtein are following:
     jaro: 0.822566622827735
830
831
    distance: 261
    ratio: 0.9741347227391143
832
833
    FeverDreams deid_phone.py : Itoshikihiro deid.py
834
835
836
     The similarity results tested by Levenshtein are following:
837
     jaro: 0.822566622827735
838
     distance: 261
     ratio: 0.9741347227391143
839
840
     FeverDreams deid_phone.py : Itoshikihiro deid-date-Jie.py
841
842
843
     The similarity results tested by Levenshtein are following:
844
     jaro: 0.6593279276576074
     distance: 2496
846
     ratio: 0.6576615517614005
847
848
     FeverDreams deid_phone.py : Itoshikihiro deid-name-Jie.py
849
     The similarity results tested by Levenshtein are following:
850
851
     jaro: 0.72880103895691
852
     distance: 2485
     ratio: 0.6757582369626882
853
854
855
     FeverDreams deid_phone.py : Nasim de-id-location.py
856
857
     The similarity results tested by Levenshtein are following:
858
     jaro: 0.7244322067261076
```

```
859
     distance: 3781
860
    ratio: 0.6330957308193454
861
     FeverDreams deid_phone.py : Nasim deid.py
862
863
     The similarity results tested by Levenshtein are following:
864
865
     jaro: 0.822566622827735
     distance: 261
     ratio: 0.9741347227391143
867
868
869
     FeverDreams deid_phone.py : Nasim de-id-date.py
870
     The similarity results tested by Levenshtein are following:
     jaro: 0.7477074996913037
872
     distance: 2270
873
     ratio: 0.8025149121392875
874
875
876
     FeverDreams deid_phone.py : Nasim de-id-age.py
877
     The similarity results tested by Levenshtein are following:
878
     jaro: 0.7763666382428639
879
880
    distance: 2247
881
     ratio: 0.7131396957123098
882
     FeverDreams deid_phone.py: Andre deid-Andre_Holder.py
883
884
     The similarity results tested by Levenshtein are following:
885
886
     jaro: 0.7794423204248448
     distance: 1509
     ratio: 0.8577025823686554
888
889
890
     FeverDreams deid_phone.py : Mahmoud deid_ssn_mahmoud.py
891
     The similarity results tested by Levenshtein are following:
892
     jaro: 0.8088390049312494
     distance: 468
894
    ratio: 0.9497030438010393
895
896
897
     FeverDreams deid_phone.py : Mahmoud deid_date_mahmoud.py
898
     The similarity results tested by Levenshtein are following:
899
900
     jaro: 0.7865465859811686
901
     distance: 918
902
     ratio: 0.9057815845824411
903
904
     FeverDreams deid_phone.py : Mahmoud deid_age_mahmoud.py
905
906
     The similarity results tested by Levenshtein are following:
907
     jaro: 0.8010374003352917
908
     distance: 683
909
     ratio: 0.9251439539347409
910
911
     FeverDreams deid_phone.py : ChenLin deid-ChenLin.py
```

```
912
913
     The similarity results tested by Levenshtein are following:
914
     jaro: 0.5867514442377398
     distance: 15168
915
916
    ratio: 0.4089068825910931
917
918
    FeverDreams deid_phone.py : ChenLin deid.py
919
     The similarity results tested by Levenshtein are following:
920
     jaro: 0.822566622827735
921
     distance: 261
922
    ratio: 0.9741347227391143
923
924
925
    Itoshikihiro deid-Jie.py: Nasim de-id-location.py
926
927
     The similarity results tested by Levenshtein are following:
928
     jaro: 0.7288723120536037
     distance: 3611
930
    ratio: 0.6504225995583645
931
932
     Itoshikihiro deid-Jie.py : Nasim deid.py
933
934
     The similarity results tested by Levenshtein are following:
935
     jaro: 1.0
     distance: 0
936
    ratio: 1.0
937
938
939
     Itoshikihiro deid-Jie.py: Nasim de-id-date.py
940
941
     The similarity results tested by Levenshtein are following:
942
     jaro: 0.7532462007044755
    distance: 2080
943
944
     ratio: 0.8198847262247838
946
     Itoshikihiro deid-Jie.py: Nasim de-id-age.py
947
     The similarity results tested by Levenshtein are following:
948
949
     jaro: 0.779738456966431
950
    distance: 2053
     ratio: 0.7371695178849145
952
953
     Itoshikihiro deid-Jie.py : Andre deid-Andre_Holder.py
954
955
     The similarity results tested by Levenshtein are following:
     jaro: 0.7873682872182086
956
957
     distance: 1287
958
    ratio: 0.8806998939554613
959
960
    Itoshikihiro deid-Jie.py : Mahmoud deid_ssn_mahmoud.py
961
962
     The similarity results tested by Levenshtein are following:
963
     jaro: 0.8231258743340041
964
     distance: 211
```

```
ratio: 0.9756950837783097
965
966
967
      Itoshikihiro deid-Jie.py : Mahmoud deid_date_mahmoud.py
968
969
      The similarity results tested by Levenshtein are following:
      jaro: 0.7991964384755024
970
971
     distance: 702
972
      ratio: 0.9272179918540818
973
     Itoshikihiro deid-Jie.py : Mahmoud deid_age_mahmoud.py
974
975
     The similarity results tested by Levenshtein are following:
976
      jaro: 0.8142641234970611
     distance: 427
978
     ratio: 0.950575859254557
979
980
981
     Itoshikihiro deid-Jie.py : ChenLin deid-ChenLin.py
 982
 983
     The similarity results tested by Levenshtein are following:
984
      jaro: 0.5947612031278235
985
     distance: 14970
986
     ratio: 0.41918212151780865
 987
988
     Itoshikihiro deid-Jie.py : ChenLin deid.py
989
      The similarity results tested by Levenshtein are following:
990
991
      jaro: 1.0
992
      distance: 0
993
     ratio: 1.0
994
995
      Itoshikihiro deid.py : Nasim de-id-location.py
996
997
      The similarity results tested by Levenshtein are following:
      jaro: 0.7288723120536037
998
999
      distance: 3611
      ratio: 0.6504225995583645
1000
1001
1002
      Itoshikihiro deid.py : Nasim deid.py
1003
1004
      The similarity results tested by Levenshtein are following:
1005
      jaro: 1.0
1006
      distance: 0
1007
      ratio: 1.0
1008
1009
      Itoshikihiro deid.py: Nasim de-id-date.py
1010
1011
      The similarity results tested by Levenshtein are following:
1012
      jaro: 0.7532462007044755
      distance: 2080
1013
      ratio: 0.8198847262247838
1014
1015
1016
      Itoshikihiro deid.py : Nasim de-id-age.py
1017
```

```
1018 The similarity results tested by Levenshtein are following:
1019
     jaro: 0.779738456966431
1020
     distance: 2053
     ratio: 0.7371695178849145
1021
1022
      Itoshikihiro deid.py : Andre deid-Andre_Holder.py
1023
1024
1025
      The similarity results tested by Levenshtein are following:
      jaro: 0.7873682872182086
1026
1027
      distance: 1287
      ratio: 0.8806998939554613
1028
1029
1030
      Itoshikihiro deid.py : Mahmoud deid_ssn_mahmoud.py
1031
1032
      The similarity results tested by Levenshtein are following:
      jaro: 0.8231258743340041
1033
1034
     distance: 211
1035
      ratio: 0.9756950837783097
1036
1037
     Itoshikihiro deid.py : Mahmoud deid_date_mahmoud.py
1038
1039
     The similarity results tested by Levenshtein are following:
1040
      jaro: 0.7991964384755024
1041
     distance: 702
      ratio: 0.9272179918540818
1042
1043
1044
     Itoshikihiro deid.py : Mahmoud deid_age_mahmoud.py
1045
     The similarity results tested by Levenshtein are following:
1046
1047
      jaro: 0.8142641234970611
1048
     distance: 427
     ratio: 0.950575859254557
1049
1050
     Itoshikihiro deid.py : ChenLin deid-ChenLin.py
1051
1052
      The similarity results tested by Levenshtein are following:
1053
1054
      jaro: 0.5947612031278235
1055
     distance: 14970
1056
     ratio: 0.41918212151780865
1057
1058
      Itoshikihiro deid.py : ChenLin deid.py
1059
1060
      The similarity results tested by Levenshtein are following:
1061
      jaro: 1.0
      distance: 0
1062
1063
     ratio: 1.0
1064
1065
      Itoshikihiro deid-date-Jie.py: Nasim de-id-location.py
1066
1067
      The similarity results tested by Levenshtein are following:
1068
      jaro: 0.5834987388663261
      distance: 5070
1069
1070
     ratio: 0.4723773520061861
```

```
1071
1072
      Itoshikihiro deid-date-Jie.py: Nasim deid.py
1073
      The similarity results tested by Levenshtein are following:
1074
1075
      jaro: 0.6557711323609124
      distance: 2317
1076
1077
     ratio: 0.6839400428265524
1078
1079
      Itoshikihiro deid-date-Jie.py: Nasim de-id-date.py
1080
      The similarity results tested by Levenshtein are following:
1081
1082
      jaro: 0.599676605908865
1083
      distance: 4092
     ratio: 0.5566466630296417
1084
1085
      Itoshikihiro deid-date-Jie.py : Nasim de-id-age.py
1086
1087
1088
      The similarity results tested by Levenshtein are following:
1089
      jaro: 0.6548455298038197
1090
      distance: 3123
     ratio: 0.5599237045671294
1091
1092
1093
      Itoshikihiro deid-date-Jie.py : Andre deid-Andre_Holder.py
1094
1095
      The similarity results tested by Levenshtein are following:
      jaro: 0.6721955902223019
1096
     distance: 2696
1097
      ratio: 0.6760333944206882
1098
1099
1100
      Itoshikihiro deid-date-Jie.py : Mahmoud deid_ssn_mahmoud.py
1101
1102
      The similarity results tested by Levenshtein are following:
1103
      jaro: 0.6516199526483168
     distance: 2361
1104
1105
      ratio: 0.6767719897523484
1106
1107
      Itoshikihiro deid-date-Jie.py : Mahmoud deid_date_mahmoud.py
1108
1109
      The similarity results tested by Levenshtein are following:
1110
      jaro: 0.6731968568452693
1111
     distance: 2709
     ratio: 0.6712244897959184
1112
1113
1114
     Itoshikihiro deid-date-Jie.py : Mahmoud deid_age_mahmoud.py
1115
1116
      The similarity results tested by Levenshtein are following:
1117
      jaro: 0.6593629096943436
1118
     distance: 2477
     ratio: 0.6734501206335886
1119
1120
1121
     Itoshikihiro deid-date-Jie.py : ChenLin deid-ChenLin.py
1122
1123
      The similarity results tested by Levenshtein are following:
```

```
1124 jaro: 0.5057462566712471
1125
     distance: 17175
1126
     ratio: 0.264168039538715
1127
1128
     Itoshikihiro deid-date-Jie.py : ChenLin deid.py
1129
1130
      The similarity results tested by Levenshtein are following:
1131
      jaro: 0.6557711323609124
      distance: 2317
1132
     ratio: 0.6839400428265524
1133
1134
     Itoshikihiro deid-name-Jie.py : Nasim de-id-location.py
1135
1136
1137
      The similarity results tested by Levenshtein are following:
1138
      jaro: 0.6466414665495342
      distance: 4919
1139
1140 ratio: 0.5007358670245
1141
1142
     Itoshikihiro deid-name-Jie.py : Nasim deid.py
1143
1144
      The similarity results tested by Levenshtein are following:
1145
      jaro: 0.7251300664288114
1146
     distance: 2450
1147
     ratio: 0.6850410722006053
1148
      Itoshikihiro deid-name-Jie.py: Nasim de-id-date.py
1149
1150
1151
      The similarity results tested by Levenshtein are following:
1152
      jaro: 0.6621100984577832
      distance: 4014
1153
      ratio: 0.5767186067827681
1154
1155
1156
      Itoshikihiro deid-name-Jie.py: Nasim de-id-age.py
1157
1158
      The similarity results tested by Levenshtein are following:
      jaro: 0.7237136582012825
1159
1160
     distance: 2995
1161
      ratio: 0.5820943416408172
1162
1163
      Itoshikihiro deid-name-Jie.py : Andre deid-Andre_Holder.py
1164
1165
      The similarity results tested by Levenshtein are following:
1166
      jaro: 0.7007765437113408
1167
      distance: 2942
      ratio: 0.6420793096363263
1168
1169
1170
      Itoshikihiro deid-name-Jie.py: Mahmoud deid_ssn_mahmoud.py
1171
      The similarity results tested by Levenshtein are following:
1172
1173
      jaro: 0.723291008331523
1174
     distance: 2484
      ratio: 0.6818965517241379
1175
1176
```

```
1177 Itoshikihiro deid-name-Jie.py : Mahmoud deid_date_mahmoud.py
1178
1179
      The similarity results tested by Levenshtein are following:
1180
      jaro: 0.703185806363572
1181
      distance: 2923
      ratio: 0.6497116968698518
1182
1183
1184
      Itoshikihiro deid-name-Jie.py : Mahmoud deid_age_mahmoud.py
1185
1186
      The similarity results tested by Levenshtein are following:
      jaro: 0.7195861618718049
1187
     distance: 2624
1188
1189
      ratio: 0.6727368978295395
1190
1191
     Itoshikihiro deid-name-Jie.py : ChenLin deid-ChenLin.py
1192
1193
     The similarity results tested by Levenshtein are following:
      jaro: 0.5551738091376321
1194
1195
     distance: 16838
     ratio: 0.29224537037037035
1196
1197
1198
     Itoshikihiro deid-name-Jie.py : ChenLin deid.py
1199
1200
     The similarity results tested by Levenshtein are following:
      jaro: 0.7251300664288114
1201
      distance: 2450
1202
1203
     ratio: 0.6850410722006053
1204
     Nasim de-id-location.py : Andre deid-Andre_Holder.py
1205
1206
1207
      The similarity results tested by Levenshtein are following:
1208
      jaro: 0.7047714451423163
1209
     distance: 3828
     ratio: 0.6178479618068307
1210
1211
      Nasim de-id-location.py: Mahmoud deid_ssn_mahmoud.py
1212
1213
1214
      The similarity results tested by Levenshtein are following:
1215
      jaro: 0.7314117229024557
1216
      distance: 3620
      ratio: 0.647215257199301
1217
1218
1219
      Nasim de-id-location.py : Mahmoud deid_date_mahmoud.py
1220
      The similarity results tested by Levenshtein are following:
1221
1222
      jaro: 0.7220739788810301
1223
      distance: 3710
      ratio: 0.6282645479290812
1224
1225
1226
      Nasim de-id-location.py : Mahmoud deid_age_mahmoud.py
1227
1228
      The similarity results tested by Levenshtein are following:
1229
      jaro: 0.7325388852011249
```

```
1230 distance: 3607
1231
     ratio: 0.6431037070388714
1232
1233
     Nasim de-id-location.py : ChenLin deid-ChenLin.py
1234
      The similarity results tested by Levenshtein are following:
1235
1236
     jaro: 0.5964311285440955
      distance: 15296
1237
     ratio: 0.38221778933494815
1238
1239
1240
     Nasim de-id-location.py : ChenLin deid.py
1241
1242
      The similarity results tested by Levenshtein are following:
     jaro: 0.7288723120536037
1243
1244
     distance: 3611
     ratio: 0.6504225995583645
1245
1246
1247
      Nasim deid.py : Andre deid-Andre_Holder.py
1248
1249
      The similarity results tested by Levenshtein are following:
     jaro: 0.7873682872182086
1250
1251 | distance: 1287
1252
      ratio: 0.8806998939554613
1253
1254
     Nasim deid.py : Mahmoud deid_ssn_mahmoud.py
1255
1256
     The similarity results tested by Levenshtein are following:
      jaro: 0.8231258743340041
1257
1258
     distance: 211
     ratio: 0.9756950837783097
1259
1260
1261
     Nasim deid.py: Mahmoud deid_date_mahmoud.py
1262
     The similarity results tested by Levenshtein are following:
1263
1264
      jaro: 0.7991964384755024
1265
     distance: 702
     ratio: 0.9272179918540818
1266
1267
1268
     Nasim deid.py : Mahmoud deid_age_mahmoud.py
1269
     The similarity results tested by Levenshtein are following:
1270
1271
      jaro: 0.8142641234970611
     distance: 427
1272
1273
     ratio: 0.950575859254557
1274
1275
      Nasim deid.py : ChenLin deid-ChenLin.py
1276
1277
      The similarity results tested by Levenshtein are following:
1278
      jaro: 0.5947612031278235
      distance: 14970
1279
1280
     ratio: 0.41918212151780865
1281
1282
     Nasim deid.py : ChenLin deid.py
```

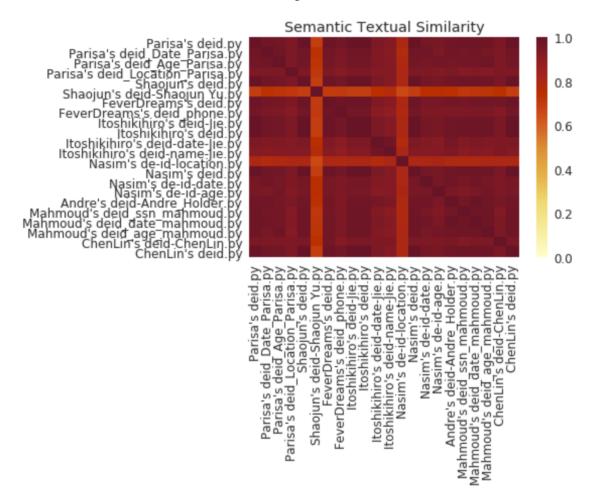
```
1283
1284
     The similarity results tested by Levenshtein are following:
1285
      jaro: 1.0
     distance: 0
1286
1287
     ratio: 1.0
1288
1289
      Nasim de-id-date.py: Andre deid-Andre_Holder.py
1290
1291
     The similarity results tested by Levenshtein are following:
      jaro: 0.7324080950103764
1292
1293
     distance: 2606
     ratio: 0.7599815014644674
1294
1295
1296
     Nasim de-id-date.py : Mahmoud deid_ssn_mahmoud.py
1297
     The similarity results tested by Levenshtein are following:
1298
1299
      jaro: 0.755697263461831
1300
     distance: 2055
1301
     ratio: 0.818849840255591
1302
      Nasim de-id-date.py: Mahmoud deid_date_mahmoud.py
1303
1304
1305
      The similarity results tested by Levenshtein are following:
1306
     jaro: 0.7502499723558853
1307
      distance: 2183
     ratio: 0.7896849907350216
1308
1309
1310
     Nasim de-id-date.py: Mahmoud deid_age_mahmoud.py
1311
1312
      The similarity results tested by Levenshtein are following:
1313
     jaro: 0.7573211946021731
     distance: 2103
1314
     ratio: 0.8048876625936146
1315
1316
1317
      Nasim de-id-date.py : ChenLin deid-ChenLin.py
1318
1319
     The similarity results tested by Levenshtein are following:
1320
      jaro: 0.6095559054011043
1321
     distance: 15158
1322
      ratio: 0.4195829687955672
1323
1324
     Nasim de-id-date.py : ChenLin deid.py
1325
1326
     The similarity results tested by Levenshtein are following:
      jaro: 0.7532462007044755
1327
1328
     distance: 2080
1329
     ratio: 0.8198847262247838
1330
     Nasim de-id-age.py : Andre deid-Andre_Holder.py
1331
1332
1333
     The similarity results tested by Levenshtein are following:
      jaro: 0.7644899028373094
1334
1335
     distance: 2576
```

```
1336 ratio: 0.6962236046613511
1337
1338
      Nasim de-id-age.py: Mahmoud deid_ssn_mahmoud.py
1339
1340
     The similarity results tested by Levenshtein are following:
      jaro: 0.7806685253695465
1341
1342
     distance: 2126
      ratio: 0.7290811205401952
1343
1344
     Nasim de-id-age.py : Mahmoud deid_date_mahmoud.py
1345
1346
      The similarity results tested by Levenshtein are following:
1347
1348
      jaro: 0.768758933176998
     distance: 2479
1349
     ratio: 0.7000263365815117
1350
1351
1352
     Nasim de-id-age.py : Mahmoud deid_age_mahmoud.py
1353
1354
     The similarity results tested by Levenshtein are following:
1355
      jaro: 0.7819688398610026
1356
     distance: 2250
1357
     ratio: 0.7209636821287306
1358
1359
     Nasim de-id-age.py : ChenLin deid-ChenLin.py
1360
      The similarity results tested by Levenshtein are following:
1361
1362
      jaro: 0.5679697031819618
1363
     distance: 16013
     ratio: 0.3486529318541997
1364
1365
1366
     Nasim de-id-age.py : ChenLin deid.py
1367
1368
     The similarity results tested by Levenshtein are following:
      jaro: 0.779738456966431
1369
1370
      distance: 2053
     ratio: 0.7371695178849145
1371
1372
1373
      Andre deid-Andre_Holder.py : Mahmoud deid_ssn_mahmoud.py
1374
1375
      The similarity results tested by Levenshtein are following:
1376
      jaro: 0.7840895490604356
      distance: 1252
1377
      ratio: 0.8802891396332864
1378
1379
      Andre deid-Andre_Holder.py : Mahmoud deid_date_mahmoud.py
1380
1381
1382
      The similarity results tested by Levenshtein are following:
1383
      jaro: 0.7980585540212525
     distance: 1276
1384
      ratio: 0.8712635869565217
1385
1386
1387
      Andre deid-Andre_Holder.py: Mahmoud deid_age_mahmoud.py
1388
```

```
1389 The similarity results tested by Levenshtein are following:
1390
     jaro: 0.7872139751164751
1391
     distance: 1260
     ratio: 0.8707967677469807
1392
1393
      Andre deid-Andre_Holder.py : ChenLin deid-ChenLin.py
1394
1395
1396
      The similarity results tested by Levenshtein are following:
      jaro: 0.5616178186306954
1397
     distance: 15731
1398
      ratio: 0.38033211456429006
1399
1400
1401
      Andre deid-Andre_Holder.py : ChenLin deid.py
1402
1403
      The similarity results tested by Levenshtein are following:
      jaro: 0.7873682872182086
1404
1405
     distance: 1287
1406
      ratio: 0.8806998939554613
1407
      Mahmoud deid_ssn_mahmoud.py : ChenLin deid-ChenLin.py
1408
1409
1410
     The similarity results tested by Levenshtein are following:
      jaro: 0.5888555109093102
1411
1412
     distance: 15171
      ratio: 0.41027827300209285
1413
1414
1415
      Mahmoud deid_ssn_mahmoud.py : ChenLin deid.py
1416
      The similarity results tested by Levenshtein are following:
1417
1418
      jaro: 0.8231258743340041
1419
      distance: 211
     ratio: 0.9756950837783097
1420
1421
      Mahmoud deid_date_mahmoud.py : ChenLin deid-ChenLin.py
1422
1423
      The similarity results tested by Levenshtein are following:
1424
      jaro: 0.5740885489860531
1425
1426
     distance: 15654
     ratio: 0.399252877944652
1427
1428
      Mahmoud deid_date_mahmoud.py : ChenLin deid.py
1429
1430
1431
      The similarity results tested by Levenshtein are following:
1432
      jaro: 0.7991964384755024
      distance: 702
1433
1434
      ratio: 0.9272179918540818
1435
1436
      Mahmoud deid_age_mahmoud.py : ChenLin deid-ChenLin.py
1437
1438
      The similarity results tested by Levenshtein are following:
1439
      jaro: 0.5867488786590064
      distance: 15387
1440
1441
     ratio: 0.4032040667000424
```

```
1442
1443
Mahmoud deid_age_mahmoud.py : ChenLin deid.py
1444
1445
The similarity results tested by Levenshtein are following:
1446
jaro: 0.8142641234970611
1447
distance: 427
1448
ratio: 0.950575859254557
```

# **Tensorflow Virtualization Similarity Score**



#### **STS Benchmark**

```
1
    Parisa's deid.py compares to Parisa's deid_Date_Parisa.py
 2
        STS Benchmark Score is 0.77391994
 3
    Parisa's deid.py compares to Parisa's deid_Age_Parisa.py
4
        STS Benchmark Score is 0.7577548
 5
    Parisa's deid.py compares to Parisa's deid_Location_Parisa.py
 6
        STS Benchmark Score is 0.6646246
7
    Parisa's deid.py compares to Shaojun's deid.py
8
        STS Benchmark Score is 0.9995117
9
    Parisa's deid.py compares to Shaojun's deid-Shaojun Yu.py
        STS Benchmark Score is 0.20311517
10
11
    Parisa's deid.py compares to FeverDreams's deid.py
12
        STS Benchmark Score is 0.8443497
```

```
13 Parisa's deid.py compares to FeverDreams's deid_phone.py
14
        STS Benchmark Score is 0.75724745
   Parisa's deid.py compares to Itoshikihiro's deid-Jie.py
15
        STS Benchmark Score is 0.9995117
16
17
    Parisa's deid.py compares to Itoshikihiro's deid.py
        STS Benchmark Score is 0.9995117
18
    Parisa's deid.py compares to Itoshikihiro's deid-date-Jie.py
19
20
        STS Benchmark Score is 0.6723099
    Parisa's deid.py compares to Itoshikihiro's deid-name-Jie.py
21
        STS Benchmark Score is 0.61155987
22
23
    Parisa's deid.py compares to Nasim's de-id-location.py
24
        STS Benchmark Score is 0.35966337
25
    Parisa's deid.py compares to Nasim's deid.py
26
        STS Benchmark Score is 0.9995117
27
    Parisa's deid.py compares to Nasim's de-id-date.py
        STS Benchmark Score is 0.7326237
28
    Parisa's deid.py compares to Nasim's de-id-age.py
29
30
        STS Benchmark Score is 0.6962836
31
    Parisa's deid.py compares to Andre's deid-Andre_Holder.py
        STS Benchmark Score is 0.7823216
32
33
    Parisa's deid.py compares to Mahmoud's deid_ssn_mahmoud.py
34
        STS Benchmark Score is 0.7982335
35
    Parisa's deid.py compares to Mahmoud's deid_date_mahmoud.py
        STS Benchmark Score is 0.8076906
36
37
    Parisa's deid.py compares to Mahmoud's deid_age_mahmoud.py
        STS Benchmark Score is 0.8005162
38
39
    Parisa's deid.py compares to ChenLin's deid-ChenLin.py
40
        STS Benchmark Score is 0.6855277
    Parisa's deid.py compares to ChenLin's deid.py
41
42
        STS Benchmark Score is 0.9995117
43
    Parisa's deid_Date_Parisa.py compares to Parisa's deid_Age_Parisa.py
        STS Benchmark Score is 0.7796645
44
45
    Parisa's deid_Date_Parisa.py compares to Parisa's deid_Location_Parisa.py
        STS Benchmark Score is 0.6748899
46
47
    Parisa's deid_Date_Parisa.py compares to Shaojun's deid.py
        STS Benchmark Score is 0.77391994
48
49
    Parisa's deid_Date_Parisa.py compares to Shaojun's deid-Shaojun Yu.py
50
        STS Benchmark Score is 0.2562076
51
    Parisa's deid_Date_Parisa.py compares to FeverDreams's deid.py
        STS Benchmark Score is 0.7462578
52
53
    Parisa's deid_Date_Parisa.py compares to FeverDreams's deid_phone.py
        STS Benchmark Score is 0.6814806
54
55
    Parisa's deid_Date_Parisa.py compares to Itoshikihiro's deid-Jie.py
56
        STS Benchmark Score is 0.77391994
    Parisa's deid_Date_Parisa.py compares to Itoshikihiro's deid.py
57
58
        STS Benchmark Score is 0.77391994
59
    Parisa's deid_Date_Parisa.py compares to Itoshikihiro's deid-date-Jie.py
60
        STS Benchmark Score is 0.64279383
    Parisa's deid_Date_Parisa.py compares to Itoshikihiro's deid-name-Jie.py
61
62
        STS Benchmark Score is 0.5898832
63
    Parisa's deid_Date_Parisa.py compares to Nasim's de-id-location.py
64
        STS Benchmark Score is 0.32214737
    Parisa's deid_Date_Parisa.py compares to Nasim's deid.py
65
```

```
STS Benchmark Score is 0.77391994
66
 67
     Parisa's deid_Date_Parisa.py compares to Nasim's de-id-date.py
 68
         STS Benchmark Score is 0.7804253
     Parisa's deid_Date_Parisa.py compares to Nasim's de-id-age.py
 69
 70
         STS Benchmark Score is 0.66802084
 71
     Parisa's deid_Date_Parisa.py compares to Andre's deid-Andre_Holder.py
         STS Benchmark Score is 0.7740681
 72
 73
     Parisa's deid_Date_Parisa.py compares to Mahmoud's deid_ssn_mahmoud.py
         STS Benchmark Score is 0.742605
 74
 75
     Parisa's deid_Date_Parisa.py compares to Mahmoud's deid_date_mahmoud.py
         STS Benchmark Score is 0.77550113
 76
 77
     Parisa's deid_Date_Parisa.py compares to Mahmoud's deid_age_mahmoud.py
 78
         STS Benchmark Score is 0.71769524
 79
     Parisa's deid_Date_Parisa.py compares to ChenLin's deid-ChenLin.py
         STS Benchmark Score is 0.6668976
 80
 81
     Parisa's deid_Date_Parisa.py compares to ChenLin's deid.py
 82
         STS Benchmark Score is 0.77391994
 83
     Parisa's deid_Age_Parisa.py compares to Parisa's deid_Location_Parisa.py
 84
         STS Benchmark Score is 0.66112536
 85
     Parisa's deid_Age_Parisa.py compares to Shaojun's deid.py
         STS Benchmark Score is 0.7577548
 86
     Parisa's deid_Age_Parisa.py compares to Shaojun's deid-Shaojun Yu.py
 87
 88
         STS Benchmark Score is 0.24589944
     Parisa's deid_Age_Parisa.py compares to FeverDreams's deid.py
 89
 90
         STS Benchmark Score is 0.73141736
 91
     Parisa's deid_Age_Parisa.py compares to FeverDreams's deid_phone.py
 92
         STS Benchmark Score is 0.66182876
 93
     Parisa's deid_Age_Parisa.py compares to Itoshikihiro's deid-Jie.py
         STS Benchmark Score is 0.7577548
 95
     Parisa's deid_Age_Parisa.py compares to Itoshikihiro's deid.py
 96
         STS Benchmark Score is 0.7577548
97
     Parisa's deid_Age_Parisa.py compares to Itoshikihiro's deid-date-Jie.py
98
         STS Benchmark Score is 0.6414424
99
     Parisa's deid_Age_Parisa.py compares to Itoshikihiro's deid-name-Jie.py
100
         STS Benchmark Score is 0.604254
101
     Parisa's deid_Age_Parisa.py compares to Nasim's de-id-location.py
102
         STS Benchmark Score is 0.3404339
103
     Parisa's deid_Age_Parisa.py compares to Nasim's deid.py
104
         STS Benchmark Score is 0.7577548
     Parisa's deid_Age_Parisa.py compares to Nasim's de-id-date.py
105
106
         STS Benchmark Score is 0.708049
     Parisa's deid_Age_Parisa.py compares to Nasim's de-id-age.py
107
108
         STS Benchmark Score is 0.7354356
109
     Parisa's deid_Age_Parisa.py compares to Andre's deid-Andre_Holder.py
110
         STS Benchmark Score is 0.7289948
111
     Parisa's deid_Age_Parisa.py compares to Mahmoud's deid_ssn_mahmoud.py
112
         STS Benchmark Score is 0.7395792
113
     Parisa's deid_Age_Parisa.py compares to Mahmoud's deid_date_mahmoud.py
114
         STS Benchmark Score is 0.73591864
115
     Parisa's deid_Age_Parisa.py compares to Mahmoud's deid_age_mahmoud.py
116
         STS Benchmark Score is 0.78681964
117
     Parisa's deid_Age_Parisa.py compares to ChenLin's deid-ChenLin.py
118
         STS Benchmark Score is 0.66384745
```

```
119 Parisa's deid_Age_Parisa.py compares to ChenLin's deid.py
120
         STS Benchmark Score is 0.7577548
121 Parisa's deid_Location_Parisa.py compares to Shaojun's deid.py
         STS Benchmark Score is 0.6646246
122
123
     Parisa's deid_Location_Parisa.py compares to Shaojun's deid-Shaojun Yu.py
124
         STS Benchmark Score is 0.23053527
125
     Parisa's deid_Location_Parisa.py compares to FeverDreams's deid.py
126
         STS Benchmark Score is 0.66578555
     Parisa's deid_Location_Parisa.py compares to FeverDreams's deid_phone.py
127
         STS Benchmark Score is 0.5935304
128
     Parisa's deid_Location_Parisa.py compares to Itoshikihiro's deid-Jie.py
129
130
         STS Benchmark Score is 0.6646246
131
     Parisa's deid_Location_Parisa.py compares to Itoshikihiro's deid.py
132
         STS Benchmark Score is 0.6646246
133
     Parisa's deid_Location_Parisa.py compares to Itoshikihiro's deid-date-Jie.py
134
         STS Benchmark Score is 0.6217836
135
     Parisa's deid_Location_Parisa.py compares to Itoshikihiro's deid-name-Jie.py
136
         STS Benchmark Score is 0.6199389
137
     Parisa's deid_Location_Parisa.py compares to Nasim's de-id-location.py
         STS Benchmark Score is 0.35741293
138
139
     Parisa's deid_Location_Parisa.py compares to Nasim's deid.py
140
         STS Benchmark Score is 0.6646246
141
     Parisa's deid_Location_Parisa.py compares to Nasim's de-id-date.py
142
         STS Benchmark Score is 0.64786905
143
     Parisa's deid_Location_Parisa.py compares to Nasim's de-id-age.py
144
         STS Benchmark Score is 0.62605846
145 | Parisa's deid_Location_Parisa.py compares to Andre's deid-Andre_Holder.py
146
         STS Benchmark Score is 0.6685132
     Parisa's deid_Location_Parisa.py compares to Mahmoud's deid_ssn_mahmoud.py
147
148
         STS Benchmark Score is 0.60455835
149
     Parisa's deid_Location_Parisa.py compares to Mahmoud's deid_date_mahmoud.py
150
         STS Benchmark Score is 0.6281051
151
     Parisa's deid_Location_Parisa.py compares to Mahmoud's deid_age_mahmoud.py
152
         STS Benchmark Score is 0.6040533
153
     Parisa's deid_Location_Parisa.py compares to ChenLin's deid-ChenLin.py
         STS Benchmark Score is 0.6491078
154
155
     Parisa's deid_Location_Parisa.py compares to ChenLin's deid.py
156
         STS Benchmark Score is 0.6646246
157
     Shaojun's deid.py compares to Shaojun's deid-Shaojun Yu.py
         STS Benchmark Score is 0.20311517
158
159
     Shaojun's deid.py compares to FeverDreams's deid.py
160
         STS Benchmark Score is 0.8443497
161
     Shaojun's deid.py compares to FeverDreams's deid_phone.py
162
         STS Benchmark Score is 0.75724745
163
     Shaojun's deid.py compares to Itoshikihiro's deid-Jie.py
164
         STS Benchmark Score is 0.9995117
165
     Shaojun's deid.py compares to Itoshikihiro's deid.py
166
         STS Benchmark Score is 0.9995117
167
     Shaojun's deid.py compares to Itoshikihiro's deid-date-Jie.py
168
         STS Benchmark Score is 0.6723099
169
     Shaojun's deid.py compares to Itoshikihiro's deid-name-Jie.py
170
         STS Benchmark Score is 0.61155987
     Shaojun's deid.py compares to Nasim's de-id-location.py
171
```

```
STS Benchmark Score is 0.35966337
172
173
     Shaojun's deid.py compares to Nasim's deid.py
174
         STS Benchmark Score is 0.9995117
     Shaojun's deid.py compares to Nasim's de-id-date.py
175
176
         STS Benchmark Score is 0.7326237
177
     Shaojun's deid.py compares to Nasim's de-id-age.py
178
         STS Benchmark Score is 0.6962836
179
     Shaojun's deid.py compares to Andre's deid-Andre_Holder.py
         STS Benchmark Score is 0.7823216
180
181
     Shaojun's deid.py compares to Mahmoud's deid_ssn_mahmoud.py
182
         STS Benchmark Score is 0.7982335
183
     Shaojun's deid.py compares to Mahmoud's deid_date_mahmoud.py
184
         STS Benchmark Score is 0.8076906
185
     Shaojun's deid.py compares to Mahmoud's deid_age_mahmoud.py
         STS Benchmark Score is 0.8005162
186
187
     Shaojun's deid.py compares to ChenLin's deid-ChenLin.py
188
         STS Benchmark Score is 0.6855277
189
     Shaojun's deid.py compares to ChenLin's deid.py
190
         STS Benchmark Score is 0.9995117
191
     Shaojun's deid-Shaojun Yu.py compares to FeverDreams's deid.py
192
         STS Benchmark Score is 0.21289134
     Shaojun's deid-Shaojun Yu.py compares to FeverDreams's deid_phone.py
193
194
         STS Benchmark Score is 0.21530718
195
     Shaojun's deid-Shaojun Yu.py compares to Itoshikihiro's deid-Jie.py
         STS Benchmark Score is 0.20311517
196
197
     Shaojun's deid-Shaojun Yu.py compares to Itoshikihiro's deid.py
198
         STS Benchmark Score is 0.20311517
199
     Shaojun's deid-Shaojun Yu.py compares to Itoshikihiro's deid-date-Jie.py
         STS Benchmark Score is 0.27662957
200
201
     Shaojun's deid-Shaojun Yu.py compares to Itoshikihiro's deid-name-Jie.py
202
         STS Benchmark Score is 0.30423874
203
     Shaojun's deid-Shaojun Yu.py compares to Nasim's de-id-location.py
204
         STS Benchmark Score is 0.1564073
205
     Shaojun's deid-Shaojun Yu.py compares to Nasim's deid.py
206
         STS Benchmark Score is 0.20311517
207
     Shaojun's deid-Shaojun Yu.py compares to Nasim's de-id-date.py
208
         STS Benchmark Score is 0.27690572
209
     Shaojun's deid-Shaojun Yu.py compares to Nasim's de-id-age.py
210
         STS Benchmark Score is 0.27427983
211
     Shaojun's deid-Shaojun Yu.py compares to Andre's deid-Andre_Holder.py
212
         STS Benchmark Score is 0.26762974
213
     Shaojun's deid-Shaojun Yu.py compares to Mahmoud's deid_ssn_mahmoud.py
214
         STS Benchmark Score is 0.23090112
215
     Shaojun's deid-Shaojun Yu.py compares to Mahmoud's deid_date_mahmoud.py
216
         STS Benchmark Score is 0.24041915
217
     Shaojun's deid-Shaojun Yu.py compares to Mahmoud's deid_age_mahmoud.py
218
         STS Benchmark Score is 0.24266797
219
     Shaojun's deid-Shaojun Yu.py compares to ChenLin's deid-ChenLin.py
220
         STS Benchmark Score is 0.2644667
221
     Shaojun's deid-Shaojun Yu.py compares to ChenLin's deid.py
222
         STS Benchmark Score is 0.20311517
223
     FeverDreams's deid.py compares to FeverDreams's deid_phone.py
224
         STS Benchmark Score is 0.79009724
```

```
225 | FeverDreams's deid.py compares to Itoshikihiro's deid-Jie.py
226
         STS Benchmark Score is 0.8443497
227
    FeverDreams's deid.py compares to Itoshikihiro's deid.py
         STS Benchmark Score is 0.8443497
228
229
     FeverDreams's deid.py compares to Itoshikihiro's deid-date-Jie.py
230
         STS Benchmark Score is 0.63599116
231 FeverDreams's deid.py compares to Itoshikihiro's deid-name-Jie.py
232
         STS Benchmark Score is 0.5971642
     FeverDreams's deid.py compares to Nasim's de-id-location.py
233
234
         STS Benchmark Score is 0.3463645
235
     FeverDreams's deid.py compares to Nasim's deid.py
236
         STS Benchmark Score is 0.8443497
237
     FeverDreams's deid.py compares to Nasim's de-id-date.py
238
         STS Benchmark Score is 0.7164128
239
     FeverDreams's deid.py compares to Nasim's de-id-age.py
240
         STS Benchmark Score is 0.698786
241 FeverDreams's deid.py compares to Andre's deid-Andre_Holder.py
242
         STS Benchmark Score is 0.7446203
243
     FeverDreams's deid.py compares to Mahmoud's deid_ssn_mahmoud.py
244
         STS Benchmark Score is 0.72712636
245
     FeverDreams's deid.py compares to Mahmoud's deid_date_mahmoud.py
246
         STS Benchmark Score is 0.760545
247
     FeverDreams's deid.py compares to Mahmoud's deid_age_mahmoud.py
248
         STS Benchmark Score is 0.7525693
249
     FeverDreams's deid.py compares to ChenLin's deid-ChenLin.py
250
         STS Benchmark Score is 0.73570013
251 FeverDreams's deid.py compares to ChenLin's deid.py
252
         STS Benchmark Score is 0.8443497
     FeverDreams's deid_phone.py compares to Itoshikihiro's deid-Jie.py
253
254
         STS Benchmark Score is 0.75724745
255
     FeverDreams's deid_phone.py compares to Itoshikihiro's deid.py
256
         STS Benchmark Score is 0.75724745
257
     FeverDreams's deid_phone.py compares to Itoshikihiro's deid-date-Jie.py
258
         STS Benchmark Score is 0.57370806
259
     FeverDreams's deid_phone.py compares to Itoshikihiro's deid-name-Jie.py
260
         STS Benchmark Score is 0.54308873
261
     FeverDreams's deid_phone.py compares to Nasim's de-id-location.py
262
         STS Benchmark Score is 0.34280425
263
     FeverDreams's deid_phone.py compares to Nasim's deid.py
         STS Benchmark Score is 0.75724745
264
265
     FeverDreams's deid_phone.py compares to Nasim's de-id-date.py
266
         STS Benchmark Score is 0.6634582
267
     FeverDreams's deid_phone.py compares to Nasim's de-id-age.py
268
         STS Benchmark Score is 0.65049106
269
     FeverDreams's deid_phone.py compares to Andre's deid-Andre_Holder.py
270
         STS Benchmark Score is 0.6559067
271
     FeverDreams's deid_phone.py compares to Mahmoud's deid_ssn_mahmoud.py
272
         STS Benchmark Score is 0.65875167
273
     FeverDreams's deid_phone.py compares to Mahmoud's deid_date_mahmoud.py
274
         STS Benchmark Score is 0.6717627
275
     FeverDreams's deid_phone.py compares to Mahmoud's deid_age_mahmoud.py
276
         STS Benchmark Score is 0.66804826
     FeverDreams's deid_phone.py compares to ChenLin's deid-ChenLin.py
277
```

```
STS Benchmark Score is 0.6181232
278
279
     FeverDreams's deid_phone.py compares to ChenLin's deid.py
280
         STS Benchmark Score is 0.75724745
     Itoshikihiro's deid-Jie.py compares to Itoshikihiro's deid.py
281
282
         STS Benchmark Score is 0.9995117
283
     Itoshikihiro's deid-Jie.py compares to Itoshikihiro's deid-date-Jie.py
284
         STS Benchmark Score is 0.6723099
285
     Itoshikihiro's deid-Jie.py compares to Itoshikihiro's deid-name-Jie.py
         STS Benchmark Score is 0.61155987
286
287
     Itoshikihiro's deid-Jie.py compares to Nasim's de-id-location.py
288
         STS Benchmark Score is 0.35966337
289
     Itoshikihiro's deid-Jie.py compares to Nasim's deid.py
290
         STS Benchmark Score is 0.9995117
291
     Itoshikihiro's deid-Jie.py compares to Nasim's de-id-date.py
         STS Benchmark Score is 0.7326237
292
293
     Itoshikihiro's deid-Jie.py compares to Nasim's de-id-age.py
294
         STS Benchmark Score is 0.6962836
295
     Itoshikihiro's deid-Jie.py compares to Andre's deid-Andre_Holder.py
296
         STS Benchmark Score is 0.7823216
297
     Itoshikihiro's deid-Jie.py compares to Mahmoud's deid_ssn_mahmoud.py
298
         STS Benchmark Score is 0.7982335
299
     Itoshikihiro's deid-Jie.py compares to Mahmoud's deid_date_mahmoud.py
300
         STS Benchmark Score is 0.8076906
301
     Itoshikihiro's deid-Jie.py compares to Mahmoud's deid_age_mahmoud.py
         STS Benchmark Score is 0.8005162
302
     Itoshikihiro's deid-Jie.py compares to ChenLin's deid-ChenLin.py
303
304
         STS Benchmark Score is 0.6855277
305
     Itoshikihiro's deid-Jie.py compares to ChenLin's deid.py
         STS Benchmark Score is 0.9995117
306
307
     Itoshikihiro's deid.py compares to Itoshikihiro's deid-date-Jie.py
308
         STS Benchmark Score is 0.6723099
309
     Itoshikihiro's deid.py compares to Itoshikihiro's deid-name-Jie.py
310
         STS Benchmark Score is 0.61155987
311
     Itoshikihiro's deid.py compares to Nasim's de-id-location.py
312
         STS Benchmark Score is 0.35966337
     Itoshikihiro's deid.py compares to Nasim's deid.py
313
314
         STS Benchmark Score is 0.9995117
315
     Itoshikihiro's deid.py compares to Nasim's de-id-date.py
316
         STS Benchmark Score is 0.7326237
317
     Itoshikihiro's deid.py compares to Nasim's de-id-age.py
318
         STS Benchmark Score is 0.6962836
     Itoshikihiro's deid.py compares to Andre's deid-Andre_Holder.py
319
320
         STS Benchmark Score is 0.7823216
321
     Itoshikihiro's deid.py compares to Mahmoud's deid_ssn_mahmoud.py
         STS Benchmark Score is 0.7982335
322
323
     Itoshikihiro's deid.py compares to Mahmoud's deid_date_mahmoud.py
324
         STS Benchmark Score is 0.8076906
325
     Itoshikihiro's deid.py compares to Mahmoud's deid_age_mahmoud.py
326
         STS Benchmark Score is 0.8005162
327
     Itoshikihiro's deid.py compares to ChenLin's deid-ChenLin.py
328
         STS Benchmark Score is 0.6855277
329
     Itoshikihiro's deid.py compares to ChenLin's deid.py
330
         STS Benchmark Score is 0.9995117
```

```
331 Itoshikihiro's deid-date-Jie.py compares to Itoshikihiro's deid-name-Jie.py
332
         STS Benchmark Score is 0.7738939
333
    Itoshikihiro's deid-date-Jie.py compares to Nasim's de-id-location.py
         STS Benchmark Score is 0.31878704
334
335
     Itoshikihiro's deid-date-Jie.py compares to Nasim's deid.py
336
         STS Benchmark Score is 0.6723099
337
     Itoshikihiro's deid-date-Jie.py compares to Nasim's de-id-date.py
338
         STS Benchmark Score is 0.6232828
     Itoshikihiro's deid-date-Jie.py compares to Nasim's de-id-age.py
339
340
         STS Benchmark Score is 0.6010965
     Itoshikihiro's deid-date-Jie.py compares to Andre's deid-Andre_Holder.py
341
342
         STS Benchmark Score is 0.7292421
343
     Itoshikihiro's deid-date-Jie.py compares to Mahmoud's deid_ssn_mahmoud.py
344
         STS Benchmark Score is 0.62584037
345
     Itoshikihiro's deid-date-Jie.py compares to Mahmoud's deid_date_mahmoud.py
346
         STS Benchmark Score is 0.6795608
347
     Itoshikihiro's deid-date-Jie.py compares to Mahmoud's deid_age_mahmoud.py
348
         STS Benchmark Score is 0.6413636
349
     Itoshikihiro's deid-date-Jie.py compares to ChenLin's deid-ChenLin.py
350
         STS Benchmark Score is 0.6496881
     Itoshikihiro's deid-date-Jie.py compares to ChenLin's deid.py
351
352
         STS Benchmark Score is 0.6723099
353
     Itoshikihiro's deid-name-Jie.py compares to Nasim's de-id-location.py
354
         STS Benchmark Score is 0.36989743
355
     Itoshikihiro's deid-name-Jie.py compares to Nasim's deid.py
         STS Benchmark Score is 0.61155987
356
357
     Itoshikihiro's deid-name-Jie.py compares to Nasim's de-id-date.py
358
         STS Benchmark Score is 0.6023469
     Itoshikihiro's deid-name-Jie.py compares to Nasim's de-id-age.py
359
360
         STS Benchmark Score is 0.60394204
361
     Itoshikihiro's deid-name-Jie.py compares to Andre's deid-Andre_Holder.py
362
         STS Benchmark Score is 0.66524994
363
     Itoshikihiro's deid-name-Jie.py compares to Mahmoud's deid_ssn_mahmoud.py
364
         STS Benchmark Score is 0.580127
365
     Itoshikihiro's deid-name-Jie.py compares to Mahmoud's deid_date_mahmoud.py
366
         STS Benchmark Score is 0.62061316
367
     Itoshikihiro's deid-name-Jie.py compares to Mahmoud's deid_age_mahmoud.py
368
         STS Benchmark Score is 0.59883475
369
     Itoshikihiro's deid-name-Jie.py compares to ChenLin's deid-ChenLin.py
         STS Benchmark Score is 0.64903986
370
371
     Itoshikihiro's deid-name-Jie.py compares to ChenLin's deid.py
372
         STS Benchmark Score is 0.61155987
373
     Nasim's de-id-location.py compares to Nasim's deid.py
374
         STS Benchmark Score is 0.35966337
375
     Nasim's de-id-location.py compares to Nasim's de-id-date.py
376
         STS Benchmark Score is 0.35303187
377
     Nasim's de-id-location.py compares to Nasim's de-id-age.py
378
         STS Benchmark Score is 0.3731488
379
     Nasim's de-id-location.py compares to Andre's deid-Andre_Holder.py
380
         STS Benchmark Score is 0.33831334
381 Nasim's de-id-location.py compares to Mahmoud's deid_ssn_mahmoud.py
382
         STS Benchmark Score is 0.3324147
383
     Nasim's de-id-location.py compares to Mahmoud's deid_date_mahmoud.py
```

```
STS Benchmark Score is 0.33687252
384
385
     Nasim's de-id-location.py compares to Mahmoud's deid_age_mahmoud.py
386
         STS Benchmark Score is 0.34885728
    Nasim's de-id-location.py compares to ChenLin's deid-ChenLin.py
387
        STS Benchmark Score is 0.36347014
388
389
     Nasim's de-id-location.py compares to ChenLin's deid.py
390
         STS Benchmark Score is 0.35966337
391
     Nasim's deid.py compares to Nasim's de-id-date.py
         STS Benchmark Score is 0.7326237
392
393
     Nasim's deid.py compares to Nasim's de-id-age.py
394
         STS Benchmark Score is 0.6962836
395 Nasim's deid.py compares to Andre's deid-Andre_Holder.py
396
         STS Benchmark Score is 0.7823216
397
     Nasim's deid.py compares to Mahmoud's deid_ssn_mahmoud.py
398
        STS Benchmark Score is 0.7982335
399
     Nasim's deid.py compares to Mahmoud's deid_date_mahmoud.py
400
        STS Benchmark Score is 0.8076906
401
     Nasim's deid.py compares to Mahmoud's deid_age_mahmoud.py
402
        STS Benchmark Score is 0.8005162
403
     Nasim's deid.py compares to ChenLin's deid-ChenLin.py
404
         STS Benchmark Score is 0.6855277
405 Nasim's deid.py compares to ChenLin's deid.py
406
         STS Benchmark Score is 0.9995117
407
     Nasim's de-id-date.py compares to Nasim's de-id-age.py
         STS Benchmark Score is 0.7174942
408
409
     Nasim's de-id-date.py compares to Andre's deid-Andre_Holder.py
410
        STS Benchmark Score is 0.77435935
411
     Nasim's de-id-date.py compares to Mahmoud's deid_ssn_mahmoud.py
        STS Benchmark Score is 0.69501936
412
413
     Nasim's de-id-date.py compares to Mahmoud's deid_date_mahmoud.py
414
        STS Benchmark Score is 0.77950364
415 Nasim's de-id-date.py compares to Mahmoud's deid_age_mahmoud.py
416
        STS Benchmark Score is 0.71415687
417
     Nasim's de-id-date.py compares to ChenLin's deid-ChenLin.py
418
         STS Benchmark Score is 0.65872073
419
     Nasim's de-id-date.py compares to ChenLin's deid.py
420
        STS Benchmark Score is 0.7326237
421
    Nasim's de-id-age.py compares to Andre's deid-Andre_Holder.py
422
        STS Benchmark Score is 0.6822848
423
     Nasim's de-id-age.py compares to Mahmoud's deid_ssn_mahmoud.py
424
         STS Benchmark Score is 0.64283305
425 Nasim's de-id-age.py compares to Mahmoud's deid_date_mahmoud.py
426
         STS Benchmark Score is 0.68161535
427
     Nasim's de-id-age.py compares to Mahmoud's deid_age_mahmoud.py
         STS Benchmark Score is 0.7355825
428
429
     Nasim's de-id-age.py compares to ChenLin's deid-ChenLin.py
430
         STS Benchmark Score is 0.66115713
431
     Nasim's de-id-age.py compares to ChenLin's deid.py
         STS Benchmark Score is 0.6962836
432
     Andre's deid-Andre_Holder.py compares to Mahmoud's deid_ssn_mahmoud.py
433
434
         STS Benchmark Score is 0.7549503
435
     Andre's deid-Andre_Holder.py compares to Mahmoud's deid_date_mahmoud.py
436
         STS Benchmark Score is 0.8541899
```

```
Andre's deid-Andre_Holder.py compares to Mahmoud's deid_age_mahmoud.py
437
438
         STS Benchmark Score is 0.7738091
439
     Andre's deid-Andre_Holder.py compares to ChenLin's deid-ChenLin.py
440
         STS Benchmark Score is 0.6932734
441
     Andre's deid-Andre_Holder.py compares to ChenLin's deid.py
442
         STS Benchmark Score is 0.7823216
443
     Mahmoud's deid_ssn_mahmoud.py compares to Mahmoud's deid_date_mahmoud.py
444
         STS Benchmark Score is 0.7887121
445
     Mahmoud's deid_ssn_mahmoud.py compares to Mahmoud's deid_age_mahmoud.py
         STS Benchmark Score is 0.79113275
446
447
     Mahmoud's deid_ssn_mahmoud.py compares to ChenLin's deid-ChenLin.py
448
         STS Benchmark Score is 0.62773407
449
     Mahmoud's deid_ssn_mahmoud.py compares to ChenLin's deid.py
         STS Benchmark Score is 0.79823494
450
451
     Mahmoud's deid_date_mahmoud.py compares to Mahmoud's deid_age_mahmoud.py
         STS Benchmark Score is 0.81740725
452
453
     Mahmoud's deid_date_mahmoud.py compares to ChenLin's deid-ChenLin.py
454
         STS Benchmark Score is 0.67148453
455
     Mahmoud's deid_date_mahmoud.py compares to ChenLin's deid.py
         STS Benchmark Score is 0.8076922
456
457
     Mahmoud's deid_age_mahmoud.py compares to ChenLin's deid-ChenLin.py
458
         STS Benchmark Score is 0.6738554
459
     Mahmoud's deid_age_mahmoud.py compares to ChenLin's deid.py
460
         STS Benchmark Score is 0.8005177
     ChenLin's deid-ChenLin.py compares to ChenLin's deid.py
461
         STS Benchmark Score is 0.6855287
462
```

# **Conlcusion**

The average similarity percentage, which is tested by all methods, is above 50%. One of reasons is that all students use one programming language, which is Python. If students had used different programming languages, the average similarity percentage would have been below 50%. Therefore, the similarity scores which are showed in the result section do not represent the true similarity score between two Python files. The similarity checker should ignore the language usage and mainly focus on the algorithm and coding flow.