1. Turn in the indexed form of the query, and the top 5 documents for the query under both weighting schemes (you may build two different systems if you think that's simpler).
2. Query1 : what similarity laws must be obeyed when constructing aeroelastic models of heated high speed aircraft
3. Stemmed Query: aeroelast aircraft construct heat high law model must obei similar speed
4. Top Five document by W1
5. Rank : Weight : DocId Headline
6. 1 : 1.4746108327681355 : 51 : cranfield0051
7. 2 : 1.429728936353019 : 486 : cranfield0486
8. 3 : 1.2750640526006383 : 12 : cranfield0012
9. 4 : 1.2272853036373574 : 573 : cranfield0573
10. 5 : 1.1657830159921003 : 329 : cranfield0329
11. Top Five document by W2
12. Rank : Weight : DocId Headline
13. 1 : 3.7494713599566345 : 486 : cranfield0486
14. 2 : 3.5678217632725406 : 51 : cranfield0051
15. 3 : 3.108968021782709 : 329 : cranfield0329
16. 4 : 3.092608434081198 : 576 : cranfield0576
17. 5 : 3.0219598095101383 : 12 : cranfield0012
18. Query2 : what are the structural and aeroelastic problems associated with flight of high speed aircraft
19. Stemmed Query: aeroelast aircraft ar associ flight high problem speed structur
20. Top Five document by W1
21. Rank : Weight : DocId Headline
22. 1 : 1.6746424326164355 : 12 : cranfield0012
23. 2 : 1.2433801370851207 : 14 : cranfield0014
24. 3 : 1.1556264250248314 : 51 : cranfield0051
25. 4 : 1.122914718026367 : 141 : cranfield0141
26. 5 : 1.1035625441455834 : 1169 : cranfield1169
27. Top Five document by W2
28. Rank : Weight : DocId Headline
29. 1 : 4.422013497063758 : 12 : cranfield0012
30. 2 : 3.5848791670721964 : 172 : cranfield0172
31. 3 : 3.5805541204045 : 1380 : cranfield1380
32. 4 : 3.542376374234913 : 14 : cranfield0014
33. 5 : 3.256737763943511 : 746 : cranfield0746
34. Query3 : what problems of heat conduction in composite slabs have been solved so far
35. Stemmed Query: composit conduct far heat problem slab so solv
36. Top Five document by W1
37. Rank : Weight : DocId Headline
38. 1 : 1.4745347346206987 : 485 : cranfield0485
39. 2 : 1.2975152978875826 : 399 : cranfield0399
40. 3 : 1.2729463048484873 : 5 : cranfield0005
41. 4 : 1.269501523560074 : 1072 : cranfield1072
42. 5 : 1.2599885577580137 : 144 : cranfield0144
43. Top Five document by W2
44. Rank : Weight : DocId Headline
45. 1 : 3.1550562361973387 : 1072 : cranfield1072
46. 2 : 2.751692868748772 : 485 : cranfield0485
47. 3 : 2.7310315258061753 : 344 : cranfield0344
48. 4 : 2.6672169974027065 : 399 : cranfield0399
49. 5 : 2.666180925618699 : 5 : cranfield0005
50. Query4 : can a criterion be developed to show empirically the validity of flow solutions for chemically reacting gas mixtures based on the simplifying assumption of instantaneous local chemical equilibrium
51. Stemmed Query: assumpt base can chemic chemical criterion develop empir equilibrium flow ga instantan local mixtur react show simplifi solut to valid
52. Top Five document by W1
53. Rank : Weight : DocId Headline
54. 1 : 2.0646528044828156 : 488 : cranfield0488
55. 2 : 1.8397433065019035 : 1061 : cranfield1061
56. 3 : 1.7825347810781575 : 166 : cranfield0166
57. 4 : 1.5670565420350844 : 575 : cranfield0575
58. 5 : 1.5651760810873856 : 1374 : cranfield1374
59. Top Five document by W2
60. Rank : Weight : DocId Headline
61. 1 : 4.986465490005802 : 1061 : cranfield1061
62. 2 : 4.9649451773020346 : 1255 : cranfield1255
63. 3 : 4.764250126307067 : 166 : cranfield0166
64. 4 : 4.593083578010356 : 575 : cranfield0575
65. 5 : 4.483971031578996 : 24 : cranfield0024
66. Query5 : what chemical kinetic system is applicable to hypersonic aerodynamic problems
67. Stemmed Query: aerodynam applic chemic hyperson kinet problem system to
68. Top Five document by W1
69. Rank : Weight : DocId Headline
70. 1 : 0.9873340015377319 : 552 : cranfield0552
71. 2 : 0.9738175129615476 : 625 : cranfield0625
72. 3 : 0.9508858554398739 : 401 : cranfield0401
73. 4 : 0.9404652221664233 : 103 : cranfield0103
74. 5 : 0.9295853242881941 : 943 : cranfield0943
75. Top Five document by W2
76. Rank : Weight : DocId Headline
77. 1 : 3.086899609541108 : 625 : cranfield0625
78. 2 : 3.0727295580790255 : 401 : cranfield0401
79. 3 : 3.026865432054488 : 163 : cranfield0163
80. 4 : 2.747427162292598 : 552 : cranfield0552
81. 5 : 2.683400427490822 : 981 : cranfield0981
82. Query6 : what theoretical and experimental guides do we have as to turbulent couette flow behaviour
83. Stemmed Query: behaviour couett do experiment flow guid theoret to turbul we
84. Top Five document by W1
85. Rank : Weight : DocId Headline
86. 1 : 1.1587176778761912 : 798 : cranfield0798
87. 2 : 0.976998594303441 : 491 : cranfield0491
88. 3 : 0.9663576258032052 : 315 : cranfield0315
89. 4 : 0.8898975156501753 : 257 : cranfield0257
90. 5 : 0.8623352225956636 : 121 : cranfield0121
91. Top Five document by W2
92. Rank : Weight : DocId Headline
93. 1 : 3.1844486060689694 : 121 : cranfield0121
94. 2 : 3.017131965996609 : 798 : cranfield0798
95. 3 : 2.8227577835390254 : 491 : cranfield0491
96. 4 : 2.7265398900595987 : 257 : cranfield0257
97. 5 : 2.7079185678405873 : 287 : cranfield0287
98. Query7 : is it possible to relate the available pressure distributions for an ogive forebody at zero angle of attack to the lower surface pressures of an equivalent ogive forebody at angle of attack
99. Stemmed Query: angl angle at attack avail distribut equival forebodi forebody lower ogiv ogive possibl pressur pressures relat surfac to zero
100. Top Five document by W1
101. Rank : Weight : DocId Headline
102. 1 : 3.493128664872086 : 492 : cranfield0492
103. 2 : 1.9731386528995796 : 56 : cranfield0056
104. 3 : 1.868154436646253 : 1040 : cranfield1040
105. 4 : 1.7618295495191056 : 124 : cranfield0124
106. 5 : 1.7290259941320516 : 434 : cranfield0434
107. Top Five document by W2
108. Rank : Weight : DocId Headline
109. 1 : 7.866679442031705 : 492 : cranfield0492
110. 2 : 5.639100094897416 : 56 : cranfield0056
111. 3 : 5.47445284809558 : 122 : cranfield0122
112. 4 : 5.328100602125644 : 1040 : cranfield1040
113. 5 : 5.086228231946562 : 57 : cranfield0057
114. Query8 : what methods -dash exact or approximate -dash are presently available for predicting body pressures at angle of attack
115. Stemmed Query: angl approxim ar at attack avail bodi dash exact method predict present pressur
116. Top Five document by W1
117. Rank : Weight : DocId Headline
118. 1 : 1.2292804937804522 : 122 : cranfield0122
119. 2 : 1.1242099744161431 : 433 : cranfield0433
120. 3 : 1.1038445208739496 : 688 : cranfield0688
121. 4 : 1.0586866029471933 : 124 : cranfield0124
122. 5 : 1.0572137415133482 : 492 : cranfield0492
123. Top Five document by W2
124. Rank : Weight : DocId Headline
125. 1 : 5.287125937020626 : 122 : cranfield0122
126. 2 : 4.953358657467726 : 492 : cranfield0492
127. 3 : 4.802298106097251 : 124 : cranfield0124
128. 4 : 4.785148919062433 : 292 : cranfield0292
129. 5 : 4.42888022814573 : 248 : cranfield0248
130. Query9 : papers on internal /slip flow/ heat transfer studies
131. Stemmed Query: flow heat intern paper slip studi transfer
132. Top Five document by W1
133. Rank : Weight : DocId Headline
134. 1 : 0.9616169068141808 : 550 : cranfield0550
135. 2 : 0.7764558315978664 : 21 : cranfield0021
136. 3 : 0.7335591684317614 : 22 : cranfield0022
137. 4 : 0.731347622575895 : 45 : cranfield0045
138. 5 : 0.7155488563017516 : 1215 : cranfield1215
139. Top Five document by W2
140. Rank : Weight : DocId Headline
141. 1 : 3.297239866914391 : 550 : cranfield0550
142. 2 : 3.1565962086485437 : 45 : cranfield0045
143. 3 : 2.6524855998673087 : 270 : cranfield0270
144. 4 : 2.6353660733112574 : 549 : cranfield0549
145. 5 : 2.6069472595058736 : 489 : cranfield0489
146. Query10 : are real-gas transport properties for air available over a wide range of enthalpies and densities
147. Stemmed Query: air ar avail densiti enthalpi ga over properti rang real transport wide
148. Top Five document by W1
149. Rank : Weight : DocId Headline
150. 1 : 1.415560321319389 : 302 : cranfield0302
151. 2 : 1.195991010116457 : 493 : cranfield0493
152. 3 : 1.1816218800163119 : 1143 : cranfield1143
153. 4 : 1.0943308857873022 : 1010 : cranfield1010
154. 5 : 1.0896901454758479 : 1264 : cranfield1264
155. Top Five document by W2
156. Rank : Weight : DocId Headline
157. 1 : 3.9011807395324407 : 302 : cranfield0302
158. 2 : 3.663035705993948 : 493 : cranfield0493
159. 3 : 3.5838796817787792 : 1264 : cranfield1264
160. 4 : 3.246925073280287 : 583 : cranfield0583
161. 5 : 3.222839299385678 : 332 : cranfield0332
162. Query11 : is it possible to find an analytical, similar solution of the strong blast wave problem in the newtonian approximation
163. Stemmed Query: analyt approxim blast find newtonian possibl problem similar solut strong to wave
164. Top Five document by W1
165. Rank : Weight : DocId Headline
166. 1 : 1.570146062068722 : 495 : cranfield0495
167. 2 : 1.297898257154932 : 25 : cranfield0025
168. 3 : 1.2146759226395614 : 262 : cranfield0262
169. 4 : 1.1840536234421037 : 472 : cranfield0472
170. 5 : 1.1666112451571142 : 572 : cranfield0572
171. Top Five document by W2
172. Rank : Weight : DocId Headline
173. 1 : 4.4186929711799205 : 495 : cranfield0495
174. 2 : 3.9522959345727076 : 572 : cranfield0572
175. 3 : 3.6195105631151594 : 72 : cranfield0072
176. 4 : 3.526819347569334 : 110 : cranfield0110
177. 5 : 3.4970064672095247 : 1280 : cranfield1280
178. Query12 : how can the aerodynamic performance of channel flow ground effect machines be calculated
179. Stemmed Query: aerodynam calcul can channel effect flow ground machin perform
180. Top Five document by W1
181. Rank : Weight : DocId Headline
182. 1 : 1.5238713815842315 : 624 : cranfield0624
183. 2 : 1.157399337092765 : 650 : cranfield0650
184. 3 : 1.0248250188053125 : 966 : cranfield0966
185. 4 : 0.9987585525907385 : 506 : cranfield0506
186. 5 : 0.9003245650454251 : 631 : cranfield0631
187. Top Five document by W2
188. Rank : Weight : DocId Headline
189. 1 : 4.201683951719489 : 624 : cranfield0624
190. 2 : 3.2027482784051378 : 966 : cranfield0966
191. 3 : 3.042545880590836 : 792 : cranfield0792
192. 4 : 2.9995846619197963 : 917 : cranfield0917
193. 5 : 2.999027813235291 : 650 : cranfield0650
194. Query13 : what is the basic mechanism of the transonic aileron buzz
195. Stemmed Query: aileron basic buzz mechan transon
196. Top Five document by W1
197. Rank : Weight : DocId Headline
198. 1 : 1.8660170309261863 : 496 : cranfield0496
199. 2 : 1.2847104878339601 : 520 : cranfield0520
200. 3 : 1.2588644455148483 : 903 : cranfield0903
201. 4 : 1.241861020194422 : 643 : cranfield0643
202. 5 : 1.0859699685241795 : 199 : cranfield0199
203. Top Five document by W2
204. Rank : Weight : DocId Headline
205. 1 : 2.566482165886624 : 496 : cranfield0496
206. 2 : 2.181607459797612 : 903 : cranfield0903
207. 3 : 2.141634787833167 : 520 : cranfield0520
208. 4 : 1.5720532298200722 : 313 : cranfield0313
209. 5 : 1.5680669452148572 : 880 : cranfield0880
210. Query14 : papers on shock-sound wave interaction
211. Stemmed Query: interact paper shock sound wave
212. Top Five document by W1
213. Rank : Weight : DocId Headline
214. 1 : 1.1892563945960528 : 64 : cranfield0064
215. 2 : 0.876069238220677 : 296 : cranfield0296
216. 3 : 0.8463353072283415 : 335 : cranfield0335
217. 4 : 0.8414283686499741 : 132 : cranfield0132
218. 5 : 0.819465647843401 : 439 : cranfield0439
219. Top Five document by W2
220. Rank : Weight : DocId Headline
221. 1 : 2.607145378910989 : 64 : cranfield0064
222. 2 : 2.382557605870233 : 439 : cranfield0439
223. 3 : 2.3623443690134707 : 1303 : cranfield1303
224. 4 : 2.3198292950910395 : 170 : cranfield0170
225. 5 : 2.2990268527027684 : 1327 : cranfield1327
226. Query15 : material properties of photoelastic materials
227. Stemmed Query: materi materials photoelast properti
228. Top Five document by W1
229. Rank : Weight : DocId Headline
230. 1 : 1.062985312940025 : 462 : cranfield0462
231. 2 : 1.041129944097921 : 463 : cranfield0463
232. 3 : 1.0160043534602414 : 1065 : cranfield1065
233. 4 : 0.9252901410119396 : 866 : cranfield0866
234. 5 : 0.8807976256546479 : 761 : cranfield0761
235. Top Five document by W2
236. Rank : Weight : DocId Headline
237. 1 : 2.1070303141928033 : 463 : cranfield0463
238. 2 : 2.0631480250427088 : 1065 : cranfield1065
239. 3 : 2.061613728093572 : 462 : cranfield0462
240. 4 : 1.6585468970622723 : 761 : cranfield0761
241. 5 : 1.6429670904624483 : 1096 : cranfield1096
242. Query16 : can the transverse potential flow about a body of revolution be calculated efficiently by an electronic computer
243. Stemmed Query: about bodi calcul can comput effici electron flow potenti revolut transvers
244. Top Five document by W1
245. Rank : Weight : DocId Headline
246. 1 : 1.4140630504370655 : 498 : cranfield0498
247. 2 : 1.1263745233726534 : 1255 : cranfield1255
248. 3 : 1.019660963202014 : 869 : cranfield0869
249. 4 : 1.0104906045274076 : 976 : cranfield0976
250. 5 : 0.9667224015883105 : 927 : cranfield0927
251. Top Five document by W2
252. Rank : Weight : DocId Headline
253. 1 : 4.21919463272766 : 498 : cranfield0498
254. 2 : 3.7352730550859037 : 1255 : cranfield1255
255. 3 : 3.435414077562644 : 927 : cranfield0927
256. 4 : 3.1585204386564922 : 231 : cranfield0231
257. 5 : 3.1492700858951643 : 266 : cranfield0266
258. Query17 : can the three-dimensional problem of a transverse potential flow about a body of revolution be reduced to a two-dimensional problem
259. Stemmed Query: about bodi can dimension dimensional flow potenti problem reduc revolut three to transvers two
260. Top Five document by W1
261. Rank : Weight : DocId Headline
262. 1 : 1.3319468450048186 : 1108 : cranfield1108
263. 2 : 1.2510580664138693 : 373 : cranfield0373
264. 3 : 1.1619392329368892 : 1281 : cranfield1281
265. 4 : 1.1508846785507092 : 700 : cranfield0700
266. 5 : 1.086074203192653 : 1235 : cranfield1235
267. Top Five document by W2
268. Rank : Weight : DocId Headline
269. 1 : 4.935147253120844 : 1108 : cranfield1108
270. 2 : 4.824769497803816 : 373 : cranfield0373
271. 3 : 4.498550238618823 : 1281 : cranfield1281
272. 4 : 4.459769356876392 : 1301 : cranfield1301
273. 5 : 4.406550749809584 : 801 : cranfield0801
274. Query18 : are experimental pressure distributions on bodies of revolution at angle of attack available
275. Stemmed Query: angl ar at attack avail bodi distribut experiment pressur revolut
276. Top Five document by W1
277. Rank : Weight : DocId Headline
278. 1 : 0.9607444083765517 : 225 : cranfield0225
279. 2 : 0.9396105599402864 : 197 : cranfield0197
280. 3 : 0.9241406477315857 : 124 : cranfield0124
281. 4 : 0.9145382482720087 : 234 : cranfield0234
282. 5 : 0.9143993402616708 : 498 : cranfield0498
283. Top Five document by W2
284. Rank : Weight : DocId Headline
285. 1 : 4.371331447684407 : 498 : cranfield0498
286. 2 : 4.303034479422282 : 225 : cranfield0225
287. 3 : 4.301385205783372 : 234 : cranfield0234
288. 4 : 4.251582741683072 : 927 : cranfield0927
289. 5 : 4.005290243130432 : 248 : cranfield0248
290. Query19 : does there exist a good basic treatment of the dynamics of re-entry combining consideration of realistic effects with relative simplicity of results
291. Stemmed Query: basic combin consider doe dynam effect entri exist good re realist rel result simplic treatment
292. Top Five document by W1
293. Rank : Weight : DocId Headline
294. 1 : 1.377656993759716 : 82 : cranfield0082
295. 2 : 1.1439851616299 : 453 : cranfield0453
296. 3 : 1.1185274398569482 : 274 : cranfield0274
297. 4 : 1.088254680718274 : 140 : cranfield0140
298. 5 : 0.982632315790992 : 706 : cranfield0706
299. Top Five document by W2
300. Rank : Weight : DocId Headline
301. 1 : 3.274037090356493 : 82 : cranfield0082
302. 2 : 3.221742791612811 : 453 : cranfield0453
303. 3 : 3.187353561822048 : 274 : cranfield0274
304. 4 : 3.157958192120985 : 140 : cranfield0140
305. 5 : 3.0367864682169277 : 927 : cranfield0927
306. Query20 : has anyone formally determined the influence of joule heating, produced by the induced current, in magnetohydrodynamic free convection flows under general conditions
307. Stemmed Query: anyon condit convect current determin flow formal free gener ha heat induc influenc joul magnetohydrodynam produc under
308. Top Five document by W1
309. Rank : Weight : DocId Headline
310. 1 : 1.7607060884081047 : 500 : cranfield0500
311. 2 : 1.388542857567666 : 268 : cranfield0268
312. 3 : 1.2929274093392686 : 88 : cranfield0088
313. 4 : 1.2440493641650558 : 270 : cranfield0270
314. 5 : 1.1869984205289041 : 44 : cranfield0044
315. Top Five document by W2
316. Rank : Weight : DocId Headline
317. 1 : 4.441444789586794 : 500 : cranfield0500
318. 2 : 4.385614019672247 : 44 : cranfield0044
319. 3 : 4.266070706465505 : 268 : cranfield0268
320. 4 : 4.151898266096829 : 88 : cranfield0088
321. 5 : 3.953657432915611 : 416 : cranfield0416

2. Indicate the rank, score, external document identifier, and headline, for each of the top 5 documents for each query. (5 points)

As Indicated above, Top 5 documents for each weighs are displayed for all the queries

3. Identify which documents you think are relevant and non-relevant for each query. (10 points)

Query1 : what similarity laws must be obeyed when constructing aeroelastic models of heated high speed aircraft

Stemmed Query: aeroelast aircraft construct heat high law model must obei similar speed

Relevant:51,486,12, 329,

NonRelevant : 573, 576

Query2 : what are the structural and aeroelastic problems associated with flight of high speed aircraft

Stemmed Query: aeroelast aircraft ar associ flight high problem speed structur

12,14,51,141,1169,172,1380,746

Relevant:12,172,746,1380

Non-Relevant:14,51,141,1169

Query3 : what problems of heat conduction in composite slabs have been solved so far

Stemmed Query: composit conduct far heat problem slab so solv

485,399,5,1072,144,344

Relevant:485,5,144,399,

Non-Relevant:1072,344

Query4 : can a criterion be developed to show empirically the validity of flow solutions for chemically reacting gas mixtures based on the simplifying assumption of instantaneous local chemical equilibrium

Stemmed Query: assumpt base can chemic chemical criterion develop empir equilibrium flow ga instantan local mixtur react show simplifi solut to valid

488,1061,166,575,1374,1255,24

Relevant: 1061,166,488

Non-Relevant:575,1374,24,1255,

Query5 : what chemical kinetic system is applicable to hypersonic aerodynamic problems

Stemmed Query: aerodynam applic chemic hyperson kinet problem system to

525,625,401,103,943,163,981

Relevant Docs: 401, 552

Non-Relevant Docs:625,103,943,163,981,

Query6 : what theoretical and experimental guides do we have as to turbulent couette flow behaviour

Stemmed Query: behaviour couett do experiment flow guid theoret to turbul we

798,491,315,257,121,287

Relevant Docs: 257,798,491,315

Non-Relevant Docs:121,287

Query7 : is it possible to relate the available pressure distributions for an ogive forebody at zero angle of attack to the lower surface pressures of an equivalent ogive forebody at angle of attack

Stemmed Query: angl angle at attack avail distribut equival forebodi forebody lower ogiv ogive possibl pressur pressures relat surfac to zero

492,56,1040,124,434,122,57

Relevant Docs:492,122,124,56,

Non Relavant:57,1040,434,

Query8 : what methods -dash exact or approximate -dash are presently available for predicting body pressures at angle of attack

Stemmed Query: angl approxim ar at attack avail bodi dash exact method predict present pressur

122,433,688,124,492,292,248

Relevant: 122,124,492

Non Relevant:433,688,292,248

Query9 : papers on internal /slip flow/ heat transfer studies

Stemmed Query: flow heat intern paper slip studi transfer

550,21,22,45,1215,270,549,489

Relevant: 550,21,22,270

Non-Relevant: 45,1215,549,489

Query10 : are real-gas transport properties for air available over a wide range of enthalpies and densities

Stemmed Query: air ar avail densiti enthalpi ga over properti rang real transport wide

302,493,1143,1010,1264,583,332

Relevant:493,302,332

Non-Relevant: 1143,1010,1264,583

Query11 : is it possible to find an analytical, similar solution of the strong blast wave problem in the newtonian approximation

Stemmed Query: analyt approxim blast find newtonian possibl problem similar solut strong to wave

495,25,262,472,572,72,110,1280

Relevant:495,572,262

NonRelevant:25,472,72,110,1280

Query12 : how can the aerodynamic performance of channel flow ground effect machines be calculated

Stemmed Query: aerodynam calcul can channel effect flow ground machin perform

624,650,966,506,631,792,917,650

Relevant: 624,966

Non-Relevant: 650,506,631,792,917,650

Query13 : what is the basic mechanism of the transonic aileron buzz

Stemmed Query: aileron basic buzz mechan transom

496,520,903,643,199,313,880

Relevant:496

Non-Relevant: 520,903,643,199,313,880

Query14 : papers on shock-sound wave interaction

Stemmed Query: interact paper shock sound wave

64,296,335,132,439,1303,170,1327

Relevant: 64,170,132

Non-Relevant:296,335,439,1303,1327

Query15 : material properties of photoelastic materials

Stemmed Query: materi materials photoelast property

462,463,1065,866,761,1096

Relevant: 462,463

Non-Relevant: 1065,866,761,1096

Query16 : can the transverse potential flow about a body of revolution be calculated efficiently by an electronic computer

Stemmed Query: about bodi calcul can comput effici electron flow potenti revolut transvers

498,1255,869,976,927,231,266

Relevant:498,1255,927

NonRelevant:869,266,231,927

Query17 : can the three-dimensional problem of a transverse potential flow about a body of revolution be reduced to a two-dimensional problem

Stemmed Query: about bodi can dimension dimensional flow potenti problem reduc revolut three to transvers two

1108,373,1281,700,1235,1301,801

Relevant:1281

Non-Relevant:1108,373,700,1235,1301,801

Query18 : are experimental pressure distributions on bodies of revolution at angle of attack available

Stemmed Query: angl ar at attack avail bodi distribut experiment pressur revolut

225,197,124,234,498,927,248

Relevant: 197,927

Non-Relevant: 225,124,234,498,248

Query19 : does there exist a good basic treatment of the dynamics of re-entry combining consideration of realistic effects with relative simplicity of results

Stemmed Query: basic combin consider doe dynam effect entri exist good re realist rel result simplic treatment

82,453,274,140,706,927

Relevant:

Non-Relevant: 82,453,274,140,927,706

Query20 : has anyone formally determined the influence of joule heating, produced by the induced current, in magnetohydrodynamic free convection flows under general conditions

Stemmed Query: anyon condit convect current determin flow formal free gener ha heat induc influenc joul magnetohydrodynam produc under

500,268,88,270,44,416

Relevant: 500

Non-Relevant:268,88,270,44,416

4. Describe why the top-ranked non-relevant document for each query did not get a lower score. (5 points)

The Index is built based on the document frequency and term frequency. So though the keywords occurr in the document, they do not represent significant meaning.

For Example, if the query is “good basic treatment of the dynamics” then we may get results for all the “BAD” basic treatments since other keywords match and increases frequency.

5. Briefly discuss the different affects you notice with the two weighting schemes, either on a query-by-query basis or overall, whichever is most illuminating. For example, you can point out that the weighting scheme seems to be working for this query as well as a list of other queries, but not for some other queries you have noticed. Try to explain why it works and why it does not work.(5 points)

As we can see, the weighing schemes work well for 1,2,3,6,7 whereas for query 19, we do not get any relevant results and non-relevant results are more compared to relevant queries for rest of the queries.

6. Describe the design decisions you made in building your ranking system. (5 points)

Datastructures & Algorithms used:

A) Hash Map is used to store all the tokens and stemmed tokens.

B) An ArraList is used for computing distinct words in each file of cranfield directory.

C) Stemmer algorithm to stem the words for 2nd vesion.

d) Stopword List is used to remove stopword (path to file containing stopwords should be provided by user)

The Index is built in the same way as it is done for the HW2. And the new Class called Query handler is implemented which processes the query and builds result Table. All the queries are processed by removing stop-words and stemming the resulting query

2 result tables namely W1 and W2 are built using different methodologies as follows.

W1 = (0.4 + 0.6 \* log (tf + 0.5) / log (maxtf + 1.0))

\* (log (collectionsize / df)/ log (collectionsize))

W2 = (0.4 + 0.6 \* (tf / (tf + 0.5 + 1.5 \*

(doclen / avgdoclen))) \* log (collectionsize / df)/

log (collectionsize))

tf: the frequency of the term in the document,

maxtf: the frequency of the most frequent indexed

term in the document,

df: the number of documents containing the

term,

doclen: the length of the document, in words,

discounting stop-words, - you may use the same stopword list as

in the previous homework;

avgdoclen: the average document length in the

collection, considering the doclen of each document, and

collectionsize: the number of documents in the collection.