	Note finale	TOTAL	Exercice 1 Triggers	1.1	1.2	1.3	1.4	1.5	1.6	1.7	Exercice 2 PL/pgSQL	création	PL/pgSQL	Exercice 3 Transactions	3.1	3.2	3.3	3.4	Exercice 4 Grandeur	4.1	4.2	4.3	4.4	Exercice 5 Indexation	Index	Justification	Exercice 6 Cours	6.1	6.2	6.3	6.4	6.5	Exercice 7 Sérialisabilité	7.1	7.2	Exercice 8 Concurrence	question	choix	Exercice 9 Arbres B+	9.1	9.2	9.3	9.4	9.5
Barème	**23.0**	**27.0**	**5**	1	1	2	1	1	1	1	**4**	1	4	**3.0**	1	3	2	1	**2**	1	1	1	1	**2**	1	3	**2**	1	1	1	1	1	**3**	1	1	**2**	1	0	**4**	1	1	1	1	1
172835	**15.9**	**18.7**	**3.3**	4.0	4.0	4.0	0.0	4.0	4.0	0.0	**0.8**	4.0	0.0	**3.0**	4.0	4.0	4.0	4.0	**1.3**	4.0	2.0	0.0	4.0	**2.0**	4.0	4.0	**1.6**	4.0	4.0	2.0	2.0	4.0	**1.5**	2.0	2.0	**2.0**	4.0	E	**3.2**	4.0	4.0	4.0	0.0	4.0
178479	**6.2**	**7.3**	**1.7**	0.0	4.0	X	0.0	4.0	4.0	0.0	**0.0**	X	X	**0.0**	0.0	X	0.0	0.0	**1.0**	4.0	4.0	0.0	0.0	**0.0**	X	X	**0.8**	0.0	4.0	4.0	0.0	X	**2.3**	2.0	4.0	**0.0**	X	X	**1.6**	4.0	0.0	0.0	4.0	0.0
180638	**0.7**	**0.8**	**0.0**	X	X	X	X	X	X	X	**0.0**	X	X	**0.0**	0.0	0.0	X	0.0	**0.0**	X	X	X	X	**0.0**	X	X	**0.0**	X	X	X	X	X	**0.0**	X	X	**0.0**	X	X	**0.8**	4.0	0.0	0.0	0.0	0.0
180720	**5.1**	**6.0**	**1.0**	2.0	X	0.0	X	4.0	1.0	X	**0.0**	X	X	**0.0**	X	X	X	X	**1.3**	2.0	4.0	4.0	X	**0.0**	X	X	**0.0**	X	X	X	X	0.0	**3.0**	4.0	4.0	**0.0**	X	X	**0.8**	4.0	0.0	0.0	0.0	0.0
183651	**8.3**	**9.7**	**3.3**	0.0	2.0	3.0	0.0	4.0	4.0	4.0	**2.4**	4.0	2.0	**0.0**	X	X	X	X	**1.0**	4.0	4.0	0.0	X	**0.0**	X	X	**0.6**	X	2.0	X	X	4.0	**0.0**	X	X	**0.0**	X	X	**2.4**	4.0	4.0	0.0	0.0	4.0
184539	**0.0**	**0.0**	**0.0**	X	X	X	X	X	X	X	**0.0**	X	X	**0.0**	X	X	X	X	**0.0**	X	X	X	X	**0.0**	X	X	**0.0**	X	X	X	X	X	**0.0**	X	X	**0.0**	X	X	**0.0**	X	X	X	X	X
185177	**12.9**	**15.1**	**3.9**	0.0	4.0	4.0	0.0	4.0	4.0	4.0	**3.2**	4.0	3.0	**0.0**	0.0	0.0	0.0	0.0	**1.0**	0.0	4.0	4.0	0.0	**0.0**	0.0	0.0	**0.6**	0.0	2.0	4.0	0.0	0.0	**2.3**	2.0	4.0	**1.0**	2.0	E	**3.2**	4.0	4.0	4.0	0.0	4.0
185355	**8.9**	**10.5**	**1.4**	0.0	0.0	2.0	0.0	4.0	X	1.0	**0.0**	0.0	0.0	**2.1**	2.0	2.0	4.0	4.0	**0.8**	2.0	0.0	4.0	0.0	**0.0**	X	X	**0.8**	4.0	X	4.0	0.0	X	**3.0**	4.0	4.0	**0.0**	X	X	**2.4**	4.0	4.0	4.0	0.0	0.0
185508	**9.7**	**11.3**	**2.5**	4.0	4.0	1.0	0.0	4.0	4.0	X	**0.0**	X	X	**2.7**	4.0	3.0	4.0	4.0	**0.5**	0.0	4.0	0.0	0.0	**0.0**	0.0	0.0	**1.0**	4.0	2.0	4.0	0.0	0.0	**2.3**	2.0	4.0	**0.0**	0.0	V	**2.4**	4.0	4.0	4.0	0.0	X
185740	**9.2**	**10.8**	**2.5**	2.0	0.0	3.0	0.0	4.0	4.0	1.0	**2.0**	4.0	1.5	**0.0**	X	0.0	0.0	0.0	**1.0**	2.0	0.0	4.0	2.0	**0.0**	0.0	0.0	**0.4**	X	X	4.0	0.0	X	**1.5**	4.0	0.0	**1.0**	2.0	E	**2.4**	4.0	0.0	4.0	0.0	4.0
185791	**11.0**	**12.9**	**2.2**	2.0	0.0	3.0	0.0	4.0	4.0	X	**2.0**	4.0	1.5	**0.0**	0.0	0.0	X	0.0	**1.5**	4.0	0.0	4.0	4.0	**0.0**	0.0	0.0	**0.4**	X	X	4.0	0.0	0.0	**3.0**	4.0	4.0	**1.0**	2.0	E	**2.8**	4.0	2.0	4.0	0.0	4.0
185880	**9.3**	**11.0**	**2.4**	0.0	4.0	2.0	0.0	1.0	4.0	2.0	**3.6**	4.0	3.5	**0.6**	0.0	2.0	0.0	0.0	**0.8**	0.0	4.0	0.0	2.0	**0.0**	0.0	0.0	**0.4**	X	X	4.0	X	X	**0.0**	X	X	**0.0**	X	X	**3.2**	4.0	4.0	4.0	0.0	4.0
187419	**9.8**	**11.5**	**3.3**	0.0	0.0	4.0	0.0	4.0	4.0	4.0	**1.2**	4.0	0.5	**0.8**	4.0	1.0	X	X	**1.0**	4.0	4.0	0.0	X	**0.0**	X	X	**0.6**	X	2.0	4.0	0.0	X	**2.3**	2.0	4.0	**0.0**	X	X	**2.4**	4.0	4.0	4.0	0.0	0.0
187873	**5.1**	**5.9**	**0.8**	2.0	0.0	X	0.0	4.0	X	0.0	**3.2**	4.0	3.0	**1.0**	0.0	3.0	0.0	0.0	**0.8**	2.0	0.0	4.0	0.0	**0.0**	X	X	**0.2**	X	X	X	2.0	X	**0.0**	X	X	**0.0**	X	X	**0.0**	0.0	X	X	X	X
188511	**12.4**	**14.6**	**2.9**	0.0	0.0	4.0	0.0	1.0	4.0	4.0	**2.4**	4.0	2.0	**1.8**	4.0	3.0	0.0	4.0	**1.3**	2.0	4.0	4.0	0.0	**0.0**	0.0	0.0	**0.8**	0.0	0.0	4.0	0.0	4.0	**3.0**	4.0	4.0	**0.0**	0.0	V	**2.4**	4.0	4.0	0.0	0.0	4.0
188520	**14.1**	**16.6**	**3.8**	1.0	4.0	4.0	0.0	4.0	2.0	4.0	**2.4**	4.0	2.0	**2.1**	2.0	2.0	4.0	4.0	**0.5**	0.0	0.0	4.0	0.0	**0.0**	X	X	**0.8**	X	4.0	4.0	X	X	**3.0**	4.0	4.0	**0.0**	X	X	**4.0**	4.0	4.0	4.0	4.0	4.0
190122	**3.3**	**3.9**	**0.0**	X	X	X	X	X	X	X	**0.0**	X	X	**0.0**	X	X	X	X	**0.0**	X	X	X	X	**0.0**	X	X	**1.2**	2.0	2.0	4.0	0.0	4.0	**1.9**	1.0	4.0	**0.0**	0.0	E	**0.8**	4.0	0.0	0.0	0.0	0.0
192764	**9.8**	**11.5**	**1.1**	1.0	0.0	2.0	0.0	3.0	X	X	**0.8**	4.0	0.0	**1.9**	4.0	3.2	0.0	4.0	**1.9**	3.0	4.0	4.0	4.0	**1.3**	4.0	2.0	**0.4**	X	0.0	4.0	0.0	0.0	**0.8**	2.0	0.0	**1.0**	2.0	E	**2.4**	4.0	4.0	0.0	0.0	4.0
192791	**9.6**	**11.3**	**2.5**	2.0	0.0	4.0	X	4.0	0.0	2.0	**0.8**	4.0	0.0	**0.4**	4.0	0.0	X	X	**0.3**	2.0	0.0	0.0	X	**0.0**	0.0	0.0	**0.8**	X	X	4.0	0.0	4.0	**1.5**	2.0	2.0	**1.0**	2.0	E	**4.0**	4.0	4.0	4.0	4.0	4.0
194478	**17.8**	**20.8**	**3.9**	X	4.0	4.0	0.0	4.0	4.0	4.0	**2.0**	4.0	1.5	**3.0**	4.0	4.0	4.0	4.0	**1.5**	4.0	4.0	4.0	0.0	**1.3**	4.0	2.0	**1.0**	X	2.0	4.0	X	4.0	**3.0**	4.0	4.0	**2.0**	4.0	E	**3.2**	4.0	4.0	4.0	0.0	4.0
194608	**11.9**	**13.9**	**2.2**	0.0	4.0	1.0	0.0	4.0	4.0	1.0	**0.8**	0.0	1.0	**2.7**	4.0	3.0	4.0	4.0	**1.1**	2.0	4.0	3.0	0.0	**0.0**	0.0	0.0	**0.4**	X	0.0	4.0	X	0.0	**1.5**	0.0	4.0	**2.0**	4.0	E	**3.2**	4.0	4.0	4.0	4.0	0.0
194842	**5.8**	**6.8**	**1.8**	2.0	3.0	1.0	0.0	4.0	X	1.0	**0.8**	4.0	0.0	**3.0**	4.0	4.0	4.0	4.0	**0.4**	3.0	0.0	0.0	X	**0.0**	0.0	X	**0.0**	X	X	X	X	X	**0.0**	0.0	0.0	**0.0**	X	X	**0.8**	4.0	0.0	0.0	X	X
196623	**10.1**	**11.9**	**2.8**	0.0	4.0	2.0	0.0	4.0	2.0	3.0	**2.4**	4.0	2.0	**0.0**	0.0	0.0	0.0	0.0	**1.9**	3.0	4.0	4.0	4.0	**0.0**	0.0	0.0	**1.0**	4.0	0.0	4.0	X	2.0	**3.0**	4.0	4.0	**0.0**	X	X	**0.8**	4.0	0.0	0.0	0.0	0.0
197451	**7.0**	**8.3**	**2.8**	2.0	4.0	3.0	0.0	4.0	4.0	X	**2.4**	4.0	2.0	**0.4**	4.0	0.0	0.0	0.0	**1.3**	2.0	4.0	4.0	0.0	**0.0**	0.0	0.0	**0.6**	0.0	2.0	4.0	X	0.0	**0.8**	0.0	0.0	**0.0**	X	X	**0.8**	4.0	0.0	0.0	X	X
197784	**14.8**	**17.3**	**3.3**	0.0	0.0	4.0	0.0	4.0	4.0	4.0	**2.8**	4.0	2.5	**2.1**	2.0	2.0	4.0	4.0	**1.8**	4.0	2.0	4.0	4.0	**0.5**	4.0	0.0	**1.0**	X	4.0	4.0	0.0	2.0	**3.0**	4.0	4.0	**0.0**	X	X	**2.8**	4.0	4.0	2.0	0.0	4.0
197841	**10.8**	**12.7**	**3.8**	2.0	3.0	3.0	0.0	4.0	4.0	4.0	**1.6**	4.0	1.0	**0.8**	4.0	1.0	0.0	0.0	**1.5**	4.0	4.0	4.0	0.0	**0.0**	0.0	0.0	**0.4**	X	2.0	2.0	0.0	0.0	**2.3**	4.0	2.0	**0.0**	X	X	**2.4**	4.0	0.0	4.0	0.0	4.0
198249	**11.0**	**12.9**	**2.2**	2.0	4.0	1.0	0.0	4.0	4.0	0.0	**1.6**	4.0	1.0	**0.8**	4.0	1.0	0.0	0.0	**1.0**	4.0	0.0	4.0	0.0	**0.0**	0.0	0.0	**0.4**	X	X	4.0	0.0	0.0	**2.3**	2.0	4.0	**1.5**	3.0	E	**3.2**	4.0	4.0	4.0	0.0	4.0
198705	**8.6**	**10.1**	**1.1**	0.0	2.0	0.0	0.0	4.0	0.0	1.0	**2.0**	4.0	1.5	**0.0**	0.0	0.0	0.0	0.0	**0.8**	2.0	4.0	0.0	0.0	**0.0**	X	X	**0.4**	X	0.0	4.0	X	0.0	**2.6**	3.0	4.0	**0.0**	X	X	**3.2**	4.0	4.0	4.0	0.0	4.0
198988	**10.2**	**12.0**	**3.2**	0.0	3.0	3.0	0.0	4.0	4.0	3.0	**1.6**	2.0	1.5	**1.1**	4.0	2.0	0.0	0.0	**1.5**	4.0	4.0	4.0	0.0	**0.0**	X	X	**0.0**	X	X	X	X	X	**2.3**	2.0	4.0	**0.0**	X	X	**2.4**	4.0	4.0	0.0	4.0	0.0
199291	**19.4**	**22.7**	**3.9**	0.0	4.0	4.0	0.0	4.0	4.0	4.0	**3.6**	4.0	3.5	**2.7**	4.0	3.0	4.0	4.0	**2.0**	4.0	4.0	4.0	4.0	**2.0**	4.0	4.0	**0.8**	X	4.0	4.0	X	0.0	**2.3**	4.0	2.0	**1.5**	3.0	E	**4.0**	4.0	4.0	4.0	4.0	4.0
199393	**7.1**	**8.3**	**1.4**	0.0	X	1.0	X	4.0	X	2.0	**0.0**	X	X	**0.9**	0.0	0.0	4.0	0.0	**0.0**	0.0	X	X	X	**0.0**	X	X	**0.4**	0.0	2.0	2.0	0.0	X	**2.3**	2.0	4.0	**1.0**	2.0	E	**2.4**	4.0	4.0	4.0	0.0	X
199501	**6.4**	**7.5**	**1.9**	2.0	0.0	0.0	0.0	4.0	0.0	4.0	**1.6**	4.0	1.0	**0.4**	2.0	0.0	0.0	2.0	**0.5**	4.0	0.0	X	X	**0.0**	X	X	**0.6**	X	2.0	4.0	X	0.0	**0.0**	X	X	**0.0**	X	X	**2.4**	4.0	4.0	0.0	4.0	0.0
199664	**10.1**	**11.9**	**3.9**	4.0	2.0	4.0	0.0	4.0	4.0	3.0	**0.0**	X	0.0	**0.4**	4.0	X	X	X	**1.5**	2.0	4.0	4.0	2.0	**0.0**	X	X	**1.0**	0.0	2.0	4.0	0.0	4.0	**2.3**	4.0	2.0	**0.0**	X	X	**2.8**	4.0	4.0	2.0	0.0	4.0
199716	**17.6**	**20.7**	**3.3**	4.0	4.0	2.0	0.0	4.0	4.0	2.0	**2.4**	4.0	2.0	**2.6**	0.0	4.0	4.0	4.0	**1.0**	2.0	4.0	0.0	2.0	**2.0**	4.0	4.0	**1.2**	X	4.0	4.0	0.0	4.0	**3.0**	4.0	4.0	**2.0**	4.0	E	**3.2**	4.0	4.0	4.0	0.0	4.0
199850	**0.0**	**0.0**	**0.0**	X	X	X	X	X	X	X	**0.0**	X	X	**0.0**	X	X	X	X	**0.0**	X	X	X	X	**0.0**	X	X	**0.0**	X	X	X	X	X	**0.0**	X	X	**0.0**	X	X	**0.0**	X	X	X	X	X
200186	**14.6**	**17.1**	**3.5**	2.0	3.0	3.0	0.0	4.0	4.0	3.0	**2.0**	4.0	1.5	**2.0**	4.0	1.0	4.0	4.0	**1.4**	3.0	4.0	4.0	0.0	**0.0**	0.0	0.0	**0.0**	X	X	X	0.0	X	**3.0**	4.0	4.0	**2.0**	4.0	E	**3.2**	4.0	4.0	4.0	4.0	0.0
200789	**12.5**	**14.7**	**3.2**	4.0	3.0	2.0	0.0	4.0	4.0	2.0	**1.6**	4.0	1.0	**1.9**	0.0	2.0	4.0	4.0	**1.0**	0.0	4.0	4.0	0.0	**0.5**	4.0	0.0	**0.4**	X	X	2.0	X	2.0	**1.9**	1.0	4.0	**1.0**	2.0	E	**3.2**	4.0	4.0	4.0	0.0	4.0
200894	**6.2**	**7.3**	**2.2**	0.0	4.0	0.0	0.0	4.0	4.0	2.0	**0.0**	0.0	0.0	**0.8**	4.0	1.0	0.0	0.0	**1.5**	2.0	4.0	4.0	2.0	**0.0**	0.0	0.0	**0.4**	X	0.0	4.0	0.0	0.0	**0.0**	X	X	**0.0**	X	X	**2.4**	4.0	4.0	0.0	0.0	4.0
203909	**9.2**	**10.8**	**4.4**	4.0	4.0	4.0	0.0	4.0	4.0	4.0	**3.2**	4.0	3.0	**0.4**	4.0	0.0	0.0	0.0	**0.8**	4.0	2.0	X	X	**0.0**	0.0	0.0	**0.4**	0.0	0.0	4.0	0.0	0.0	**0.0**	0.0	0.0	**0.0**	X	E	**1.6**	4.0	4.0	0.0	0.0	0.0
205176	**14.3**	**16.8**	**4.2**	4.0	2.0	4.0	0.0	4.0	4.0	4.0	**4.0**	4.0	4.0	**2.3**	2.0	3.0	4.0	2.0	**1.5**	4.0	4.0	4.0	X	**0.0**	X	X	**1.0**	X	2.0	4.0	0.0	4.0	**1.5**	X	4.0	**0.0**	X	X	**2.4**	4.0	4.0	0.0	0.0	4.0
205236	**10.1**	**11.9**	**2.4**	1.0	2.0	3.0	0.0	0.0	2.0	3.0	**3.2**	2.0	3.5	**0.0**	0.0	0.0	0.0	0.0	**1.3**	2.0	4.0	4.0	0.0	**0.5**	4.0	0.0	**0.6**	0.0	2.0	4.0	X	0.0	**0.0**	0.0	0.0	**0.0**	0.0	E	**4.0**	4.0	4.0	4.0	4.0	4.0
205314	**8.3**	**9.7**	**2.8**	0.0	1.0	4.0	0.0	4.0	3.0	2.0	**2.0**	4.0	1.5	**0.2**	2.0	0.0	0.0	0.0	**0.8**	2.0	4.0	0.0	X	**0.0**	0.0	0.0	**0.0**	0.0	0.0	X	0.0	0.0	**0.0**	0.0	X	**0.0**	X	E	**4.0**	4.0	4.0	4.0	4.0	4.0
205331	**15.7**	**18.4**	**4.3**	4.0	3.0	4.0	0.0	4.0	4.0	4.0	**3.2**	4.0	3.0	**3.0**	4.0	4.0	4.0	4.0	**1.5**	4.0	4.0	4.0	0.0	**0.0**	0.0	0.0	**1.0**	0.0	2.0	4.0	X	4.0	**3.0**	4.0	4.0	**0.0**	X	X	**2.4**	4.0	4.0	0.0	0.0	4.0
205392	**2.2**	**2.6**	**1.4**	0.0	4.0	1.0	X	4.0	0.0	X	**0.4**	2.0	0.0	**0.0**	0.0	X	X	X	**0.0**	0.0	0.0	X	X	**0.0**	X	X	**0.0**	X	X	X	X	X	**0.0**	X	X	**0.0**	X	X	**0.8**	4.0	0.0	0.0	0.0	0.0
205511	**16.8**	**19.7**	**3.9**	0.0	4.0	4.0	0.0	4.0	4.0	4.0	**3.6**	4.0	3.5	**3.0**	4.0	4.0	4.0	4.0	**1.8**	4.0	2.0	4.0	4.0	**1.3**	4.0	2.0	**0.8**	X	4.0	4.0	0.0	0.0	**3.0**	4.0	4.0	**0.0**	X	X	**2.4**	4.0	4.0	0.0	0.0	4.0
205580	**6.2**	**7.3**	**3.8**	2.0	3.0	4.0	0.0	4.0	4.0	3.0	**2.0**	4.0	1.5	**0.0**	0.0	0.0	0.0	0.0	**0.5**	4.0	0.0	0.0	X	**0.0**	0.0	0.0	**0.2**	X	0.0	2.0	0.0	0.0	**0.0**	0.0	X	**0.0**	X	X	**0.8**	4.0	0.0	0.0	X	X
205625	**12.3**	**14.4**	**3.6**	2.0	4.0	4.0	0.0	0.0	4.0	4.0	**0.8**	4.0	0.0	**2.7**	4.0	3.0	4.0	4.0	**1.0**	0.0	4.0	4.0	0.0	**0.0**	0.0	0.0	**0.8**	X	0.0	4.0	0.0	4.0	**1.5**	0.0	4.0	**0.0**	0.0	E	**4.0**	4.0	4.0	4.0	4.0	4.0
205767	**15.7**	**18.4**	**3.9**	0.0	4.0	4.0	0.0	4.0	4.0	4.0	**2.4**	X	3.0	**2.8**	2.0	4.0	4.0	4.0	**1.0**	2.0	2.0	2.0	2.0	**0.5**	4.0	X	**0.6**	0.0	2.0	4.0	X	0.0	**3.0**	4.0	4.0	**1.0**	2.0	E	**3.2**	4.0	4.0	4.0	0.0	4.0
205901	**12.3**	**14.4**	**2.8**	2.0	4.0	2.0	0.0	2.0	4.0	2.0	**2.8**	4.0	2.5	**0.0**	0.0	0.0	0.0	0.0	**1.3**	2.0	4.0	4.0	X	**0.5**	4.0	0.0	**0.9**	4.0	1.0	4.0	X	0.0	**3.0**	4.0	4.0	**0.0**	X	X	**3.2**	4.0	4.0	4.0	0.0	4.0
206083	**11.5**	**13.5**	**3.6**	0.0	2.0	4.0	0.0	4.0	4.0	4.0	**3.2**	4.0	3.0	**0.4**	4.0	0.0	0.0	0.0	**0.9**	3.0	0.0	4.0	X	**0.0**	0.0	0.0	**1.4**	4.0	2.0	4.0	4.0	0.0	**0.0**	0.0	0.0	**0.0**	X	X	**4.0**	4.0	4.0	4.0	4.0	4.0
206140	**16.5**	**19.4**	**4.2**	4.0	4.0	3.0	0.0	4.0	4.0	4.0	**3.6**	4.0	3.5	**2.6**	4.0	4.0	4.0	0.0	**1.8**	2.0	4.0	4.0	4.0	**0.5**	4.0	0.0	**0.6**	2.0	2.0	2.0	X	0.0	**3.0**	4.0	4.0	**0.0**	0.0	V	**3.2**	4.0	4.0	4.0	0.0	4.0
206234	**14.3**	**16.8**	**3.6**	0.0	4.0	4.0	0.0	4.0	4.0	3.0	**2.8**	4.0	2.5	**3.0**	4.0	4.0	4.0	4.0	**0.8**	2.0	4.0	X	X	**0.0**	0.0	0.0	**1.0**	X	2.0	4.0	2.0	2.0	**3.0**	4.0	4.0	**1.0**	2.0	E	**1.6**	4.0	0.0	4.0	0.0	0.0
206313	**10.2**	**12.0**	**2.5**	0.0	0.0	2.0	X	4.0	4.0	3.0	**0.0**	X	X	**1.6**	X	1.0	4.0	4.0	**1.3**	2.0	4.0	4.0	0.0	**0.0**	X	X	**0.4**	X	2.0	2.0	0.0	0.0	**2.3**	2.0	4.0	**0.0**	X	X	**4.0**	4.0	4.0	4.0	4.0	4.0
206377	**15.0**	**17.6**	**4.9**	4.0	4.0	4.0	4.0	3.0	4.0	4.0	**3.6**	4.0	3.5	**2.0**	2.0	3.0	4.0	X	**2.0**	4.0	4.0	4.0	4.0	**0.0**	X	X	**0.4**	X	X	4.0	X	X	**1.5**	0.0	4.0	**0.0**	X	X	**3.2**	4.0	4.0	4.0	0.0	4.0
206487	**0.9**	**1.1**	**1.1**	0.0	0.0	X	X	4.0	4.0	X	**0.0**	X	X	**0.0**	X	X	X	X	**0.0**	X	X	X	X	**0.0**	X	X	**0.0**	X	X	X	X	X	**0.0**	X	X	**0.0**	X	X	**0.0**	X	X	X	X	X
206688	**14.0**	**16.5**	**4.3**	4.0	3.0	4.0	0.0	4.0	4.0	4.0	**3.2**	4.0	3.0	**2.4**	4.0	2.0	4.0	4.0	**0.8**	4.0	2.0	0.0	0.0	**0.0**	X	X	**0.4**	X	0.0	4.0	0.0	X	**2.3**	2.0	4.0	**0.0**	X	X	**3.2**	4.0	4.0	4.0	0.0	4.0
206690	**11.0**	**12.9**	**2.8**	4.0	4.0	0.0	0.0	3.0	3.0	3.0	**2.4**	4.0	2.0	**0.8**	4.0	1.0	0.0	0.0	**1.8**	4.0	4.0	4.0	2.0	**0.0**	X	X	**0.6**	X	2.0	X	0.0	4.0	**2.3**	2.0	4.0	**0.0**	X	X	**2.4**	4.0	4.0	0.0	0.0	4.0
206704	**3.6**	**4.2**	**1.8**	0.0	3.0	3.0	0.0	4.0	X	X	**1.6**	4.0	1.0	**0.0**	X	X	X	X	**0.0**	X	X	X	X	**0.0**	X	X	**0.0**	X	X	X	X	X	**0.0**	X	X	**0.0**	X	X	**0.8**	4.0	X	X	X	X
206899	**9.4**	**11.0**	**2.2**	0.0	4.0	1.0	0.0	4.0	4.0	1.0	**1.8**	1.0	2.0	**2.8**	2.0	4.0	4.0	4.0	**1.1**	2.0	3.0	4.0	0.0	**0.5**	4.0	0.0	**1.0**	2.0	0.0	4.0	4.0	0.0	**0.0**	0.0	0.0	**0.0**	X	X	**1.6**	4.0	4.0	0.0	X	X
206986	**10.1**	**11.9**	**2.5**	0.0	4.0	2.0	0.0	4.0	4.0	1.0	**2.0**	4.0	1.5	**0.0**	0.0	0.0	0.0	X	**1.8**	4.0	2.0	4.0	4.0	**0.0**	0.0	0.0	**1.0**	0.0	2.0	4.0	0.0	4.0	**2.3**	2.0	4.0	**0.0**	0.0	E	**2.4**	4.0	4.0	0.0	0.0	4.0
207150	**11.8**	**13.9**	**3.6**	2.0	4.0	3.0	X	4.0	4.0	3.0	**4.0**	4.0	4.0	**2.5**	2.0	3.0	4.0	4.0	**1.0**	4.0	4.0	0.0	0.0	**0.0**	0.0	0.0	**1.2**	X	4.0	4.0	0.0	4.0	**0.0**	0.0	0.0	**0.0**	X	X	**1.6**	4.0	0.0	0.0	0.0	4.0
207286	**10.8**	**12.7**	**2.9**	3.0	2.0	2.0	0.0	4.0	4.0	2.0	**0.8**	4.0	0.0	**0.3**	X	1.0	0.0	0.0	**1.8**	4.0	4.0	4.0	2.0	**0.0**	X	X	**0.8**	0.0	x	4.0	0.0	4.0	**3.0**	4.0	4.0	**1.5**	3.0	E	**1.6**	4.0	0.0	4.0	0.0	0.0
207290	**10.9**	**12.8**	**3.8**	4.0	2.0	4.0	0.0	1.0	4.0	4.0	**0.0**	X	X	**1.5**	2.0	4.0	0.0	0.0	**2.0**	4.0	4.0	4.0	4.0	**0.0**	X	X	**0.0**	X	X	X	X	X	**1.5**	0.0	4.0	**0.0**	X	X	**4.0**	4.0	4.0	4.0	4.0	4.0
207348	**17.5**	**20.5**	**3.9**	2.0	4.0	4.0	0.0	2.0	4.0	4.0	**2.4**	4.0	2.0	**3.0**	4.0	4.0	4.0	4.0	**1.8**	2.0	4.0	4.0	4.0	**1.3**	4.0	2.0	**1.2**	0.0	4.0	4.0	0.0	4.0	**3.0**	4.0	4.0	**0.0**	0.0	V	**4.0**	4.0	4.0	4.0	4.0	4.0

	Note finale	TOTAL	Exercice 1 Triggers	1.1	1.2	1.3	1.4	1.5	1.6	1.7	Exercice 2 PL/pgSQL	création	PL/pgSQL	Exercice 3 Transactions	3.1	3.2	3.3	3.4	Exercice 4 Grandeur	4.1	4.2	4.3	4.4	Exercice 5 Indexation	Index	Justification	Exercice 6 Cours	6.1	6.2	6.3	6.4	6.5	Exercice 7 Sérialisabilité	7.1	7.2	Exercice 8 Concurrence	question	choix	Exercice 9 Arbres B+	9.1	9.2	9.3	9.4	9.5
Barème	**23.0**	**27.0**	**5**	1	1	2	1	1	1	2	**4**	1	4	**3**	1	3	2	1	**2**	1	1	1	1	**2**	1	3	**2**	1	1	1	1	1	**3**	1	1	**2**	1	0	**4**	1	1	1	1	1
208298	**14.6**	**17.2**	**4.0**	2.0	3.0	4.0	0.0	4.0	4.0	4.0	**3.2**	4.0	3.0	**1.3**	0.0	0.0	4.0	4.0	**0.5**	2.0	2.0	X	X	**0.5**	4.0	0.0	**1.4**	4.0	2.0	4.0	0.0	4.0	**2.3**	2.0	4.0	**0.0**	0.0	V	**4.0**	4.0	4.0	4.0	4.0	4.0
208599	**8.3**	**9.7**	**1.9**	2.0	2.0	2.0	0.0	2.0	0.0	2.0	**2.0**	4.0	1.5	**0.6**	0.0	2.0	0.0	0.0	**0.8**	4.0	2.0	0.0	X	**0.0**	X	X	**0.6**	X	X	4.0	X	2.0	**3.0**	4.0	4.0	**0.0**	X	X	**0.8**	4.0	0.0	0.0	0.0	0.0
208800	**9.3**	**10.9**	**4.4**	4.0	4.0	4.0	0.0	4.0	4.0	4.0	**2.0**	4.0	1.5	**2.0**	4.0	1.0	4.0	4.0	**1.0**	0.0	4.0	4.0	X	**0.0**	X	X	**0.6**	X	X	4.0	X	2.0	**0.0**	0.0	0.0	**0.0**	X	X	**0.8**	4.0	0.0	0.0	0.0	0.0
208833	**8.7**	**10.2**	**2.2**	0.0	4.0	0.0	0.0	4.0	4.0	2.0	**1.2**	0.0	1.5	**0.0**	0.0	X	X	X	**0.5**	0.0	0.0	4.0	X	**0.5**	4.0	0.0	**0.4**	X	X	4.0	X	X	**3.0**	4.0	4.0	**0.0**	X	X	**2.4**	4.0	4.0	0.0	0.0	4.0
208938	**12.8**	**15.0**	**3.6**	0.0	3.0	4.0	0.0	4.0	3.0	4.0	**3.6**	4.0	3.5	**1.5**	4.0	2.0	0.0	4.0	**1.5**	4.0	4.0	4.0	0.0	**0.5**	4.0	0.0	**0.8**	X	2.0	4.0	X	2.0	**1.5**	4.0	0.0	**0.0**	X	X	**2.0**	2.0	4.0	2.0	0.0	2.0
209016	**13.1**	**15.4**	**2.5**	1.0	4.0	0.0	0.0	1.0	4.0	4.0	**3.6**	4.0	3.5	**0.4**	2.0	0.0	X	2.0	**1.3**	2.0	4.0	4.0	0.0	**0.0**	0.0	0.0	**0.6**	X	2.0	4.0	X	0.0	**3.0**	4.0	4.0	**0.0**	X	X	**4.0**	4.0	4.0	4.0	4.0	4.0
209050	**2.2**	**2.6**	**1.4**	2.0	0.0	0.0	0.0	3.0	3.0	1.0	**1.2**	2.0	1.0	**0.0**	0.0	0.0	X	0.0	**0.0**	X	X	X	X	**0.0**	X	X	**0.0**	0.0	X	X	X	0.0	**0.0**	X	X	**0.0**	X	X	**0.0**	X	X	X	X	X
209119	**14.7**	**17.3**	**3.6**	2.0	2.0	4.0	0.0	2.0	4.0	4.0	**3.2**	4.0	3.0	**2.8**	2.0	4.0	4.0	4.0	**2.0**	4.0	4.0	4.0	4.0	**0.0**	0.0	0.0	**1.8**	4.0	2.0	4.0	4.0	4.0	**1.5**	2.0	2.0	**0.0**	X	X	**2.4**	4.0	4.0	4.0	0.0	X
209217	**11.7**	**13.8**	**3.6**	3.0	3.0	3.0	0.0	4.0	4.0	3.0	**0.0**	X	X	**0.3**	X	1.0	0.0	X	**1.3**	2.0	4.0	4.0	0.0	**0.0**	0.0	0.0	**0.6**	X	X	2.0	X	4.0	**3.0**	4.0	4.0	**1.0**	2.0	E	**4.0**	4.0	4.0	4.0	4.0	4.0
209234	**6.6**	**7.8**	**1.0**	0.0	1.0	0.0	0.0	4.0	2.0	0.0	**0.0**	X	X	**0.4**	4.0	0.0	0.0	0.0	**1.5**	4.0	4.0	4.0	X	**0.0**	X	X	**0.6**	4.0	2.0	X	X	X	**1.9**	4.0	1.0	**0.0**	X	X	**2.4**	4.0	4.0	0.0	0.0	4.0
209262	**8.8**	**10.3**	**2.8**	4.0	4.0	0.0	0.0	4.0	4.0	2.0	**0.8**	2.0	0.5	**0.9**	2.0	2.0	0.0	0.0	**1.5**	2.0	2.0	4.0	4.0	**0.0**	X	X	**0.4**	X	X	4.0	X	X	**0.0**	0.0	0.0	**0.0**	0.0	E	**4.0**	4.0	4.0	4.0	4.0	4.0
209394	**5.1**	**6.0**	**2.6**	0.0	0.0	3.0	0.0	4.0	3.0	3.0	**1.6**	4.0	1.0	**0.0**	X	0.0	0.0	X	**0.0**	0.0	0.0	0.0	0.0	**0.0**	0.0	X	**1.0**	X	2.0	4.0	X	4.0	**0.0**	X	X	**0.0**	X	X	**0.8**	4.0	0.0	0.0	0.0	X
209421	**14.8**	**17.4**	**2.8**	0.0	4.0	4.0	0.0	0.0	0.0	4.0	**3.2**	4.0	3.0	**1.1**	4.0	2.0	0.0	0.0	**1.8**	4.0	4.0	4.0	2.0	**0.0**	0.0	0.0	**0.4**	0.0	0.0	4.0	X	0.0	**3.0**	4.0	4.0	**2.0**	4.0	E	**3.2**	4.0	0.0	4.0	4.0	4.0
209452	**5.9**	**6.9**	**2.2**	2.0	4.0	1.0	0.0	4.0	4.0	0.0	**0.0**	X	X	**0.2**	2.0	0.0	0.0	0.0	**0.0**	X	X	X	X	**0.0**			**0.6**	X	0.0	4.0	2.0	X	**1.5**	0.0	4.0	**0.0**	X	X	**2.4**	4.0	4.0	0.0	0.0	4.0
209505	**10.4**	**12.2**	**3.6**	4.0	4.0	3.0	0.0	4.0	4.0	2.0	**1.2**	2.0	1.0	**0.2**	2.0	0.0	0.0	0.0	**1.5**	2.0	4.0	2.0	4.0	**0.0**	0.0	0.0	**0.2**	X	2.0	0.0	0.0	X	**2.3**	2.0	4.0	**0.0**	X	X	**3.2**	4.0	4.0	4.0	0.0	4.0
209968	**11.1**	**13.0**	**3.9**	4.0	0.0	4.0	0.0	4.0	4.0	4.0	**0.0**	X	X	**2.1**	2.0	2.0	4.0	4.0	**1.0**	2.0	4.0	2.0	X	**0.0**	0.0	0.0	**0.0**	X	X	X	X	X	**2.3**	2.0	4.0	**0.5**	1.0	E	**3.2**	4.0	4.0	4.0	0.0	4.0
210046	**10.3**	**12.1**	**1.9**	0.0	0.0	1.0	0.0	4.0	4.0	2.0	**2.4**	4.0	2.0	**0.0**	0.0	0.0	0.0	0.0	**0.8**	2.0	4.0	0.0	0.0	**0.5**	4.0	0.0	**0.6**	X	2.0	4.0	X	0.0	**2.3**	2.0	4.0	**0.5**	1.0	E	**3.2**	4.0	4.0	4.0	0.0	4.0
210894	**11.6**	**13.6**	**3.8**	4.0	4.0	3.0	0.0	4.0	3.0	3.0	**0.0**	X	0.0	**1.8**	0.0	3.0	4.0	0.0	**0.8**	2.0	0.0	4.0	0.0	**0.0**	0.0	0.0	**0.4**	X	X	4.0	X	0.0	**3.0**	4.0	4.0	**1.5**	3.0	E	**2.4**	4.0	4.0	0.0	0.0	4.0
211411	**11.3**	**13.2**	**2.2**	4.0	0.0	X	0.0	4.0	4.0	2.0	**0.0**	X	0.0	**0.0**	0.0	0.0	X	0.0	**2.0**	4.0	4.0	4.0	4.0	**0.5**	4.0	X	**0.8**	0.0	0.0	4.0	0.0	4.0	**3.0**	4.0	4.0	**1.5**	3.0	E	**3.2**	4.0	4.0	4.0	0.0	4.0
211495	**12.8**	**15.0**	**1.7**	2.0	2.0	2.0	0.0	2.0	0.0	1.0	**2.0**	4.0	1.5	**1.8**	0.0	3.0	4.0	0.0	**0.0**	0.0	0.0	0.0	X	**1.3**	4.0	2.0	**0.8**	4.0	X	4.0	X	0.0	**1.5**	2.0	2.0	**2.0**	4.0	E	**4.0**	4.0	4.0	4.0	4.0	4.0
213944	**18.7**	**22.0**	**3.5**	4.0	4.0	4.0	0.0	1.0	4.0	2.0	**3.6**	4.0	3.5	**3.0**	4.0	4.0	4.0	4.0	**1.5**	2.0	4.0	4.0	2.0	**0.0**	0.0	0.0	**1.4**	4.0	2.0	4.0	0.0	4.0	**3.0**	4.0	4.0	**2.0**	4.0	E	**4.0**	4.0	4.0	4.0	4.0	4.0
216935	**15.2**	**17.8**	**4.2**	2.0	4.0	4.0	0.0	4.0	4.0	4.0	**2.0**	0.0	2.5	**2.8**	4.0	4.0	4.0	2.0	**1.3**	4.0	4.0	2.0	0.0	**0.5**	4.0	0.0	**1.0**	0.0	4.0	4.0	2.0	0.0	**3.0**	4.0	4.0	**1.5**	3.0	E	**1.6**	4.0	4.0	0.0	0.0	X
218329	**12.1**	**14.2**	**2.6**	2.0	2.0	2.0	0.0	3.0	2.0	3.0	**1.6**	4.0	1.0	**0.2**	2.0	0.0	0.0	X	**1.3**	2.0	4.0	4.0	0.0	**1.3**	4.0	2.0	**0.2**	0.0	0.0	2.0	X	0.0	**3.0**	4.0	4.0	**0.0**	X	E	**4.0**	4.0	4.0	4.0	4.0	4.0
224590	**9.1**	**10.6**	**2.9**	0.0	3.0	3.0	0.0	4.0	4.0	2.0	**2.8**	4.0	2.5	**1.6**	0.0	1.0	4.0	4.0	**0.8**	2.0	0.0	4.0	0.0	**0.0**	0.0	0.0	**0.6**	0.0	2.0	4.0	0.0	0.0	**0.4**	1.0	0.0	**0.0**	0.0	V	**1.6**	4.0	4.0	X	X	X
239797	**8.2**	**9.7**	**3.3**	0.0	4.0	3.0	0.0	4.0	4.0	3.0	**2.8**	4.0	2.5	**0.0**	0.0	0.0	0.0	X	**0.3**	2.0	0.0	X	X	**0.3**	2.0	0.0	**0.0**	X	0.0	0.0	X	X	**2.3**	2.0	4.0	**0.0**	0.0	V	**0.8**	4.0	0.0	X	X	X
Moyenne	**10.4**	**12.2**	**2.8**	1.6	2.7	2.6	0.1	3.5	3.4	2.7	**1.8**	3.5	1.8	**1.2**	2.2	1.7	1.9	1.9	**1.0**	2.5	2.8	2.9	1.4	**0.2**	1.6	0.5	**0.6**	1.4	1.7	3.5	0.5	1.6	**1.7**	2.5	3.1	**0.4**	1.9		**2.5**	3.9	3.1	2.4	1.2	3.0