CS3563 DBMS-II 2023 Spring

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1) Department table if k=10:

dept_name	Building	Budget
Civil Eng.	Chandler	255041.46
Biology	Candlestick	647610.55
History	Taylor	699140.86
Physics	Wrigley	942162.76
Marketing	Lambeau	210627.58
Pol. Sci.	Whitman	573745.09
English	Palmer	611042.66
Accounting	Saucon	441840.92
Comp. Sci.	Lamberton	106378.69
Languages	Linderman	601283.60

Section table if k=7:

course_id	sec_id	semester	year	Building	room_number	time_slot_id
313	1	Fall	2010	Chandler	804	N
747	1	Spring	2004	Gates	314	K
443	1	Spring	2010	Whitman	434	O
893	1	Fall	2007	Fairchild	145	B
663	1	Spring	2005	Fairchild	145	D
457	1	Spring	2001	Saucon	844	D
445	1	Spring	2001	Alumni	547	J

Takes table if k=5:

Id	course_id	sec_id	semester	year	grade
65901	401	1	Fall	2003	C-
24932	802	1	Spring	2003	B-
61332	200	1	Spring	2007	A-
73492	760	1	Spring	2004	A
65715	843	1	Fall	2010	B+

2) Prerequisites for course whose id is 276:
- 403   Immunology
- 345   Race Car Driving
- 352   Compiler Design

Prerequisites for course whose id is 647:
- 792   Image Processing
- 814   Compiler Design

Prerequisites for course whose id is 496:
- 489   Journalism
- 416   Data Mining
- 443   Journalism
- 852   World History
- 133   Antidisestablishmentarianism in Modern America
- 267   Hydraulics

4)

Roll Number	CGPA
76672	5.08108108108108
90567	5.84126984126984
4582	5.36111111111111
81258	6.47619047619048

5) a) Top-5 students in terms of CGPA:

Roll Number	CGPA
19362	8.26829268292683
81207	8.2000000000000000
78637	8.17142857142857
98619	8.03333333333333
18286	8.0000000000000000

5.b)Top-5 students with highest CGPA for Psychology Department:

Roll Number	CGPA
17676	7.56410256410256
40116	7.5000000000000000
32886	7.42857142857143
26494	7.36842105263158
51093	7.1500000000000000

Top-5 students with highest CGPA for Elec. Eng. Department:

Roll Number	CGPA
29140	7.76470588235294
64401	7.6279069767441900
52057	7.49090909090909
59517	7.38235294117647
38712	6.86440677966102

Top-5 students with highest CGPA for Civil Eng. Department:

Roll Number	CGPA
98619	8.03333333333333
13753	7.73529411764706
40677	7.70731707317073
99660	7.64150943396226
32419	7.46153846153846

5.c) Top-5 students with highest CGPA for course id 237:

Roll Number	CGPA
78637	8.17142857142857
66469	7.94339622641509
64196	7.94117647058824
77898	7.91111111111111
99289	7.89473684210526

Top-5 students with highest CGPA for course id 349:

Roll Number	CGPA
23506	7.65853658536585
40116	7.5000000000000000
16311	7.48837209302326
70021	7.42857142857143
14094	7.4000000000000000

Top-5 students with highest CGPA for course id 735:

Roll Number	CGPA
18286	8.0000000000000000
77898	7.91111111111111
52707	7.84210526315789
11441	7.82352941176471
39901	7.55882352941176

3) Test Case-1:
   INSERT INTO teaches
   values('22591','962','1','Spring',2008);

Test Case-2:
INSERT INTO teaches
values('74420','960','2','Fall',2006);

Test Case-3:
INSERT INTO teaches
values('79081','802','1','Spring',2003);

Above 3 cases test the trigger when a row where instructor can teach two sections in the same slot in a given semester simultaneously. These three cases can not be inserted if the trigger actually works.

Test Case-4:
INSERT INTO section
values('408','1','Spring',2003,'Taylor',183','J');

Test Case-5:
INSERT INTO section
values('960','1','Fall',2006,'Power','717','M');

When we try to insert above two cases in section, they can not be inserted because a course can not be taught for two different sections simultaneously by an instructor.