

A1

Timothy Mahan
8/29/2016

STU_ID	STU_NAME	CLASS_CODE	CLASS_NAME	CLASS_CREDITS	INSTR_NAME	CLASS_DAYS	CLASS_TIMES	ROOM
1843696	Timothy Mahan	1660	ACCT 202	3	Blanford	MoWe	8:00 AM - 9:15 AM	BUS 123
1843696	Timothy Mahan	4748	CIS 320	3	Barker	MoWe	9:30 AM - 10:45 AM	BUS 008
1843696	Timothy Mahan	1715	CIS 310	3	Guan	MoWe	11:00 AM - 12:15 PM	BUS 008
1843696	Timothy Mahan	9520	CIS 200	3	Wright	TuTh	7:00 AM - 8:15 PM	BUS 008
1234567	Christopher Meany	1700	MILS 405	3	ROTC	MoWeFri	6:30 AM - 7:30 AM	TBA
1234567	Christopher Meany	1800	CIS 320	3	Barker	MoWe	9:30 AM - 10:45 AM	BUS 008
1234567	Christopher Meany	1900	CIS 310	3	Guan	MoWe	2:30 PM - 3:45 PM	BUS 101
1234567	Christopher Meany	1659	ACCT 201	3	Blanford	Mo	5:30 PM - 8:15 PM	DAV 303
1234567	Christopher Meany	1000	HIST 211	3	Hist	TuTh	8:00 AM - 9:15 AM	DAV 104
1234568	Chase Zimmer	1001	MGMT 340	3	Garret	MoWe	11:00 AM - 12:15 PM	BUS 123
1234568	Chase Zimmer	1002	CIS 310	3	Guan	MoWe	2:30 PM - 3:45 PM	BUS 101
1234568	Chase Zimmer	1003	CIS 350	3	Zurada	TuTh	11:00 AM - 12:15 PM	BUS 008
1234568	Chase Zimmer	1004	ACCT 430	3	Paybe	TuTh	2:30 PM - 3:45 PM	BUS 205
1234568	Chase Zimmer	1005	ACCT 411	3	Levitan	TuTh	4:00 PM - 5:15 PM	BUS 216

- 1) In this example, the major sources of redundancy in our table are:
- Stu_ID - Repeats in the same table for every course student takes
 - Stu_Name - Repeats in the same table for every course student takes
 - Class_Code - Repeats in the same table for every student taking the specific course

- Class_Name - Repeats in the same table for every student taking this course type
- Class_Credhrs - Repeats in the same table for every class worth 3 credit hours
- Instr_Name - Repeats for every class ID in which they instruct
- Class_Days - Repeats for numerous class codes
- Class_Times - Repeats for numerous class codes
- Room - Repeats for numerous classes throughout a given day.

2) Because so many types of data exist within the same table, we see a lot of sources of redundancy, which can cause different types of anomalies within a database; one such being an update anomaly. If the INSTR_NAME needed to change for a course such as the CIS 320 course with the Class Code of 1715 (let's say Dr. Barker is on sabbatical this semester), then each record containing the CLASS_CODE of 1715 with Dr. Barker as the instructor would need the INSTR_NAME field updated. Instead of being able to simply update the course information once in a table with all relevant course information, you would have to write code to sift through the large table we have containing a lot of redundant data and update that way, or if you're using a less sophisticated system, you would have to update the data manually. Having to sort and update so many records leaves a potential for data integrity problems if the updates aren't completed with perfection or if the code to update all of the records is flawed in some way.