James Vigilante

IT2351

Assignment 5

9/27/2021

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| StudentID | Student Name | Address | Email | Classes | Major |
| S1 | Joe Smith | 124 Main St | Joe@school.edu | IT1025, MATH1200, IT1050 | Programming |
| S2 | Sue Brown | 345 Second St | [Sue@school.edu](mailto:Sue@school.edu) | IT1025, IT1050, IT2351 | Programming |
| S3 | Nick Green | 45 York Road | [Nick@school.edu](mailto:Nick@school.edu) | IT1025 | Networking |
| S4 | Andy Andrews | 600 5th avenue | [andy@school.edu](mailto:andy@school.edu) | IT1025, IT1050 | Networking |
| S5 | Remus Romulus | 91234 7th street | [wolfBrothers@school.edu](mailto:wolfBrothers@school.edu) | IT1025, IT1050, MATH1200, ENG 1100 | Programming |
| S6 | Worf Mogh | 00001 Enterprise Dr | [sonOfMogh@school.edu](mailto:sonOfMogh@school.edu) | ENG1100, MATH1200,  SOC1100 | Undeclared |
| S7 | Crash Bandicoot | 23598 Wumpa Lane | [WumpaPls@school.edu](mailto:WumpaPls@school.edu) | ENG1100, MATH1200,  SOC1100 | Undeclared |

b. Identify the tables and primary and foreign keys.

I created 3 tables for this data set: students, courses, and majors. I used student id for the primary key of the students table, I created a column called course\_id to use as a primary key, and have it store which courses were which in the courses table. Finally I did the same thing for the majors table, creating a majors\_id column and using that for the primary key. Since every student has courses that they take and a major they’ve declared, I use both course\_id and majors\_id as foreign keys in the student table.  
c. Explain how you achieved each normal form (first – third).

I normalized this data by hand – truthfully I’ve been doing it all along without knowing what it was called because it’s the way to order data logically. First normal form of this table was easy, Give every student a row with one course in it so each column is truly unique. Second normal form had me split up this data into 3 tables – students, courses, and majors, so that all data in each table only depended on the primary key of that table. Third normal form was achieved without thinking – none of this data depends on one another except for the primary key. Found this out while learning more about database normalization: This database is also in Boyce-Codd Normal Form too, because all the tables only have 1 primary key.