First Normal Form:

This is in First Normal Form due to the non-repetition of data. Students with multiple classes are listed with their different classes in a different row.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| StudentId  **Primary and foreign key** | Student Name | Address | Email | Classes | Major |
| S1 | John Jones | 124 Main St | Joe@School.edu | IT1025 | Programming and Development |
| S1 | John Jones | 124 Main St | Joe@School.edu | MATH1200 | Programming and Development |
| S1 | John Jones | 124 Main St | Joe@School.edu | IT1050 | Programming and Development |
| S2 | Sue Smith | 345 Second St. | [Sue@School.edu](mailto:Sue@School.edu) | IT1025 | Programming and Development |
| S2 | Sue Smith | 345 Second St. | [Sue@School.edu](mailto:Sue@School.edu) | IT1050 | Programming and Development |
| S2 | Sue Smith | 345 Second St. | [Sue@School.edu](mailto:Sue@School.edu) | IT2351 | Programming and Development |
| S3 | Nick Foyar | 45 York Road | Nick@School.edu | IT1025 | Networking |
| S4 | Andy Andrews | 600 5th Ave. | Andy@School.edu | IT1025 | Networking |
| S4 | Andy Andrews | 600 5th Ave. | Andy@School.edu | IT1050 | Networking |
| S5 | Sally Marks | 508 5th St. | [Sally@School.edu](mailto:Sally@School.edu) | IT2660 | Data Analytics |
| S6 | Jim Jones | 708 Fish Ave. | [Jim@School.edu](mailto:Jim@School.edu) | IT1090 | Networking Software |
| S7 | Frankie Down | 648 Sur Dr. | [Frankie@School.edu](mailto:Frankie@School.edu) | MATH1200 | Data Analytics |

Second Normal Form:

These tables are in second normal form by moving the classes to their own table, leaving a student information table.

Classes Table:

|  |  |
| --- | --- |
| Student ID : **Primary and foreign key.** | Classes |
| S1 | IT1025 |
| S1 | MATH1200 |
| S1 | IT1050 |
| S2 | IT1025 |
| S2 | IT1050 |
| S2 | IT2351 |
| S3 | IT1025 |
| S4 | IT1025 |
| S4 | IT1050 |
| S5 | IT2660 |
| S6 | IT1090 |
| S7 | MATH1200 |

Student Information Table:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Student ID | Student Name | Address | Email | Major |
| S1 | John Jones | 124 Main St. | [Joe@School.edu](mailto:Joe@School.edu) | Programming and Development |
| S2 | Sue Smith | 345 Second St. | [Sue@School.edu](mailto:Sue@School.edu) | Programming and Development |
| S3 | Nick Foyar | 45 York Road | [Nick@School.edu](mailto:Nick@School.edu) | Networking |
| S4 | Andy Andrews | 600 5th Ave. | [Andy@School.edu](mailto:Andy@School.edu) | Networking |
| S5 | Sally Marks | 508 5th St. | [Sally@School.edu](mailto:Sally@School.edu) | Data Analytics |
| S6 | Jim Jones | 708 Fish Ave. | [Jim@School.edu](mailto:Jim@School.edu) | Networking Software |
| S7 | Frankie Down | 648 Sur Dr. | [Frankie@School.edu](mailto:Frankie@School.edu) | Data Analytics |

Third Normal Form:

I believe that the previous two tables are in third – normal form; however, I also believe the “major” column could be removed/ added to a different table.