

1NF:

STUDENT

| <u>student_id</u> | student_name | credits | advisor_id | advisor_name | <u>course_code</u> | course_desc | grade |
|-------------------|--------------|---------|------------|--------------|--------------------|---------------|-------|
| 12345 | Jane Smith | 12 | 654 | Shirley | CIS 101 | Logic | A |
| 12345 | Jane Smith | 12 | 654 | Shirley | CIS 102 | XHTML | B |
| 12345 | Jane Smith | 12 | 654 | Shirley | CIS 110 | Visual Basic | A |
| 98765 | Thomas Last | 9 | 745 | Terry Evans | BUS 101 | Business I | B |
| 98765 | Thomas Last | 9 | 745 | Terry Evans | ENG 101 | English I | C |
| 98765 | Thomas Last | 9 | 745 | Terry Evans | ENG 102 | English II | C |
| 56789 | Robert Sim | 12 | 654 | Shirley | ACC 101 | Accounting I | B |
| 56789 | Robert Sim | 12 | 654 | Shirley | ACC 102 | Accounting II | A |
| 56789 | Robert Sim | 12 | 654 | Shirley | ENG 101 | English I | A |
| 56789 | Robert Sim | 12 | 654 | Shirley | ENG 102 | English II | A |

STUDENT (student_id, student_name, credits, advisor_id, advisor_name, course_code, course_desc, grade)

2NF:

STUDENT

| <u>student_id</u> | student_name | credits | advisor_id | advisor_name |
|-------------------|--------------|---------|------------|--------------|
| 12345 | Jane Smith | 12 | 654 | Shirley |
| 98765 | Thomas Last | 9 | 745 | Terry Evans |
| 56789 | Robert Sim | 12 | 654 | Shirley |

COURSE

| <u>course_code</u> | course_desc |
|--------------------|---------------|
| CIS 101 | Logic |
| CIS 102 | XHTML |
| CIS 110 | Visual Basic |
| BUS 101 | Business I |
| ENG 101 | English I |
| ENG 102 | English II |
| ACC 101 | Accounting I |
| ACC 102 | Accounting II |

STUDENT_COURSE

| <u>student_id</u> | <u>course_code</u> | grade |
|-------------------|--------------------|-------|
| 12345 | CIS 101 | A |
| 12345 | CIS 102 | B |
| 12345 | CIS 110 | A |
| 98765 | BUS 101 | B |
| 98765 | ENG 101 | C |
| 98765 | ENG 102 | C |
| 56789 | ACC 101 | B |
| 56789 | ACC 102 | A |
| 56789 | ENG101 | A |
| 56789 | ENG102 | A |

STUDENT (student_id, student_name, credits, advisor_id, advisor_name)

COURSE (course_code, course_desc)

STUDENT_COURSE (student_id, course_code, grade)

FK student_id -> STUDENT

FK course_code -> COURSE

3NF:

STUDENT

| <u>student_id</u> | student_name | credits | advisor_id |
|-------------------|--------------|---------|------------|
| 12345 | Jane Smith | 12 | 654 |
| 98765 | Thomas Last | 9 | 745 |
| 56789 | Robert Sim | 12 | 654 |

ADVISOR

| <u>advisor_id</u> | advisor_name |
|-------------------|--------------|
| 654 | Shirley |
| 745 | Terry Evans |

COURSE

| <u>course_code</u> | course_desc |
|--------------------|---------------|
| CIS 101 | Logic |
| CIS 102 | XHTML |
| CIS 110 | Visual Basic |
| BUS 101 | Business I |
| ENG 101 | English I |
| ENG 102 | English II |
| ACC 101 | Accounting I |
| ACC 102 | Accounting II |

STUDENT_COURSE

| <u>student_id</u> | <u>course_code</u> | grade |
|-------------------|--------------------|-------|
| 12345 | CIS 101 | A |
| 12345 | CIS 102 | B |
| 12345 | CIS 110 | A |
| 98765 | BUS 101 | B |
| 98765 | ENG 101 | C |
| 98765 | ENG 102 | C |
| 56789 | ACC 101 | B |
| 56789 | ACC 102 | A |
| 56789 | ENG101 | A |
| 56789 | ENG102 | A |

STUDENT (student_id, student_name, credits, advisor_id)

FK advisor_id -> ADVISOR

ADVISOR (advisor_id, advisor_name)

COURSE (course_code, course_desc)

STUDENT_COURSE (student_id, course_code, grade)

FK student_id -> STUDENT

FK course_code -> COURSE