# Sample Dataset

**Students Table**

| student\_id | first\_name | last\_name | grade | enrollment\_date |

|------------|------------|-----------|-------|-----------------|

| 1 | Alice | Johnson | A | 2023-01-15 |

| 2 | Bob | Smith | B | 2023-02-20 |

| 3 | Carol | White | A | 2023-03-10 |

| 4 | David | Brown | C | 2023-04-05 |

| 5 | Eve | Davis | B | 2023-05-22 |

**Courses Table**

| course\_id | course\_name | instructor\_id | credits |

|-----------|--------------|---------------|---------|

| 101 | Mathematics | 1001 | 3 |

| 102 | Physics | 1002 | 4 |

| 103 | Chemistry | 1003 | 3 |

| 104 | Biology | 1004 | 2 |

| 105 | History | 1005 | 3 |

**Enrollments Table**

| enrollment\_id | student\_id | course\_id | enrollment\_date |

|---------------|------------|-----------|-----------------|

| 1001 | 1 | 101 | 2023-01-16 |

| 1002 | 2 | 102 | 2023-02-21 |

| 1003 | 3 | 103 | 2023-03-11 |

| 1004 | 4 | 104 | 2023-04-06 |

| 1005 | 5 | 105 | 2023-05-23 |

| 1006 | 1 | 102 | 2023-01-16 |

| 1007 | 3 | 101 | 2023-03-11 |

| 1008 | 4 | 103 | 2023-04-06 |

**Instructors Table**

| instructor\_id | first\_name | last\_name | department |

|---------------|------------|-----------|-------------|

| 1001 | John | Allen | Mathematics |

| 1002 | Jane | Baker | Physics |

| 1003 | Sarah | Clark | Chemistry |

| 1004 | Michael | Davis | Biology |

| 1005 | Emily | Evans | History |

SQL Queries Organized from Basic to Advanced

1. List All Students with Grade 'A':

Question: Identify the students with an "A" grade.

2. Count Students Enrolled in Each Course:

Question: Find the number of students enrolled in each course.

3. List Courses Taught by Each Instructor:

Question: List all instructors along with the courses they teach.

4. Find Students Enrolled in More than One Course:

Question: Write a query to find students who are enrolled in more than one course.

5. Find Students Enrolled in Courses with More than 3 Credits:

Question: Find all students enrolled in courses that offer more than 3 credits.

6. Calculate Total Credits per Student:

Question: Calculate the total number of credits each student is enrolled in.

7. List Students Who Enrolled in All Courses:

Question: Find students who are enrolled in every available course.

8. Find Students Who Have Enrolled in Physics and Have an 'A' Grade:

Question: Find students who have enrolled in the Physics course and have an "A" grade.

9. Find Courses Without Enrollments:

Question: Identify courses that currently have no students enrolled.

10. Calculate Total Number of Students Each Instructor Is Teaching:

Question: Calculate the total number of students each instructor is teaching.

11. Calculate Average Grade per Course:

Question: Write a query to calculate the average grade for each course.

12. Find Courses with Maximum Enrollments:

Question: Find the course(s) with the maximum number of enrollments.

13. Calculate Percentage of Total Students Enrolled in Each Course:

Question: Calculate the percentage of total students enrolled in each course.

14. List of Courses Taught by Each Instructor and Total Number of Courses:

Question: Create a list of courses each instructor teaches, along with the total number of courses they are responsible for.

15. Find the Highest Enrollment Course:

Question: Find the course with the highest number of enrollments.