```
mysql> use school;
Database changed
mysql> select * from school;
ERROR 1146 (42S02): Table 'school.school' doesn't exist
mysql> select * from students;
+------------+----------------+--------+------+------------------+-------+-----------------------------+------------------+
| student_id | full_name      | gender | age  | course           | grade | email                       | phone            |
+------------+----------------+--------+------+------------------+-------+-----------------------------+------------------+
|          1 | Krishna Mehta  | Male   |   16 | English          | B     | krishna.mehta@yahoo.com     | +91-8177831854   |
|          2 | Aarav Patel    | Male   |   18 | Science          | C     | aarav.patel@outlook.com     | +91-8983485629   |
|          3 | Vivaan Khan    | Male   |   17 | English          | D     | vivaan.khan@yahoo.com       | +91-7164087355   |
|          4 | Vanya Khan     | Female |   15 | English          | B     | vanya.khan@outlook.com      | +91-9503320644   |
|          5 | Sai Verma      | Male   |   18 | Science          | A     | sai.verma@outlook.com       | +91-9535536930   |
|          6 | Rohan Gupta    | Male   |   18 | History          | B     | rohan.gupta@gmail.com       | +91-8861856688   |
|          7 | Aadhya Khan    | Female |   17 | History          | B     | aadhya.khan@yahoo.com       | +91-7437054326   |
|          8 | Myra Verma     | Female |   15 | English          | A     | myra.verma@gmail.com        | +91-8830894777   |
|          9 | Vihaan Sharma  | Female |   15 | History          | D     | vihaan.sharma@gmail.com     | +91-7945369740   |
|         10 | Krishna Patel  | Female |   18 | Science          | A     | krishna.patel@yahoo.com     | +91-8871233560   |
|         11 | Ira Gupta      | Female |   18 | History          | B     | ira.gupta@outlook.com       | +91-9496301553   |
|         12 | Pari Singh     | Female |   18 | English          | B     | pari.singh@outlook.com      | +91-9806425226   |
|         13 | Krishna Gupta  | Female |   17 | Science          | B     | krishna.gupta@gmail.com     | +91-9048240197   |
|         14 | Pari Verma     | Female |   16 | Science          | D     | pari.verma@yahoo.com        | +91-7967485215   |
|         15 | Myra Singh     | Male   |   18 | Computer Science | A     | myra.singh@yahoo.com        | +91-7983753505   |
|         16 | Ananya Mehta   | Male   |   16 | Mathematics      | B     | ananya.mehta@outlook.com    | +91-7045775795   |
|         17 | Vanya Singh    | Female |   17 | Mathematics      | A     | vanya.singh@yahoo.com       | +91-8414287450   |
|         18 | Aadhya Khan    | Female |   16 | Mathematics      | D     | aadhya.khan@yahoo.com       | +91-7690335753   |
|         19 | Sara Iyer      | Male   |   17 | Computer Science | C     | sara.iyer@yahoo.com         | +91-7861927915   |
|         20 | Pari Gupta     | Female |   18 | History          | C     | pari.gupta@yahoo.com        | +91-7943299172   |
|         21 | Vanya Reddy    | Male   |   15 | History          | B     | vanya.reddy@yahoo.com       | +91-8133622383   |
|         22 | Sai Nair       | Male   |   18 | Computer Science | B     | sai.nair@yahoo.com          | +91-9385828012   |
|         23 | Vivaan Nair    | Female |   17 | English          | A     | vivaan.nair@gmail.com       | +91-7553745318   |
|         24 | Pari Khan      | Female |   18 | Mathematics      | B     | pari.khan@outlook.com       | +91-9496472514   |
|         25 | Arjun Sharma   | Male   |   16 | Mathematics      | B     | arjun.sharma@gmail.com      | +91-7324167896   |
|         26 | Aarav Sharma   | Male   |   15 | Computer Science | C     | aarav.sharma@gmail.com      | +91-9211805837   |
|         27 | Aditya Reddy   | Male   |   15 | History          | A     | aditya.reddy@outlook.com    | +91-9684065963   |
|         28 | Arjun Reddy    | Female |   18 | English          | C     | arjun.reddy@gmail.com       | +91-8831418129   |
```

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|       27 | Aditya Reddy   | Male   |  15 | History          | A     | aditya.reddy@outlook.com  | +91-9684065963 |
|       28 | Arjun Reddy    | Female |  18 | English          | C     | arjun.reddy@gmail.com     | +91-8831418129 |
|       29 | Myra Iyer      | Female |  17 | Science          | A     | myra.iyer@gmail.com       | +91-8852673477 |
|       30 | Ishaan Gupta   | Male   |  16 | Computer Science | B     | ishaan.gupta@yahoo.com    | +91-9220320266 |
+----------+----------------+--------+-----+------------------+-------+---------------------------+----------------+
30 rows in set (0.00 sec)

mysql> SELECT *
    -> FROM students
    -> WHERE course = 'Science'
    -> ORDER BY age;
+------------+----------------+--------+-----+---------+-------+---------------------------+----------------+
| student_id | full_name      | gender | age | course  | grade | email                     | phone          |
+------------+----------------+--------+-----+---------+-------+---------------------------+----------------+
|         14 | Pari Verma     | Female |  16 | Science | D     | pari.verma@yahoo.com      | +91-7967485215 |
|         13 | Krishna Gupta  | Female |  17 | Science | B     | krishna.gupta@gmail.com   | +91-9048240197 |
|         29 | Myra Iyer      | Female |  17 | Science | A     | myra.iyer@gmail.com       | +91-8852673477 |
|          2 | Aarav Patel    | Male   |  18 | Science | C     | aarav.patel@outlook.com   | +91-8983485629 |
|          5 | Sai Verma      | Male   |  18 | Science | A     | sai.verma@outlook.com     | +91-9535536930 |
|         10 | Krishna Patel  | Female |  18 | Science | A     | krishna.patel@yahoo.com   | +91-8871233560 |
+------------+----------------+--------+-----+---------+-------+---------------------------+----------------+
6 rows in set (0.00 sec)

mysql> SELECT course, COUNT(*) AS total_students
    -> FROM students
    -> GROUP BY course;
+------------------+----------------+
| course           | total_students |
+------------------+----------------+
| English          |              7 |
| Science          |              6 |
| History          |              7 |
| Computer Science |              5 |
| Mathematics      |              5 |
+------------------+----------------+
5 rows in set (0.00 sec)
```

```
mysql> SELECT s.full_name, c.course_name, c.teacher
    -> FROM students s
    -> INNER JOIN courses c ON s.course = c.course_name;
ERROR 1146 (42S02): Table 'school.courses' doesn't exist
mysql> CREATE TABLE courses (
    ->     course_name VARCHAR(50) PRIMARY KEY,
    ->     teacher VARCHAR(100),
    ->     credits INT
    -> );
Query OK, 0 rows affected (0.02 sec)

mysql> INSERT INTO courses (course_name, teacher, credits) VALUES
    -> ('Mathematics', 'Dr. Neha Kapoor', 4),
    -> ('Science', 'Mr. Rajesh Verma', 4),
    -> ('English', 'Mrs. Sunita Mehta', 3),
    -> ('Computer Science', 'Mr. Arvind Kumar', 4),
    -> ('History', 'Ms. Anjali Sharma', 3);
Query OK, 5 rows affected (0.01 sec)
Records: 5  Duplicates: 0  Warnings: 0

mysql> select* from courses;
+------------------+-------------------+---------+
| course_name      | teacher           | credits |
+------------------+-------------------+---------+
| Computer Science | Mr. Arvind Kumar  |       4 |
| English          | Mrs. Sunita Mehta |       3 |
| History          | Ms. Anjali Sharma |       3 |
| Mathematics      | Dr. Neha Kapoor   |       4 |
| Science          | Mr. Rajesh Verma  |       4 |
+------------------+-------------------+---------+
5 rows in set (0.00 sec)

mysql> SELECT s.full_name, c.course_name, c.teacher
    -> FROM students s
    -> INNER JOIN courses c ON s.course = c.course_name;
+--------------+-------------+-------------------+
| full_name    | course_name | teacher           |
+--------------+-------------+-------------------+
| Krishna Mehta | English    | Mrs. Sunita Mehta |
| Aarav Patel   | Science    | Mr. Rajesh Verma  |
```

```
mysql> SELECT s.full_name, c.course_name, c.teacher
    -> FROM students s
    -> INNER JOIN courses c ON s.course = c.course_name;
+----------------+------------------+---------------------+
| full_name      | course_name      | teacher             |
+----------------+------------------+---------------------+
| Krishna Mehta  | English          | Mrs. Sunita Mehta   |
| Aarav Patel    | Science          | Mr. Rajesh Verma    |
| Vivaan Khan    | English          | Mrs. Sunita Mehta   |
| Vanya Khan     | English          | Mrs. Sunita Mehta   |
| Sai Verma      | Science          | Mr. Rajesh Verma    |
| Rohan Gupta    | History          | Ms. Anjali Sharma   |
| Aadhya Khan    | History          | Ms. Anjali Sharma   |
| Myra Verma     | English          | Mrs. Sunita Mehta   |
| Vihaan Sharma  | History          | Ms. Anjali Sharma   |
| Krishna Patel  | Science          | Mr. Rajesh Verma    |
| Ira Gupta      | History          | Ms. Anjali Sharma   |
| Pari Singh     | English          | Mrs. Sunita Mehta   |
| Krishna Gupta  | Science          | Mr. Rajesh Verma    |
| Pari Verma     | Science          | Mr. Rajesh Verma    |
| Myra Singh     | Computer Science | Mr. Arvind Kumar    |
| Ananya Mehta   | Mathematics      | Dr. Neha Kapoor     |
| Vanya Singh    | Mathematics      | Dr. Neha Kapoor     |
| Aadhya Khan    | Mathematics      | Dr. Neha Kapoor     |
| Sara Iyer      | Computer Science | Mr. Arvind Kumar    |
| Pari Gupta     | History          | Ms. Anjali Sharma   |
| Vanya Reddy    | History          | Ms. Anjali Sharma   |
| Sai Nair       | Computer Science | Mr. Arvind Kumar    |
| Vivaan Nair    | English          | Mrs. Sunita Mehta   |
| Pari Khan      | Mathematics      | Dr. Neha Kapoor     |
| Arjun Sharma   | Mathematics      | Dr. Neha Kapoor     |
| Aarav Sharma   | Computer Science | Mr. Arvind Kumar    |
| Aditya Reddy   | History          | Ms. Anjali Sharma   |
| Arjun Reddy    | English          | Mrs. Sunita Mehta   |
| Myra Iyer      | Science          | Mr. Rajesh Verma    |
| Ishaan Gupta   | Computer Science | Mr. Arvind Kumar    |
+----------------+------------------+---------------------+
30 rows in set (0.00 sec)
```

```
mysql> SELECT *
    -> FROM students
    -> WHERE age > (SELECT AVG(age) FROM students);
+------------+---------------+--------+-----+------------------+-------+-------------------------+----------------+
| student_id | full_name     | gender | age | course           | grade | email                   | phone          |
+------------+---------------+--------+-----+------------------+-------+-------------------------+----------------+
|          2 | Aarav Patel   | Male   |  18 | Science          | C     | aarav.patel@outlook.com | +91-8983485629 |
|          3 | Vivaan Khan   | Male   |  17 | English          | D     | vivaan.khan@yahoo.com   | +91-7164087355 |
|          5 | Sai Verma     | Male   |  18 | Science          | A     | sai.verma@outlook.com   | +91-9535536930 |
|          6 | Rohan Gupta   | Male   |  18 | History          | B     | rohan.gupta@gmail.com   | +91-8861856688 |
|          7 | Aadhya Khan   | Female |  17 | History          | B     | aadhya.khan@yahoo.com   | +91-7437054326 |
|         10 | Krishna Patel | Female |  18 | Science          | A     | krishna.patel@yahoo.com | +91-8871233560 |
|         11 | Ira Gupta     | Female |  18 | History          | B     | ira.gupta@outlook.com   | +91-9496301553 |
|         12 | Pari Singh    | Female |  18 | English          | B     | pari.singh@outlook.com  | +91-9806425226 |
|         13 | Krishna Gupta | Female |  17 | Science          | B     | krishna.gupta@gmail.com | +91-9048240197 |
|         15 | Myra Singh    | Male   |  18 | Computer Science | A     | myra.singh@yahoo.com    | +91-7983753505 |
|         17 | Vanya Singh   | Female |  17 | Mathematics      | A     | vanya.singh@yahoo.com   | +91-8414287450 |
|         19 | Sara Iyer     | Male   |  17 | Computer Science | C     | sara.iyer@yahoo.com     | +91-7861927915 |
|         20 | Pari Gupta    | Female |  18 | History          | C     | pari.gupta@yahoo.com    | +91-7943299172 |
|         22 | Sai Nair      | Male   |  18 | Computer Science | B     | sai.nair@yahoo.com      | +91-9385828012 |
|         23 | Vivaan Nair   | Female |  17 | English          | A     | vivaan.nair@gmail.com   | +91-7553745318 |
|         24 | Pari Khan     | Female |  18 | Mathematics      | B     | pari.khan@outlook.com   | +91-9496472514 |
|         28 | Arjun Reddy   | Female |  18 | English          | C     | arjun.reddy@gmail.com   | +91-8831418129 |
|         29 | Myra Iyer     | Female |  17 | Science          | A     | myra.iyer@gmail.com     | +91-8852673477 |
+------------+---------------+--------+-----+------------------+-------+-------------------------+----------------+
18 rows in set (0.00 sec)

mysql> SELECT course, AVG(age) AS avg_age
    -> FROM students
    -> GROUP BY course;
+------------------+---------+
| course           | avg_age |
+------------------+---------+
| English          | 16.5714 |
| Science          | 17.3333 |
| History          | 16.5714 |
| Computer Science | 16.8000 |
| Mathematics      | 16.6000 |
+------------------+---------+
5 rows in set (0.00 sec)
```

```
    -> SELECT * FROM students WHERE course = 'Science';
Query OK, 0 rows affected (0.01 sec)

mysql> CREATE INDEX idx_course ON students(course);
Query OK, 0 rows affected (0.02 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> CREATE INDEX idx_teacher ON courses(teacher);
Query OK, 0 rows affected (0.03 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> SELECT s.full_name, c.course_name, c.teacher
    -> FROM students s
    -> INNER JOIN courses c ON s.course = c.course_name
    -> WHERE c.teacher = 'Mr. Rajesh Verma';
+---------------+-------------+------------------+
| full_name     | course_name | teacher          |
+---------------+-------------+------------------+
| Aarav Patel   | Science     | Mr. Rajesh Verma |
| Sai Verma     | Science     | Mr. Rajesh Verma |
| Krishna Patel | Science     | Mr. Rajesh Verma |
| Krishna Gupta | Science     | Mr. Rajesh Verma |
| Pari Verma    | Science     | Mr. Rajesh Verma |
| Myra Iyer     | Science     | Mr. Rajesh Verma |
+---------------+-------------+------------------+
6 rows in set (0.00 sec)
```