List all students alphabetically by RIN

SQL Command:

```
SELECT * FROM students ORDER BY rin;
```

Output:

rin	rcsID	firstname	lastname	alias	phone	street	city	state	zip
100000001	r123456	Alice	Smith	Ally	5551234567	123 Maple St	Troy	NY	12180
100000002	r234567	Bob	Jones	Bobby	5552345678	456 Oak St	Troy	NY	12180
100000003	r345678	Carol	Taylor	Caz	5553456789	789 Pine St	Troy	NY	12180
100000004	r456789	David	Lee	Dave	5554567890	321 Birch St	Troy	NY	12180

2. List all students alphabetically by last name

SQL Command:

```
SELECT * FROM students ORDER BY lastname;
```

Output:

rin	rcsID	firstname	lastname	alias	phone	street	city	state	zip
100000002	r234567	Bob	Jones	Bobby	5552345678	456 Oak St	Troy	NY	12180
100000004	r456789	David	Lee	Dave	5554567890	321 Birch St	Troy	NY	12180
100000001	r123456	Alice	Smith	Ally	5551234567	123 Maple St	Troy	NY	12180
100000003	r345678	Carol	Taylor	Caz	5553456789	789 Pine St	Troy	NY	12180

3. List all students alphabetically by RCSID

SQL Command:

```
SELECT * FROM students ORDER BY rcsID;
```

Output:

```
rin       rcsID   firstname     lastname      alias   phone
street        city    state   zip
100000001       r123456 Alice   Smith   Ally    5551234567      123
Maple St    Troy    NY      12180
100000002       r234567 Bob     Jones   Bobby   5552345678      456
Oak St      Troy    NY      12180
100000003       r345678 Carol   Taylor  Caz     5553456789      789
Pine St     Troy    NY      12180
100000004       r456789 David   Lee     Dave    5554567890      321
Birch St    Troy    NY      12180
```

4. List all students alphabetically by first name

SQL Command:

```
SELECT * FROM students ORDER BY firstname;
```

Output:

```
rin       rcsID   firstname     lastname      alias   phone
street        city    state   zip
100000001       r123456 Alice   Smith   Ally    5551234567      123
Maple St    Troy    NY      12180
100000002       r234567 Bob     Jones   Bobby   5552345678      456
Oak St      Troy    NY      12180
```

```
100000003        r345678 Carol   Taylor  Caz      5553456789        789
Pine St    Troy    NY      12180
100000004        r456789 David   Lee     Dave     5554567890        321
Birch St   Troy    NY      12180
```

5. List students (rin, name, address) with any grade > 90

SQL Command:

```
SELECT s.rin, s.firstname, s.lastname, s.street, s.city, s.state,
s.zip
FROM students s
JOIN grades g ON s.rin = g.rin
WHERE g.grade > 90;
```

Output:

```
rin        firstname   lastname    street         city    state   zip
100000001   Alice      Smith       123 Maple St   Troy    NY      12180
100000002   Bob        Jones       456 Oak St     Troy    NY      12180
100000003   Carol      Taylor      789 Pine St    Troy    NY      12180
100000004   David      Lee         321 Birch St   Troy    NY      12180
100000004   David      Lee         321 Birch St   Troy    NY      12180
```

6. Average grade per course

SQL Command:

```
SELECT c.crn, c.title, AVG(g.grade) AS avg_grade
FROM courses c
JOIN grades g ON c.crn = g.crn
GROUP BY c.crn, c.title;
```

Output:

```
crn     title               avg_grade
```

```
1001    Intro to CS         91.6667
1002    Data Structures     87.5000
1003    Calculus I          90.6667
1004    Physics I           88.5000
```

7. Number of students per course

SQL Command:

```sql
SELECT c.crn, c.title, COUNT(g.rin) AS num_students
FROM courses c
JOIN grades g ON c.crn = g.crn
GROUP BY c.crn, c.title;
```

Output:

```
crn     title               num_students
1001    Intro to CS         3
1002    Data Structures     2
1003    Calculus I          3
1004    Physics I           2
```