

## Lab 8 – SQL Commands and Outputs

Jason Zheng

2.7(a) List all students in alphabetical order by RIN

**Command:**

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

**Table Output:**

rin	rcsID	First_name	Last_name	alias	phone	street	city	state	zip
123 45	zhengj 12	Jason	Zheng	Jason	2158335 883	Pinewoods Ave	Troy	NY	121 80
234 56	kanna k	Kaaviya	Kannan	Kaaviya	7328645 700	George Ave	Edison	NJ	088 20
345 67	semid p	Pablo	Semidey	Pablo the Goat	7876673 739	Burdett Ave	Troy	NY	121 80
456 78	gutiee 2	Eric	Guitarrez	Eric	2013963 411	Tibbits Ave	Troy	NY	121 80
567 89	oladet	Temitayo	Olademi	Tem	3472648 049	Random St	Merri ck	NY	123 45

2.7(b) List all students in alphabetical order by last name

**Command:**

```
SELECT * FROM students ORDER BY last_name, first_name;
```

**Output:**

rin	rcsID	first_name	last_name	alias	phone	street	city	state	zip
45678	gutiee2	Eric	Gutierrez	Eric	2013963411	Tibbits Ave	Troy	NY	12180
23456	kannak	Kaaviya	Kannan	Kaaviya	2147483647	George Ave	Edison	NJ	08820
56789	oladet	Temitayo	Oladeji	Tem	2147483647	Random St	Merrick	NY	12345
34567	semidp	Pablo	Semidey	Pablo the Goat	2147483647	Burdett Ave	Troy	NY	12180
12345	zheng12	Jason	Zheng	Jason	2147483647	Pinewoods Ave	Troy	NY	12180

2.7(c) List all students by RCSid

**Command:**

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

**Output:**

rin	rcsID	first_name	last_name	alias	phone	street	city	state	zip
45678	gutiee2	Eric	Gutierrez	Eric	2013963411	Tibbits Ave	Troy	NY	12180
23456	kannak	Kaaviya	Kannan	Kaaviya	2147483647	George Ave	Edison	NJ	08820
56789	oladet	Temitayo	Oladeji	Tem	2147483647	Random St	Merrick	NY	12345
34567	semidp	Pablo	Semidey	Pablo the Goat	2147483647	Burdett Ave	Troy	NY	12180
12345	zheng12	Jason	Zheng	Jason	2147483647	Pinewoods Ave	Troy	NY	12180

2.7(d) List all students by firstname

**Command:**

```
SELECT * FROM students ORDER BY first_name, last_name;
```

**Output:**

rin	rcsID	first_name	last_name	alias	phone	street	city	state	zip
45678	gutiee2	Eric	Gutierrez	Eric	2013963411	Tibbits Ave	Troy	NY	12180
12345	zheng12	Jason	Zheng	Jason	2147483647	Pinewoods Ave	Troy	NY	12180
23456	kannak	Kaaviya	Kannan	Kaaviya	2147483647	George Ave	Edison	NJ	08820
34567	semidp	Pablo	Semidey	Pablo the Goat	2147483647	Burdett Ave	Troy	NY	12180
56789	oladet	Temitayo	Oladeji	Tem	2147483647	Random St	Merrick	NY	12345

2.8 List all students (rin, name, address) with grade > 90 in any course

**Command:**

```
SELECT DISTINCT
    s.rin,
    s.first_name,
    s.last_name,
    s.street,
    s.city,
    s.state,
    s.zip
FROM students AS s
JOIN grades AS g ON s.rin = g.rin
WHERE g.grade > 90;
```

**Output:**

rin	first_name	last_name	street	city	state	zip
12345	Jason	Zheng	Pinewoods Ave	Troy	NY	12180
23456	Kaaviya	Kannan	George Ave	Edison	NJ	08820
34567	Pablo	Semidey	Burdett Ave	Troy	NY	12180
45678	Eric	Gutierrez	Tibbits Ave	Troy	NY	12180
56789	Temitayo	Oladjeji	Random St	Merrick	NY	12345

2.9 List out the average grade in each course

**Command:**

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

**Output:**

crn	prefix	number	title	avg_grade
73048	ITWS	2110	Web Systems Development	98.4000
73215	CSCI	2200	Foundations of Computer Science	81.0000
75422	CSCI	2800	Computer Architecture & Os	91.6667

2.10 Number of students in each course

**Command:**

SELECT

```

    c.crn,
    c.prefix,
    c.number,
    c.title,
    COUNT(DISTINCT g.rin) AS num_students
  FROM courses AS c
  LEFT JOIN grades AS g ON c.crn = g.crn
  GROUP BY c.crn, c.prefix, c.number, c.title;
```

**Output:**

crn	prefix	number	title	num_students
73048	ITWS	2110	Web Systems Development	5
73215	CSCI	2200	Foundations of Computer Science	2
74046	ECON	2010	Intermediate Microeconomic Theory	0
75422	CSCI	2800	Computer Architecture & Os	3