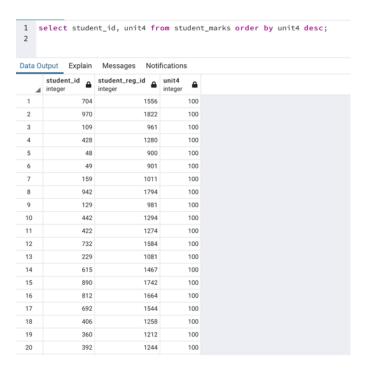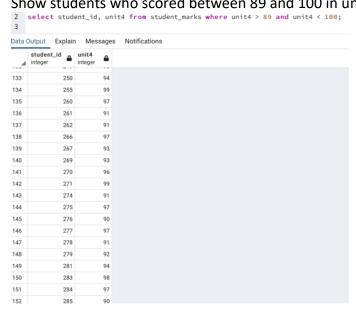Unit 5 SQL Relational Databases/ Guided Exercises

Sample Questions:

Show students with the highest marks in Unit 4:

```
1  select student_id, unit4 from student_marks order by unit4 desc;
2
```

Data Output   Explain   Messages   Notifications

	student_id integer	student_reg_id integer	unit4 integer
1	704	1556	100
2	970	1822	100
3	109	961	100
4	428	1280	100
5	48	900	100
6	49	901	100
7	159	1011	100
8	942	1794	100
9	129	981	100
10	442	1294	100
11	422	1274	100
12	732	1584	100
13	229	1081	100
14	615	1467	100
15	890	1742	100
16	812	1664	100
17	692	1544	100
18	406	1258	100
19	360	1212	100
20	392	1244	100

Show students who scored between 89 and 100 in unit 4:

```
2  select student_id, unit4 from student_marks where unit4 > 89 and unit4 < 100;
3
```

Data Output   Explain   Messages   Notifications

	student_id integer	unit4 integer
133	250	94
134	255	99
135	260	97
136	261	91
137	262	91
138	266	97
139	267	93
140	269	93
141	270	96
142	271	99
143	274	91
144	275	97
145	276	90
146	277	97
147	278	91
148	279	92
149	281	94
150	283	98
151	284	97
152	285	90

10 Other Scenarios:

Show students first names and email who prefer a hard cover copy of the book.

```
3   select first_name, email, book_preference_hardcopy from student where book_preference_hardcopy
4
5
```

Data Output   Explain   Messages   Notifications

	first_name character varying 🔒	email character varying 🔒	book_preference_hardcopy boolean 🔒
1	Tiebold	tsteers0@a8.net	true
2	Pippo	pmougeot1@apache.org	true
3	Ree	rcornish2@jugem.jp	true
4	Shina	sfreund3@sbwire.com	true
5	Nero	nvigours5@digg.com	true
6	Emmet	evalencia6@angelfire.c...	true
7	Koenraad	kdugdale7@ezinearticl...	true
8	Kenneth	kfrankish9@google.pl	true
9	Naoma	ntruina@smugmug.com	true
10	Gian	gjaskowiczd@alexa.com	true
11	Friederike	fizakovf@feedburner.c...	true
12	Millisent	mmccasterg@scribd.c...	true
13	Roobbie	rthomash@goodreads....	true
14	Jed	joverili@ca.gov	true
15	Montague	mdunkleyj@sohu.com	true
16	Karine	krenzinil@woothemes....	true
17	Ruddie	rdriversm@state.gov	true
18	Lucien	lsliddersn@apache.org	true
19	Beauregard	breubensq@nifty.com	true
20	Arline	ameneghir@ftc.gov	true

Show the number of students and those with unique last names. Perhaps family.

```
11   select count (last_name) from student;
```

Data Output   Explain   Messages   Notifications

	count bigint 🔒
1	1000

```
10   select count (distinct last_name) from student;
11
```

Data Output   Explain   Messages   Notifications

	count bigint 🔒
1	985

Show female students and their emails to start a women's study group.

```
4  select first_name, last_name, email from student where gender = 'Female';
5
```

Data Output   Explain   Messages   Notifications

	first_name character varying	last_name character varying	email character varying
1	Ree	Cornish	rcornish2@jugem.jp
2	Shina	Freund	sfreund3@sbwire.com
3	Susy	Widdison	swiddison8@mac.com
4	Naoma	Truin	ntruina@smugmug.com
5	Luise	Light	llightb@dropbox.com
6	Friederike	Izakov	fizakovf@feedburner.c...
7	Millisent	McCaster	mmccasterg@scribd.c...
8	Roobbie	Thomas	rthomash@goodreads....
9	Karine	Renzini	krenzinil@woothemes....
10	Fionnula	Bagnell	fbagnellp@stumbleupo...
11	Arline	Meneghi	ameneghir@ftc.gov
12	Kayla	Cline	kclines@usda.gov
13	Mollie	Maccrie	mmaccrieu@shinystat....
14	Ally	Filipovic	afilipovicw@artisteer.c...
15	Marcelline	Janicek	mjanicekx@paypal.com
16	Ki	Kavanagh	kkavanaghy@alibaba.c...
17	Rivy	Shorland	rshorlandz@springer.c...
18	Carita	Issacof	cissacof10@vkontakte....
19	Jehanna	Simonsson	jsimonsson17@apple.c...
20	Kassi	Sudddard	ksudddard18@prnews...

Show male students who do not want hardcover copies of the book.

```
9  select * from student where gender = 'Male' and book_preference_hardcopy = 'False';
```

Data Output   Explain   Messages   Notifications

	id [PK] integer	first_name character varying	last_name character varying	email character varying	gender character varying	work_phone character varying	book_preference_hardcopy boolean
1	5	Darby	Winley	dwinley4@businesswir...	Male	540-609-8343	false
2	13	Elijah	Helgass	ehelgassc@harvard.edu	Male	188-597-8889	false
3	15	Philip	Butterly	pbutterlye@linkedin.com	Male	778-290-1779	false
4	21	Blaine	Pesterfield	bpesterfieldk@google.cn	Male	378-191-9989	false
5	25	Norry	Sprake	nsprakeo@eepurl.com	Male	504-241-7899	false
6	30	Averill	Eveque	aevequet@mashable.c...	Male	606-174-4235	false
7	32	Mead	Kyneton	mkynetonv@usa.gov	Male	283-288-6047	false
8	38	Weber	Trevithick	wtrevithick11@jigsy.com	Male	785-958-5148	false
9	42	Cointon	Brownell	cbrownell15@google.nl	Male	455-396-7774	false
10	49	Boothe	Vonderdell	bvonderdell1c@taobao...	Male	122-164-1529	false
11	55	Ely	Spurrier	espurrier1i@tuttocitta.it	Male	167-391-0125	false
12	64	Franzen	Truelock	ftruelock1r@business...	Male	127-696-6552	false
13	72	Alexandre	Comerford	acomerford1z@webed...	Male	205-272-2211	false
14	73	Meredeth	Cavil	mcavil20@xing.com	Male	130-925-4543	false
15	75	Franklyn	MacGuffog	fmacguffog22@theatla...	Male	542-282-5432	false
16	76	Nehemiah	MacGillivrie	nmacgillivrie23@php.net	Male	185-928-7226	false
17	77	William	Fealey	wfealey24@wix.com	Male	428-714-4383	false
18	78	Regen	Fownes	rfownes25@examiner....	Male	974-434-7627	false
19	81	Jasun	Romain	jromain28@dell.com	Male	818-182-2097	false
20	83	Isidore	Raft	iraft2a@columbia.edu	Male	951-425-5517	false

Show students who have nyu in their email.

```
5   select first_name, last_name, email from student where email like '%nyu%';
6
```

Data Output   Explain   Messages   Notifications

	first_name character varying	last_name character varying	email character varying
1	Abby	Shone	ashone34@nyu.edu
2	Phillipp	Vanyushin	pvanyushinfs@mapy.cz
3	Bibby	Brecknall	bbrecknallp6@nyu.edu

Show student ID for the lowest marks in unit 2.

```
6   select student_id, unit2 from student_marks order by unit2 asc;
7
8
```

Data Output   Explain   Messages   Notifications

	student_id integer	unit2 integer
1	169	85
2	173	85
3	214	85
4	421	85
5	793	85
6	207	85
7	790	85
8	776	85
9	964	85
10	530	85
11	961	85
12	531	85
13	544	85
14	549	85
15	952	85
16	950	85
17	450	85
18	948	85
19	454	85

Show entire row of student marks where in unit 3, marks were more than 90 and their ID is less than 20.

```
8  select * from student_marks where unit3 between 90 and 100 and student_id < 20;
9
```

Data Output   Explain   Messages   Notifications

	id [PK] integer	student_reg_id integer	student_id integer	unit2 integer	unit3 integer	unit4 integer	unit5 integer
1	1	853	1	88	96	87	92
2	2	854	2	86	99	82	95
3	3	855	3	86	95	99	95
4	4	856	4	98	98	89	100
5	5	857	5	100	94	83	95
6	6	858	6	97	91	93	88
7	7	859	7	92	97	97	98
8	8	860	8	86	97	92	88
9	9	861	9	89	97	82	97
10	10	862	10	96	96	96	90
11	11	863	11	85	95	97	99
12	12	864	12	92	93	92	93
13	13	865	13	98	93	98	90
14	14	866	14	100	100	87	100
15	15	867	15	85	99	83	97
16	16	868	16	88	99	91	96
17	17	869	17	100	94	98	90
18	18	870	18	97	97	83	93
19	19	871	19	96	99	98	90

Show students who scored between 88 and 93 in unit 5.

```
7  select student_id, unit5 from student_marks where unit5 > 88 and unit5 < 93 order by student_id;
```

Data Output   Explain   Messages   Notifications

	student_id integer	unit5 integer
1	1	92
2	10	90
3	13	90
4	17	90
5	19	90
6	20	92
7	23	90
8	31	92
9	37	90
10	38	92
11	39	91
12	49	92
13	50	89
14	54	90
15	62	91
16	64	89
17	67	92
18	73	89
19	77	92

Show students who scored a 100 in at least one of the units.

```
12  select * from student_marks where 100 in (unit2, unit3, unit4, unit5);
```

Data Output   Explain   Messages   Notifications

	id [PK] integer	student_reg_id integer	student_id integer	unit2 integer	unit3 integer	unit4 integer	unit5 integer
1	4	856	4	98	98	89	100
2	5	857	5	100	94	83	95
3	14	866	14	100	100	87	100
4	17	869	17	100	94	98	90
5	25	877	25	100	92	93	93
6	28	880	28	96	100	88	98
7	31	883	31	86	94	100	92
8	35	887	35	99	96	98	100
9	40	892	40	100	98	89	97
10	43	895	43	100	93	85	98
11	44	896	44	88	100	92	97
12	46	898	46	100	95	87	96
13	48	900	48	87	97	100	88
14	49	901	49	86	95	100	92
15	51	903	51	88	90	94	100
16	53	905	53	91	100	90	96
17	55	907	55	87	90	97	100
18	56	908	56	98	94	82	100
19	60	912	60	100	96	89	100
20	61	913	61	100	93	93	98

Show students who did not score a 100 in any of the units.

```
13  select * from student_marks where 100 not in (unit2, unit3, unit4, unit5);
```

Data Output   Explain   Messages   Notifications

	id [PK] integer	student_reg_id integer	student_id integer	unit2 integer	unit3 integer	unit4 integer	unit5 integer
1	1	853	1	88	96	87	92
2	2	854	2	86	99	82	95
3	3	855	3	86	95	99	95
4	6	858	6	97	91	93	88
5	7	859	7	92	97	97	98
6	8	860	8	86	97	92	88
7	9	861	9	89	97	82	97
8	10	862	10	96	96	96	90
9	11	863	11	85	95	97	99
10	12	864	12	92	93	92	93
11	13	865	13	98	93	98	90
12	15	867	15	85	99	83	97
13	16	868	16	88	99	91	96
14	18	870	18	97	97	83	93
15	19	871	19	96	99	98	90
16	20	872	20	89	92	82	92
17	21	873	21	85	93	92	94
18	22	874	22	87	99	90	99
19	23	875	23	90	96	86	90
20	24	876	24	96	98	87	88