

3. Quiz: Checking Setup

1) select count(name) from Track where composer = "U2";

Answer: 44

SQL 1 ✖	
1	select count(name) from Track where composer = "U2";
	count(name)
1	44

2) select max(total) from Invoice where billingcountry = 'Spain';

Answer: 13.86

SQL 1 ✖	
1	select max(total) from Invoice where billingcountry = 'Spain';
	max(total)
1	13.86

3) select title from employee where lastname = 'Johnson';

Answer: Sales Support Agent

SQL 1

1 `select title from employee where lastname = 'Johnson';`

III

	Title
1	Sales Support Agent

4: Quiz: Schema Match

QUIZ QUESTION

Which of these columns are in the **Invoice** table?

☒ CustomerID

☒ InvoiceID

☐ UnitPrice

☒ BillingAddress

☐ Name

☒ BillingPostalCode

SQL 1

1 `select * from Invoice;`

	InvoiceId	CustomerId	InvoiceDate	BillingAddress	BillingCity	BillingState	BillingCountry	BillingPostalCode	Total
1	1	2	2009-01-01 00:00:00	Theodor-Heuss-Straße 34	Stuttgart	NULL	Germany	70174	1.98
2	2	4	2009-01-02 00:00:00	Ullevålsveien 14	Oslo	NULL	Norway	0171	3.96

5. SQL: Question Set 1

Question 1: Which countries have the most Invoices?

Answer:

```
select billingcountry,count(invoicedate) as Invoices  
from Invoice group by billingcountry  
order by Invoices desc;
```



SQL 1

```
1 select billingcountry, count(invoicedate) as Invoices
2 from Invoice group by billingcountry
3 order by Invoices desc;
```

	BillingCountry	Invoices
1	USA	91
2	Canada	56
3	Brazil	35
4	France	35
5	Germany	28
6	United Kingdom	21
7	Czech Republic	14
8	Portugal	14
9	India	13
10	Argentina	7
11	Australia	7
12	Austria	7
13	Belgium	7
14	Chile	7

24 rows returned in 2ms from: select billingcountry, count(invoicedate) as Invoices
from Invoice group by billingcountry
order by Invoices desc;

Question 2: Which city has the best customers?

Answer:

```
select billingcity,max(TotalSum) as Total from (  
select billingcity,sum(total) as TotalSum from Invoice group by billingcity);
```

SQL 1

```
1 select billingcity,max(TotalSum) as Total from (  
2 select billingcity,sum(total) as TotalSum from Invoice group by billingcity);
```

	billingcity	Total
1	Prague	90.24

1 rows returned in 4ms from: select billingcity,max(TotalSum) as Total from (
select billingcity,sum(total) as TotalSum from Invoice group by billingcity);

Question 3: Who is the best customer?

Answer:

```
select Customerid,max(totalsum) as Total from (  
select distinct Customerid,sum(total) as totalsum from Invoice group by Customerid);
```

SQL 1

SQL 2

```
1 select Customerid,max(totalsum) as Total from (  
2 select distinct Customerid,sum(total) as totalsum from Invoice group by Customerid);
```

	Customerid	Total
1	6	49.62



6. SQL: Question Set 2

Question 1

Use your query to return the email, first name, last name, and Genre of all Rock Music listeners. Return your list ordered alphabetically by email address starting with A.

Answer:

```
select distinct email,firstname,lastname,e.name from Customer a,Invoice b,InvoiceLine c,
Track d,Genre e
where a.Customerid=b.Customerid and b.Invoiceid=c.Invoiceid
and c.Trackid=d.Trackid and d.Genreid=e.Genreid and e.name = 'Rock' order by email;
```

SQL 1  SQL 2 

```
1 select distinct email,firstname,lastname,e.name from Customer a,Invoice b,InvoiceLine c,Track d,Genre e
2 where a.Customerid=b.Customerid and b.Invoiceid=c.Invoiceid
3 and c.Trackid=d.Trackid and d.Genreid=e.Genreid and e.name = 'Rock' order by email;
```

≡



	Email	FirstName	LastName	Name
1	aaronmitchell@yahoo.ca	Aaron	Mitchell	Rock
2	alero@uol.com.br	Alexandre	Rocha	Rock
3	astrid.gruber@apple.at	Astrid	Gruber	Rock
4	bjorn.hansen@yahoo.no	Bjørn	Hansen	Rock
5	camille.bernard@yahoo.fr	Camille	Bernard	Rock
6	daan_peeters@apple.be	Daan	Peeters	Rock
7	diego.gutierrez@yahoo.ar	Diego	Gutiérrez	Rock
8	dmiller@comcast.com	Dan	Miller	Rock
9	dominiquelefebvre@gmail.com	Dominique	Lefebvre	Rock
10	edfrancis@yahoo.ca	Edward	Francis	Rock
11	eduardo@woodstock.com.br	Eduardo	Martins	Rock
12	ellie.sullivan@shaw.ca	Ellie	Sullivan	Rock
13	emma_jones@hotmail.com	Emma	Jones	Rock
14	erique_muñoz@yahoo.es	Erique	Muñoz	Rock

59 rows returned in 28ms from: select distinct email,firstname,lastname,e.name from Customer a,Invoice b,InvoiceLine c,Track d,Genre e where a.Customerid=b.Customerid and b.Invoiceid=c.Invoiceid and c.Trackid=d.Trackid and d.Genreid=e.Genreid and e.name = 'Rock' order by email;

Question 2: Who is writing the rock music?

Answer:

```
select distinct a.ArtistId,a.name,count(c.name) as Songs from Artist a,Album b,Track c,Genre d
where a.ArtistId=b.ArtistId and b.AlbumId=c.AlbumId and c.GenreId=d.GenreId and d.name = 'Rock'
group by a.ArtistId,a.name order by Songs desc limit 10;
```

SQL 1  SQL 2 

```
1 select distinct a.ArtistId,a.name,count(c.name) as Songs from Artist a,Album b,Track c,Genre d
2 where a.ArtistId=b.ArtistId and b.AlbumId=c.AlbumId and c.GenreId=d.GenreId and d.name = 'Rock'
3 group by a.ArtistId,a.name order by Songs desc limit 10;
```

III

	ArtistId	Name	Songs
1	22	Led Zeppelin	114
2	150	U2	112
3	58	Deep Purple	92
4	90	Iron Maiden	81
5	118	Pearl Jam	54
6	152	Van Halen	52
7	51	Queen	45
8	142	The Rolling Stones	41
9	76	Creedence Clearwater Revival	40
10	52	Kiss	35

10 rows returned in 39ms from: select distinct a.ArtistId,a.name,count(c.name) as Songs from Artist a,Album b,Track c,Genre d where a.ArtistId=b.ArtistId and b.AlbumId=c.AlbumId and c.GenreId=d.GenreId and d.name = 'Rock' group by a.ArtistId,a.name order by Songs desc limit 10;

Question 3

- 1) First, find which artist has earned the most according to the **InvoiceLines**?
- 2) Now use this artist to find which customer spent the most on this artist.

Note this question has 2 part.

For Part 1) First, find which artist has earned the most according to the **InvoiceLines**?

Answer:

```
select distinct f.name, sum(c.unitprice) as AmountSpent from Customer a, Invoice b, InvoiceLine c, Track d, Album e, Artist f
```

```
where a.Customerid=b.Customerid and b.Invoiceid=c.Invoiceid and c.Trackid=d.trackid and d.Albumid=e.Albumid and e.Artistid=f.Artistid  
group by f.name order by AmountSpent desc;
```

SQL 1 SQL 2 SQL 3		
<pre>1 select distinct f.name, sum(c.unitprice) as AmountSpent from Customer a, Invoice b, InvoiceLine c, Track d, Album e, Artist f 2 where a.Customerid=b.Customerid and b.Invoiceid=c.Invoiceid and c.Trackid=d.trackid and d.Albumid=e.Albumid and e.Artistid=f.Artistid 3 group by f.name order by AmountSpent desc;</pre>		
	Name	AmountSpent
1	Iron Maiden	138.6
2	U2	105.93
3	Metallica	90.08999999999999
4	Led Zeppelin	86.12999999999999
5	Lost	81.59
6	The Office	49.75
7	Os Paralamas Do Sucesso	44.55
8	Deep Purple	43.56
9	Faith No More	41.58
10	Eric Clapton	39.6
11	R.E.M.	38.61
12	Creedence Clearwater Revival	36.63
13	Queens	26.62
165 rows returned in 62ms from: select distinct f.name, sum(c.unitprice) as AmountSpent from Customer a, Invoice b, InvoiceLine c, Track d, Album e, Artist f where a.Customerid=b.Customerid and b.Invoiceid=c.Invoiceid and c.Trackid=d.trackid and d.Albumid=e.Albumid and e.Artistid=f.Artistid group by f.name order by AmountSpent desc;		

For Part 2

2) Now use this artist to find which customer spent the most on this artist.

Answer:

```
select distinct f.name,sum(c.unitprice) as AmountSpent,a.Customerid,a.firstname,a.lastname
from Customer a,Invoice b,InvoiceLine c,Track d,Album e,Artist f
where a.Customerid=b.Customerid and b.Invoiceid=c.Invoiceid and c.Trackid=d.trackid and
d.Albumid=e.Albumid and e.Artistid=f.Artistid
and f.name = 'Iron Maiden'
group by f.name,a.Customerid,a.firstname,a.lastname order by AmountSpent desc;
```

SQL 1

SQL 2

SQL 3

```
1 select distinct f.name,sum(c.unitprice) as AmountSpent,a.Customerid,a.firstname,a.lastname
2 from Customer a,Invoice b,InvoiceLine c,Track d,Album e,Artist f
3 where a.Customerid=b.Customerid and b.Invoiceid=c.Invoiceid and c.Trackid=d.trackid and d.Albumid=e.Albumid and e.Artistid=f.Artistid
4 and f.name = 'Iron Maiden'
5 group by f.name,a.Customerid,a.firstname,a.lastname order by AmountSpent desc;
```

	Name	AmountSpent	Customerid	FirstName	LastName
1	Iron Maiden	17.82	55	Mark	Taylor
2	Iron Maiden	15.84	35	Madalena	Sampaio
3	Iron Maiden	13.86	16	Frank	Harris
4	Iron Maiden	13.86	36	Hannah	Schneider
5	Iron Maiden	8.91	5	František	Wichterlová
6	Iron Maiden	8.91	27	Patrick	Gray
7	Iron Maiden	5.94	19	Tim	Goyer
8	Iron Maiden	5.94	39	Camille	Bernard
9	Iron Maiden	5.94	58	Manoj	Pareek
10	Iron Maiden	4.95	7	Astrid	Gruber
11	Iron Maiden	4.95	25	Victor	Stevens
12	Iron Maiden	3.96	15	Jennifer	Peterson
13	Iron Maiden	2.06	54	Steve	Murray

27 rows returned in 42ms from: select distinct f.name,sum(c.unitprice) as AmountSpent,a.Customerid,a.firstname,a.lastname
from Customer a,Invoice b,InvoiceLine c,Track d,Album e,Artist f
where a.Customerid=b.Customerid and b.Invoiceid=c.Invoiceid and c.Trackid=d.trackid and d.Albumid=e.Albumid and e.Artistid=f.Artistid
and f.name = 'Iron Maiden'
group by f.name,a.Customerid,a.firstname,a.lastname order by AmountSpent desc;

7. (Advanced) SQL: Question Set 3

Question 1

Answer:

```
select distinct max(Purchases1) as Purchases,country,name,Genreid from (
```

```
select count(c.unitprice) as Purchases1,a.country,e.name,d.Genreid from Customer a,Invoice
b,InvoiceLine c,Track d,Genre e
```

where a.Customerid=b.Customerid and b.Invoiceid=c.Invoiceid and c.Trackid=d.trackid and d.Genreid=e.Genreid

```
group by a.country,e.name,d.Genreid)
```

group by country;

```

1 select distinct max(Purchases1) as Purchases, country, name, Genreid from (
2 select count(c.unitprice) as Purchases1, a.country, e.name, d.Genreid from Customer a, Invoice b, InvoiceLine c, Track d, Genre e
3 where a.Customerid=b.Customerid and b.Invoiceid=c.Invoiceid and c.Trackid=d.trackid and d.Genreid=e.Genreid
4 group by a.country, e.name, d.Genreid)
5 group by country;

```

	Purchases	country	name	Genreid
1	9	Argentina	Alternative & Punk	4
2	22	Australia	Rock	1
3	15	Austria	Rock	1
4	21	Belgium	Rock	1
5	81	Brazil	Rock	1
6	107	Canada	Rock	1
7	9	Chile	Rock	1
8	25	Czech Republic	Rock	1
9	21	Denmark	Rock	1
10	18	Finland	Rock	1
11	65	France	Rock	1
12	62	Germany	Rock	1
13	11	Italy	Rock	1

24 rows returned in 27ms from: select distinct max(Purchases1) as Purchases, country, name, Genreid from (select count(c.unitprice) as Purchases1, a.country, e.name, d.Genreid from Customer a, Invoice b, InvoiceLine c, Track d, Genre e where a.Customerid=b.Customerid and b.Invoiceid=c.Invoiceid and c.Trackid=d.trackid and d.Genreid=e.Genreid group by a.country, e.name, d.Genreid) group by country;

Question 2

Answer:

`select name,milliseconds from Track where milliseconds > (select avg(milliseconds) from Track) order by milliseconds desc;`

SQL 1 x SQL 2 x SQL 3 x SQL 4 x

1 select name,milliseconds from Track where milliseconds > (select avg(milliseconds) from Track) order by milliseconds desc;

494 rows returned in 15ms from: select name,milliseconds from Track where milliseconds > (select avg(milliseconds) from Track) order by milliseconds desc

Question 3

Answer:

select MAX(TotalSpent1) as TotalSpent, country, firstname, lastname, customerid FROM (

select sum(b.total) as TotalSpent1, a.country, a.firstname, a.lastname, a.customerid from Customer a left join Invoice b on a.Customerid=b.Customerid

group by a.country, a.firstname, a.lastname, a.customerid) group by country;

```
1 select MAX(TotalSpent1) as TotalSpent, country, firstname, lastname, customerid FROM (
2 select sum(b.total) as TotalSpent1, a.country, a.firstname, a.lastname, a.customerid from Customer a left join Invoice b on a.Customerid=b.Customerid
3 group by a.country, a.firstname, a.lastname, a.customerid) group by country
```

	TotalSpent	country	firstname	lastname	customerid
13	45.62	Hungary	Ladislav	Kovacs	45
14	38.62	India	Manoj	Pareek	58
15	45.62	Ireland	Hugh	O'Reilly	46
16	37.62	Italy	Lucas	Mancini	47
17	40.62	Netherlands	Johannes	Van der Berg	48
18	39.62	Norway	Bjørn	Hansen	4
19	37.62	Poland	Stanisław	Wójcik	49
20	39.62	Portugal	João	Fernandes	34
21	37.62	Spain	Enrique	Muñoz	50
22	38.62	Sweden	Joakim	Johansson	51
23	47.62	USA	Richard	Cunningham	26
24	37.62	United Kingdom	Emma	Jones	52

24 rows returned in 3ms from: select MAX(TotalSpent1) as TotalSpent, country, firstname, lastname, customerid FROM (select sum(b.total) as TotalSpent1, a.country, a.firstname, a.lastname, a.customerid from Customer a left join Invoice b on a.Customerid=b.Customerid group by a.country, a.firstname, a.lastname, a.customerid) group by country