Week 2 Quiz

Back to Week 2

17/17 points earned (100%)

Quiz passed!

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1 / 1 points

1.
What type of file normally stores two dimensional data with column and row breaks, identified using special characters?

Refer to the following video for a refresher: video 1.

- XML File
- Log File
- Delimited Text File

Correct
While it's possible to store two dimensional data in all these file types, the delimited text file is the type of file that uses this simple structure.

- Excel File

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1 / 1 points

2.

What term best describes data storage that is optimized for handling front-end business operations?

Refer to the following video for a refresher: video 1.

- Online Analytical Processing (OLAP)
- Document Store
- Online Transactional Processing (OLTP)

Correct
OLTP systems are optimized for handling the transactional data common to front-end business operations.

- Hadoop Distributed File System (HDFS)

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1 / 1 points

3.
Suppose you are a software developer looking for an online environment to help you rapidly build and scale applications. Which of the following services would best accommodate your needs?

Refer to the following video for a refresher: video 2.

- Platform as a Service (PaaS)

Correct
As a software developer, you are looking for a platform to help you develop applications. SaaS would provide applications, not the ability to build them. IaaS might provide more capabilities than you need, and DaaS was not a term we covered in the module.

- Software as a Service (SaaS)
- Development as a Service (DaaS)
- Infrastructure as a Service (IaaS)

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1 / 1
points

4.

Which of the following statements about Cloud computing are true? (select all that apply)

Refer to the following video for a refresher: video 2.

- [ ] Cloud computing outsources all of a company's data operations

Un-selected is correct

- [x] Cloud computing speaks to where data is stored or manipulated

Correct

- [ ] Cloud computing is more secure than a company's data center

Un-selected is correct

- [ ] Cloud computing is needed for handling Big Data

Un-selected is correct

- [x] Cloud computing can allow cheaper and more scalable operations

Correct

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1 / 1
points

5.

Suppose your objective is to build a predictive model that can be used to recommend products to customers in real-time based on their navigation on your web site. Which of these technologies would be most critical in helping you achieve this objective?

Refer to the following video for a refresher: video 3.

- ○ Data Federation
- ○ Data Virtualization
- ○ Hadoop Distributed File System (HDFS)
- ○ In-Memory Computing
- ◉ In-Database Analytics

Correct
To allow your model to execute in real time, you are most likely to use In-Database analytics.

✔ 1 / 1 points

6.
Suppose you are a data analyst working on a project to show why sales in a particular region are down relative to other regions. Your job is to figure out what's going on, find a good way to show the data, and produce a report that can be automated to go out weekly to track progress on any actions that are taken. You anticipate that only descriptive analytics will be needed for this project, and you're working from a data set that has been prepared by your partners in IT.

Which of the following classes of tools are you most likely to use directly in this project? (select all that apply)

Refer to the following video for a refresher: video 5.

- ☐ Database systems

Un-selected is correct

- ☐ Data visualization & exploration

Correct
For this project you are most likely to use Data visualization & exploration tools to determine what's going on and the best way to show the data, then standard reporting tools to deliver the weekly report.

Since IT has provided the data, you probably won't need database tools directly, and since you are only doing descriptive analysis, statistical modeling tools are not necessary. Finally, since you are only producing a report, dashboarding tools are not required.

☑ Standard reporting

Correct
For this project you are most likely to use Data visualization & exploration tools to determine what's going on and the best way to show the data, then standard reporting tools to deliver the weekly report.

Since IT has provided the data, you probably won't need database tools directly, and since you are only doing descriptive analysis, statistical modeling tools are not necessary. Finally, since you are only producing a report, dashboarding tools are not required.

☐ Dashboarding

Un-selected is correct

☐ Statistical modeling

Un-selected is correct

✔ 1 / 1 points

7.

Suppose you're a data analyst and you're traveling to a conference. There's a straightforward but critical ad-hoc analysis you need to accomplish, but you're not certain how much internet connectivity you'll have during your trip. You also haven't decided which of your desktop tools you'll use in the analysis.

Which of the following process methodologies would work best for your situation?

Refer to the following video for a refresher: video 6.

- [ ] Downstream Integration Approach

Un-selected is correct

- [x] Intermediate File Approach

Correct
Because the ability to connect is uncertain and a tool has not been selected, the safest approach is to store the data in a data file and analyze it offline using whatever tool is required.

- [ ] Direct Connection Approach

Un-selected is correct

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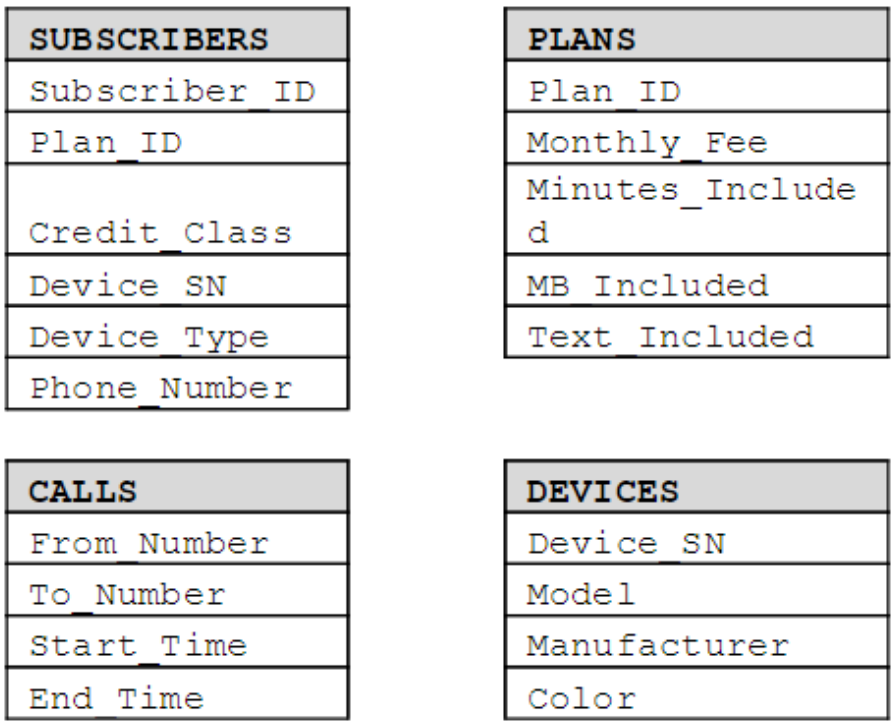
1 / 1 points

8.

For the following 9 questions, consider the set of relational database tables below, illustrated using the shorthand we introduced in the module.

For simplicity, assume that a phone number is a permanent attribute of the subscriber and that subscribers on both the "to" and "from" sides of calls are included in the database.

What kind of key best describes the primary key of the PLANS table ?



Refer to the following video for a refresher: video 4.

- ○ Natural
- ◉ Surrogate

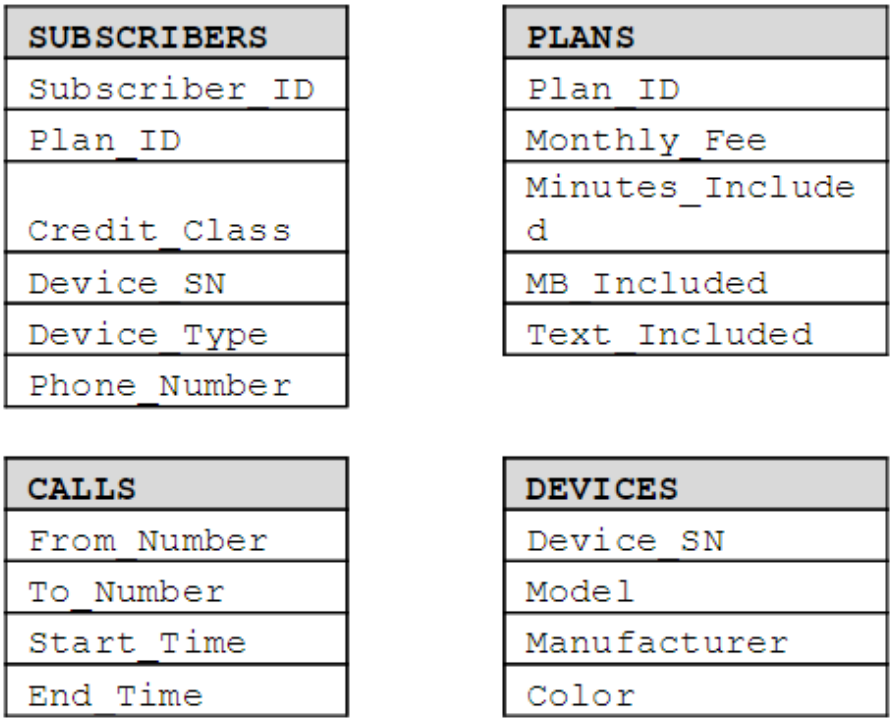
Correct
Plan_ID is the primary key of the PLANS table, and it's most likely an ID number which doesn't have meaning outside the database - therefore it is a Surrogate key rather than a Natural key. Since we only need one field to establish the primary key, it is not a composite key.

- ○ Composite

1 / 1
points

9.

Which table, if any, has a Composite Primary Key?



- [ ] SUBSCRIBERS

Un-selected is correct

- [ ] PLANS

Un-selected is correct

- [x] CALLS

Correct

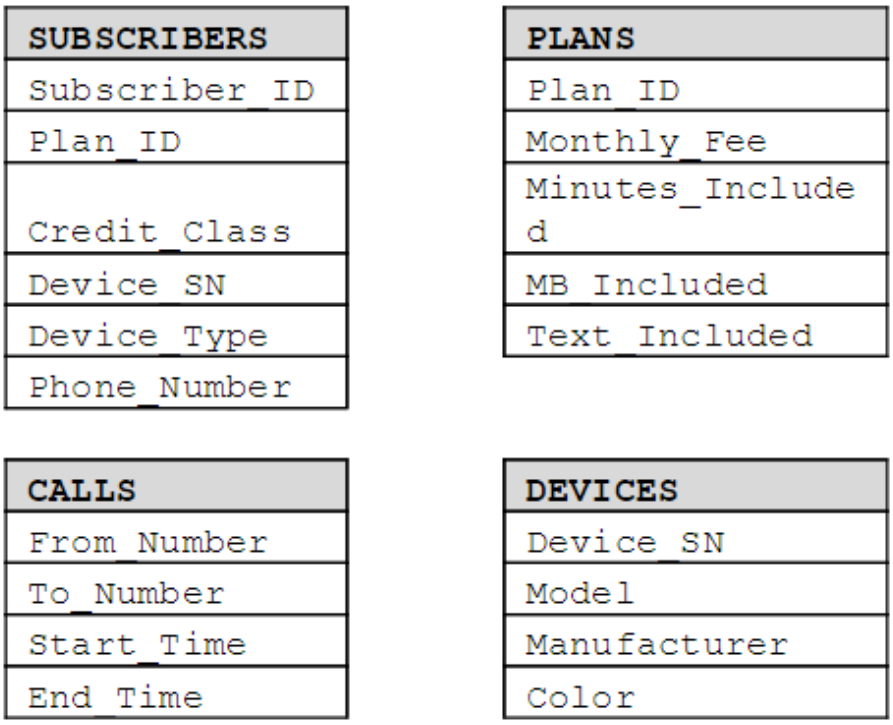
The CALLS table is the only table which needs a composite primary key. Specifically, we'd need at least one of the phone numbers AND one of the time stamps to uniquely identify a row in the table.

☐ DEVICES

Un-selected is correct

✔ 1 / 1 points

10.
Select all the fields which COULD have foreign key relationships in THIS model:



☐ Device_SN

Correct
Device_SN links the SUBSCRIBERS and DEVICES Tables. Plan_ID links the SUBSCRIBERS and PLANS tables. To link the SUBSCRIBERS and CALLS tables the Phone_Number could be linked to either the From_Number or To_Number. The other fields are not Foreign Keys in this model.

☐ Device_Type

Un-selected is correct

 Phone_Number

Correct
Device_SN links the SUBSCRIBERS and DEVICES Tables. Plan_ID links the SUBSCRIBERS and PLANS tables. To link the SUBSCRIBERS and CALLS tables the Phone_Number could be linked to either the From_Number or To_Number. The other fields are not Foreign Keys in this model.

 From_Number

Correct
Device_SN links the SUBSCRIBERS and DEVICES Tables. Plan_ID links the SUBSCRIBERS and PLANS tables. To link the SUBSCRIBERS and CALLS tables the Phone_Number could be linked to either the From_Number or To_Number. The other fields are not Foreign Keys in this model.

 End_Time

Un-selected is correct

 Plan_ID

Correct
Device_SN links the SUBSCRIBERS and DEVICES Tables. Plan_ID links the SUBSCRIBERS and PLANS tables. To link the SUBSCRIBERS and CALLS tables the Phone_Number could be linked to either the From_Number or To_Number. The other fields are not Foreign Keys in this model.

 Model

Un-selected is correct

 To_Number

Correct

Device_SN links the SUBSCRIBERS and DEVICES Tables. Plan_ID links the SUBSCRIBERS and PLANS tables. To link the SUBSCRIBERS and CALLS tables the Phone_Number could be linked to either the From_Number or To_Number. The other fields are not Foreign Keys in this model.

☐ Manufacturer

Un-selected is correct

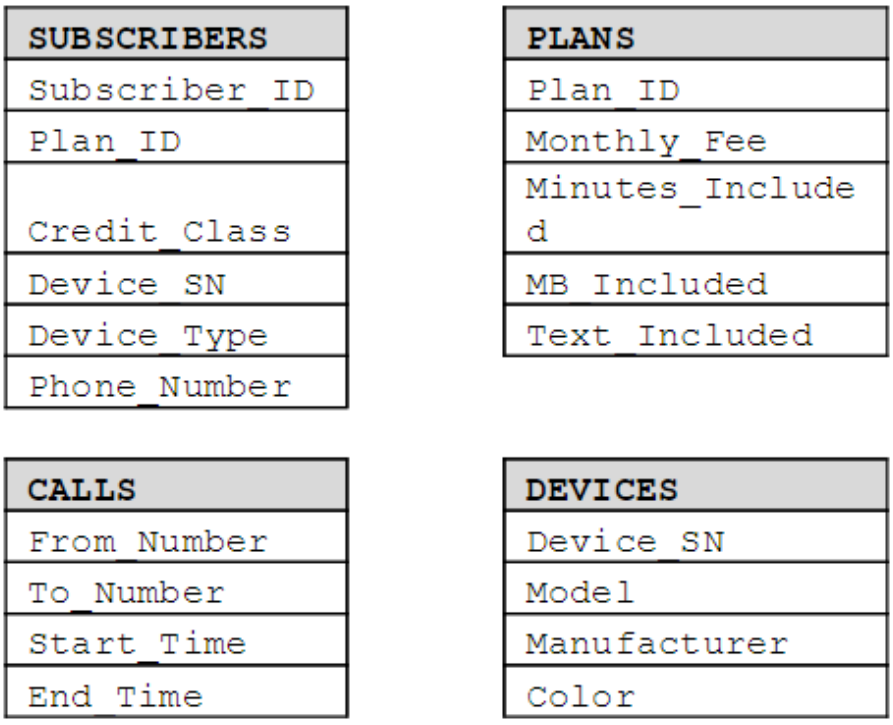
✔ 1 / 1 points

11.

In the next 6 questions, define the relationship between the tables.

Refer to the following video for a refresher: video 4.

SUBSCRIBERS to PLANS



◉ One to One

Correct

- One to Many
- Many to One
- Many to Many
- No direct relationship

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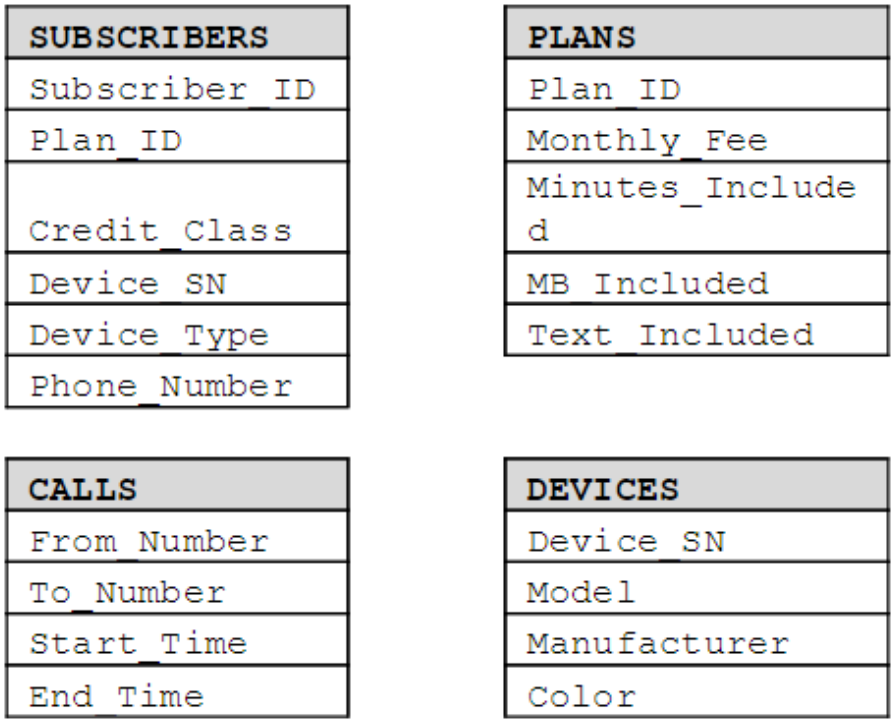
1 / 1 points

12.

CALLS to SUBSCRIBERS



- One to One
- One to Many
- Many to One

Correct

- Many to Many
- No direct relationship

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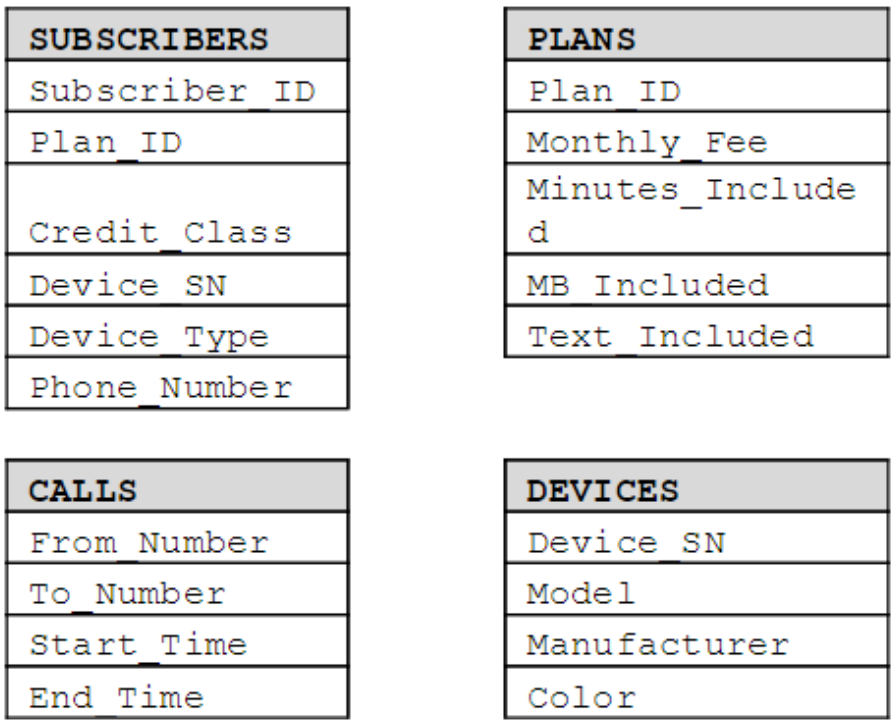
1 / 1 points

13.

DEVICES to SUBSCRIBERS



- One to One

Correct

- One to Many
- Many to One
-

Many to Many

No direct relationship

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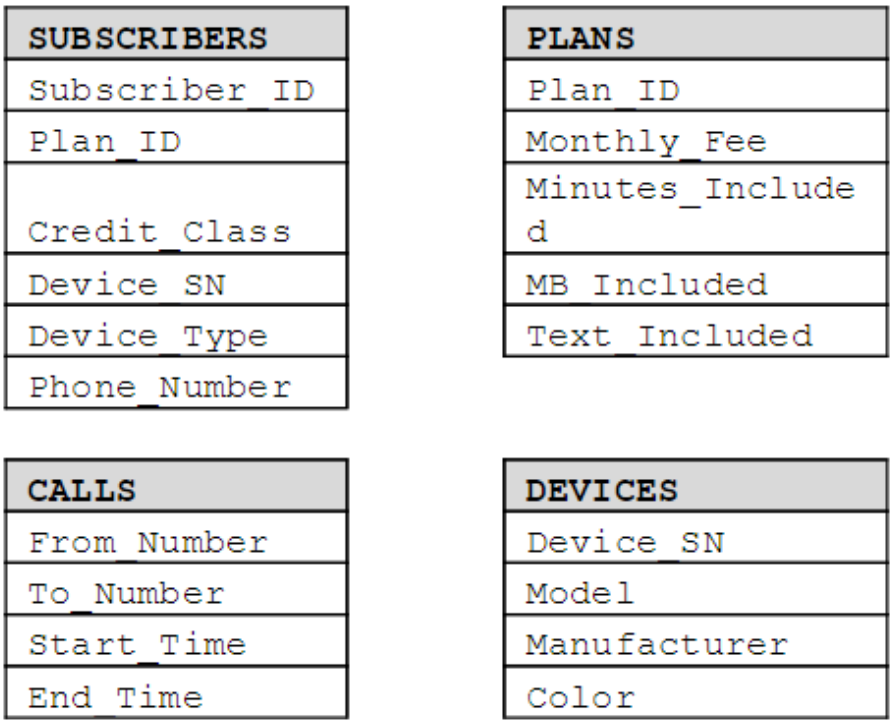
1 / 1 points

14.

CALLS to DEVICES



One to One

One to Many

Many to One

Many to Many

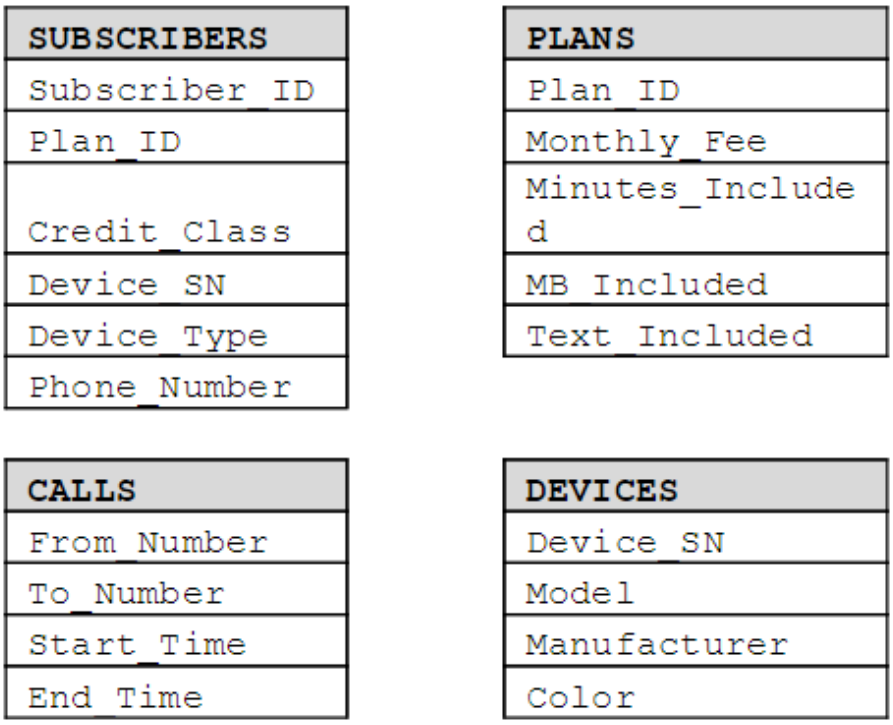
No direct relationship

Correct

1 / 1 points

15.

PLANS to CALLS



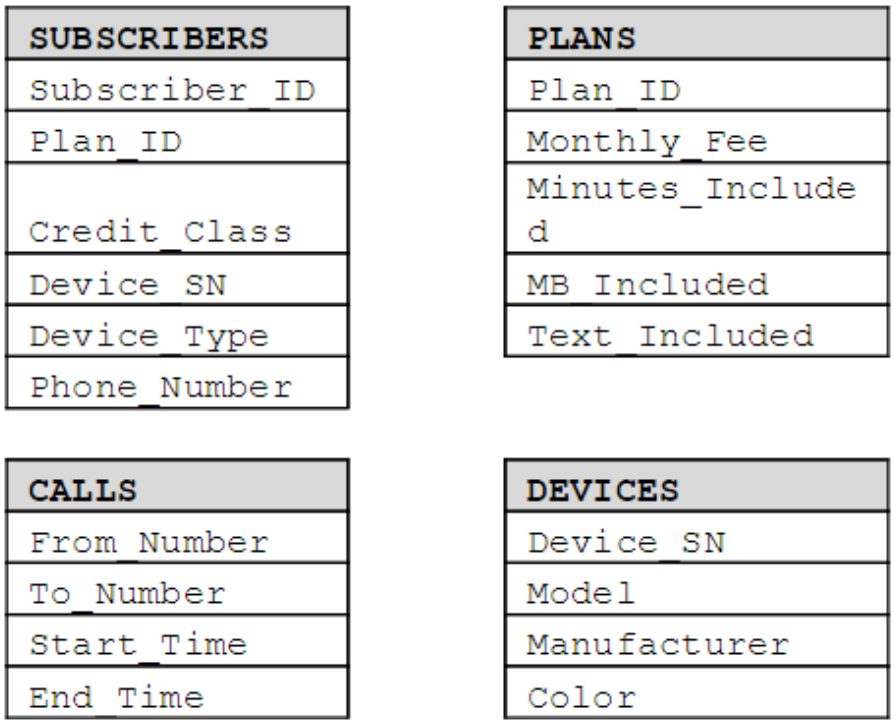
- One to One
- One to Many
- Many to One
- Many to Many
- No direct relationship

Correct

1 / 1 points

16.

DEVICES TO PLANS



- ○ One to One
- ○ One to Many
- ○ Many to One
- ○ Many to Many
- ◉ No direct relationship

Correct

✔ 1 / 1 points

17.

Is this data model in third normal form?

Refer to the following video for a refresher: video 4.

- Yes
- No

Correct

Correct! The model is not in third normal form. Specifically, the Device_Type field in the SUBSCRIBERS table describes the device and not the SUBSCRIBER. This field would be better placed in the DEVICES table.