

# Class Tasks A1.1

## Database Key Concepts

### Suggested Answers



## Class Task 1.1.1 – Data and Information

- Look at the following list of Items for each given scenario.
- Identify whether these are data or information and explain why. The first one has been done for you. If the item is information, what calculations are being carried out?
- Discuss your findings with the group.
- **Time allowed:** 12 minutes.

### Scenario 1 – A Vehicle Database for a Car Rental Company.

A company rents out vehicles to customers. Vehicles can have different fuel types (e.g., petrol, diesel or electric). Each vehicle could be a car or van and has a different cost. Customers hire vehicles out on a date and then return them on another date.

#### Suggested Answers

Item	Data or Information?	Reason
Vehicle Registration Number	Data	Represents a single fact about a vehicle – the registration number
Fuel Type	Data	Represents a single fact about a vehicle – the fuel type, could be Petrol, Diesel or Electric
Number of Petrol Cars in Stock	Information	Represents the answer to a question – adding up all the cars with the petrol type of Diesel
Ford Fiesta 1.6 Diesel	Information	Represents a collection of individual data items to describe an object in the database
Hire Cost	Data	Represents a single fact about a vehicle – how much it costs to hire one vehicle
Number of vehicles hired on the 28 <sup>th</sup> of November	Information	Represents the answer to a question – adding up all the vehicles hired on the given day
Hire Start Date	Data	Represents a single fact about a vehicle – when the vehicle hire started
Hire End Date	Data	Represents a single fact about a vehicle – when the vehicle hire ended
Vehicle Type	Data	Represents a single fact about a vehicle – what sort it is e.g., Car or Van.



## Scenario 2 – A DVD Database for a Media Sales Company.

A company has a stock of DVDs for sale both in store and online. The company always has a certain number of these in DVDs in stock and records the number of items sold in any customer order.

### Suggested Answers

Item	Data or Information?	Reason
Title	Data	Represents a single fact about a DVD – the title of the film or TV series
Director	Data	Represents a single fact about a DVD – the director of the film or TV series
Price	Data	Represents a single fact about a DVD – the price of a single unit
Number In Stock	Data	Represents a single fact about a DVD – the quantity of DVDs of a specific title held in stock
Number Sold in October 2020	Information	Represents the answer to a question – adding up all the items sold in November
Total Number of Items Sold	Information	Represents the answer to a question – obtained by adding up all the numbers sold
Number Sold	Data	Represents a single fact about a DVD – number of those items sold
Number Remaining In Stock	Information	Represents the answer to a question – obtained by subtracting the number of DVDs sold from the number of DVDs in stock



## Class Task 1.1.2 – Tables, Columns and Rows

- You have been given two scenarios and some data.
- For each identified data item for each scenario, identify whether it is a table, record, field or cell.
- Discuss your findings with the group.
- **Time allowed:** 10 minutes.



## Scenario 1 – A Vehicle Database for a Car Rental Company.

A company rents out vehicles to customers. Vehicles can have different fuel types (e.g. petrol, diesel or electric). Each vehicle could be a car or van and has a different cost. Customers hire vehicles out on a date and then return them on another date.

tblVehicleRental							
Vehicle Registration	Vehicle Make	Fuel Type	Rental Cost	Customer Name	Date Hired	Date Returned	Problems with Vehicle
RX45 4BP	Ford	Petrol	£49.99	Smith	1/1/2022	3/1/2022	Yes
AB13 6RF	BMW	Diesel	£99.99	Jones	1/1/2022	4/1/2022	Yes
DT22 9TJ	BMW	Diesel	£99.99	Jones	1/1/2022	2/1/2022	No
GH67 9FB	Ford	Hybrid	£69.99	Hussain	1/1/2022	5/1/2022	No
AC23 4BG	VW	Petrol	£39.99	Hussain	2/1/2022	2/1/2022	No
GH46 8HJ	VW	Petrol	£39.99	Hussain	2/1/2022	3/1/2022	No
RH92 1TH	VW	Hybrid	£49.99	Williams	2/1/2022	3/1/2022	Yes

### Suggested Answers

Data Item	Type
BMW	Cell
Vehicle Make	Field
Rental Cost	Field
DT22 9TJ BMW Diesel £99.99 Jones 1/1/2022 2/1/2022 No	Record
tblVehicleRental	Table
Hussain	Cell
Problems with Vehicle	Field
£69.99	Cell



## Scenario 2 – A DVD Database for a Media Sales Company.

A company has a stock of DVDs for sale both in store and online. The company always has a certain number of these in DVDs in stock and records the number of items sold in any customer order.

tblDVDStockItems							
DVD Title	Director	Genre	Rating	Item Cost	Number Sold	Number In Stock	Reorder Stock
Up	Pete Doctor	Animation	U	£9.99	900	25	Y
Jaws	Steven Spielberg	Thriller	PG	£9.99	445	25	Y
Alien	Ridley Scott	Horror	18	£14.99	789	100	N
Avatar	James Cameron	Science Fiction	PG	£19.99	12134	65	N
Blazing Saddles	Mel Brooks	Comedy	15	£14.99	557	45	N
Airplane	David Zucker	Comedy	PG	£9.99	1012	36	N
Spartacus	Stanley Kubrick	Historical	PG	£19.99	657	17	Y

### Suggested Answers

Data Item	Type
Rating	Field
Item Cost	Field
Y	Cell
Comedy	Cell
tblDVDStockItems	Table
Genre	Field
spartacus	Cell
Spartacus Stanley Kubrick Historical PG £19.99 657 17 Y	Record



### Class Task 1.1.3 – Datatypes

- Look at the scenarios given to you.
- For each field, identify the Datatypes as well as any possible alternatives. Justify your selection.
- Discuss your findings with the group.
- **Time allowed:** 10 minutes.

#### Scenario 1 – A Vehicle Database for a Car Rental Company.

A company rents out vehicles to customers. Vehicles can have different fuel types (e.g., petrol, diesel or electric). Each vehicle could be a car or van and has a different cost. Customers hire vehicles out on a date and then return them on another date.



tblVehicleRental								
ID	Vehicle Registration	Vehicle Make	Fuel Type	Rental Cost	Customer Name	Date Hired	Date Returned	Problems with Vehicle
1	RX45 4BP	Ford	Petrol	£49.99	Smith	1/1/2022	3/1/2022	Yes
2	AB13 6RF	BMW	Diesel	£99.99	Jones	1/1/2022	4/1/2022	Yes
3	DT22 9TJ	BMW	Diesel	£99.99	Jones	1/1/2022	2/1/2022	No
4	GH67 9FB	Ford	Hybrid	£69.99	Hussain	1/1/2022	5/1/2022	No
5	AC23 4BG	VW	Petrol	£39.99	Hussain	2/1/2022	2/1/2022	No
6	GH46 8HJ	VW	Petrol	£39.99	Hussain	2/1/2022	3/1/2022	No
7	RH92 1TH	VW	Hybrid	£49.99	Williams	2/1/2022	3/1/2022	Yes

### Suggested Answers

Field	Datatype	Alternate Datatype	Justification
ID	Number	Autonumber	The data has to be numerical that changes each column. Because it starts at 1, it could be autonumber
Vehicle Registration	Short Text	None	Is a mixture of letters and numbers
Vehicle Make	Short Text	None	Is just text and single words
Fuel Type	Short Text	None	Is just text and single words
Rental Cost	Currency	Number	Decimal number with a pound sign in front of it
Customer Name	Short Text	None	Is just text and single words
Date Hired	Date Time	Short Text	Three-part date format of day, month and year
Date Returned	Date Time	Short Text	Three-part date format of day, month and year
Problems with Vehicle	Yes / No	Short Text	Can only be one of two options





## Scenario 2 – A DVD Database for a Media Sales Company.

A company has a stock of DVDs for sale both in store and online. The company always has a certain number of these in DVDs in stock and records the number of items sold in any customer order.

tblDVDStockItems								
DVD ID	DVD Title	Director	Genre	Rating	Item Cost	Number Sold	Number In Stock	Reorder Stock
101	Up	Pete Doctor	Animation	U	£9.99	900	25	Y
102	Jaws	Steven Spielberg	Thriller	PG	£9.99	445	25	Y
103	Alien	Ridley Scott	Horror	18	£14.99	789	100	N
104	Avatar	James Cameron	Science Fiction	PG	£19.99	12134	65	N
107	Blazing Saddles	Mel Brooks	Comedy	15	£14.99	557	45	N
108	Airplane	David Zucker	Comedy	PG	£9.99	1012	36	N
110	Spartacus	Stanley Kubrick	Historical	PG	£19.99	657	17	Y



### Suggested Answers

Field	Datatype	Alternate Datatype	Justification
<b>DVD ID</b>	Number	None	Has to be numerical that changes each column. Cannot be Autonumber as the numbers are not in sequence
<b>DVD Title</b>	Short Text	None	Is just text and single words
<b>Director</b>	Short Text	None	Is just text and single words
<b>Genre</b>	Short Text	None	Is just text and single words
<b>Rating</b>	Number	Short Text	Just a number
<b>Item Cost</b>	Currency	Number	Decimal number with a pound sign in front of it
<b>Number Sold</b>	Number	Short Text	Just a number
<b>Number In Stock</b>	Number	Short Text	Just a number
<b>Reorder Stock</b>	Yes / No	Short Text	Can only be one of two options



## Class Task 1.1.4 – Primary Keys

- Look at the scenarios given to you.
- For each field, identify whether it is a key or non-key field, and the key type.
- Discuss your findings with the group.
- **Time allowed:** 5 minutes.

### Scenario 1 – A Vehicle Database for a Car Rental Company.

A company rents out vehicles to customers.

Vehicles can have different fuel types (e.g., petrol, diesel or electric). Each vehicle could be a car or van and has a different cost.

Customers hire vehicles out on a date and then return them on another date.



tblVehicleRental								
ID	Vehicle Registration	Vehicle Make	Fuel Type	Rental Cost	Customer Name	Date Hired	Date Returned	Problems with Vehicle
1	RX45 4BP	Ford	Petrol	£49.99	Smith	1/1/2022	3/1/2022	Yes
2	AB13 6RF	BMW	Diesel	£99.99	Jones	1/1/2022	4/1/2022	Yes
3	DT22 9TJ	BMW	Diesel	£99.99	Jones	1/1/2022	2/1/2022	No
4	GH67 9FB	Ford	Hybrid	£69.99	Hussain	1/1/2022	5/1/2022	No
5	AC23 4BG	VW	Petrol	£39.99	Hussain	2/1/2022	2/1/2022	No
6	GH46 8HJ	VW	Petrol	£39.99	Hussain	2/1/2022	3/1/2022	No
7	RH92 1TH	VW	Hybrid	£49.99	Williams	2/1/2022	3/1/2022	Yes

### Suggested Answers

Field	Key / Non Key	Key Type
ID	Key	Primary
Vehicle Registration	Non-Key	
Vehicle Make	Non-Key	
Fuel Type	Non-Key	
Rental Cost	Non-Key	
Customer Name	Non-Key	
Date Hired	Non-Key	
Date Returned	Non-Key	
Problems with Vehicle	Non-Key	



## Scenario 2 – A DVD Database for a Media Sales Company.

A company has a stock of DVDs for sale both in store and online.

The company always has a certain number of these in DVDs in stock and records the number of items sold in any customer order.

tblDVDStockItems								
DVD ID	DVD Title	Director	Genre	Rating	Item Cost	Number Sold	Number In Stock	Reorder Stock
101	Up	Pete Doctor	Animation	U	£9.99	900	25	Y
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103	Alien	Ridley Scott	Horror	18	£14.99	789	100	N
104	Avatar	James Cameron	Science Fiction	PG	£19.99	12134	65	N
107	Blazing Saddles	Mel Brooks	Comedy	15	£14.99	557	45	N
108	Airplane	David Zucker	Comedy	PG	£9.99	1012	36	N
110	Spartacus	Stanley Kubrick	Historical	PG	£19.99	657	17	Y

### Suggested Answers

Field	Key / Non-Key	Key Type
DVD ID	Key	Primary
DVD Title	Non-Key	
Director	Non-Key	
Genre	Non-Key	
Rating	Non-Key	
Item Cost	Non-Key	
Number Sold	Non-Key	
Number In Stock	Non-Key	
Reorder Stock	Non-Key	





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