

Question 1: Given some sample data, write a program to answer the following: [click here to access the required data set](#)

On Shopify, we have exactly 100 sneaker shops, and each of these shops sells only one model of shoe. We want to do some analysis of the average order value (AOV). When we look at orders data over a 30 day window, we naively calculate an AOV of \$3145.13. Given that we know these shops are selling sneakers, a relatively affordable item, something seems wrong with our analysis.

a) Think about what could be going wrong with our calculation. Think about a better way to evaluate this data.

Error in the calculation is because we are using `count()` instead of `sum()` for getting the total number of items.

`sum()` function calculates the total of all numerical values in an iterable.

`count()` will just count number of rows.

Correct way to calculate AOV is: To calculate the sum of the column 'order_amount' divided by the sum of the column 'total_items'

b) What metric would you report for this dataset?

Correct way to calculate AOV is:

To calculate the sum of the column 'order_amount' divided by the sum of the column 'total_items'.

```
totalItems = df['total_items'].sum()

[ ] amount = df['order_amount'].sum()

[ ] avgOrderVal = amount/totalItems
```

c) What is its value?

357.92152221412965

Correct value

```
print(avgOrderVal)
```

357.92152221412965

Question 2: For this question you'll need to use SQL. Follow this link to access the data set required for the challenge. Please use queries to answer the following questions. Paste your queries along with your final numerical answers below.

a)How many orders were shipped by Speedy Express in total?

```
SELECT O.OrderID FROM [OrderDetails] OD
INNER JOIN [Orders] O
ON OD.OrderID = O.OrderID
WHERE O.ShipperID = 1;
```

Number of orders shipped by Speedy Express is 149

The screenshot shows the SQL TryIt Editor v1.6 interface. The SQL Statement is: `SELECT O.OrderID FROM [OrderDetails] OD INNER JOIN [Orders] O ON OD.OrderID = O.OrderID WHERE O.ShipperID = 1;`. The result shows 149 records. The 'Your Database' section lists tables and their record counts: Customers (91), Categories (8), Employees (10), OrderDetails (518), Orders (196), Products (77), Shippers (3), and Suppliers (29). A 'Restore Database' button is also visible.

Table	Records
Customers	91
Categories	8
Employees	10
OrderDetails	518
Orders	196
Products	77
Shippers	3
Suppliers	29

b)What is the last name of the employee with the most orders?

```
SELECT * FROM [Employees] E
INNER JOIN [Orders] O
ON E.EmployeeID = O.EmployeeID
GROUP BY LastName
ORDER BY COUNT(*) DESC
```

Last name of the employee with the most orders is Peacock.

SQL Tryit Editor v1.6

SQL Statement:

```
SELECT * FROM [Employees] E
INNER JOIN [Orders] O
ON E.EmployeeID = O.EmployeeID
GROUP BY LastName
ORDER BY COUNT(*) DESC
```

Edit the SQL Statement, and click "Run SQL" to see the result.

Run SQL

Result:

Number of Records: 9

EmployeeID	LastName	FirstName	BirthDate	Photo	Notes	OrderID	CustomerID	OrderDate	ShipperID
4	Peacock	Margaret	1958-09-19	EmpID4.pic	Margaret holds a BA in English literature from Concordia College and an MA from the American Institute of Culinary Arts. She was temporarily assigned to the London office before returning to her permanent post in Seattle.	10250	34	1996-07-08	2
3	Leverling	Janet	1963-08-	EmpID3.pic	Janet has a BS degree in chemistry	10251	84	1996-07-	1

Your Database:

Tablename	Records
Customers	91
Categories	8
Employees	10
OrderDetails	518
Orders	196
Products	77
Shippers	3
Suppliers	29

Restore Database

SQL Statement:

```
CREATE VIEW CustomOrder AS
SELECT * FROM [Orders] O
JOIN [Customers] C
ON O.CustomerID = C.CustomerID;
```

Edit the SQL Statement, and click "Run SQL" to see the result.

Run SQL

Result:

You have made changes to the database.

Your Database:

Tablename	Records
Customers	91
Categories	8
Employees	10
OrderDetails	518
Orders	196
Products	77
Shippers	3
Suppliers	29

Views:

Name of View	Records
CustomOrder	196

Restore Database

The Try-SQL Editor
at w3schools.com

Type here to search

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c) What product was ordered the most by customers in Germany?

```
CREATE VIEW CustomOrder AS
SELECT * FROM [Customers] C
INNER JOIN [Orders] O
ON C.CustomerID = O.CustomerID
```

```
CREATE VIEW ProdOrderDetails AS
SELECT * FROM [Products] P
INNER JOIN [OrderDetails] OD
ON P.ProductID = OD.ProductID
```

```

SELECT P.ProductID, P.ProductName, P.Quantity, C.Country
FROM [ProdOrderDetails] P
JOIN CustomOrder C
ON C.OrderID = P.OrderID
WHERE Country = 'Germany'
GROUP BY ProductID
ORDER BY SUM(Quantity) DESC, ProductName ASC

```

Product ordered the most by customers in Germany is Boston Crab Meat.

The screenshot shows the SQL Tryit Editor v1.6 interface. The main area contains a SQL statement for creating a view named 'CustomOrder'. Below the statement is a green 'Run SQL' button. The result area shows a message: 'You have made changes to the database.' On the right side, there is a 'Your Database:' section with a table listing database tables and their record counts. Below that is a 'Views:' section with a table listing views and their record counts. At the bottom right of the database section is a 'Restore Database' button.

SQL Statement:

```

CREATE VIEW CustomOrder AS
SELECT * FROM [Orders] O
JOIN [Customers] C
ON O.CustomerID = C.CustomerID;

```

Edit the SQL Statement, and click "Run SQL" to see the result.

Run SQL

Result:

You have made changes to the database.

Your Database:

Tablename	Records
Customers	91
Categories	8
Employees	10
OrderDetails	518
Orders	196
Products	77
Shippers	3
Suppliers	29

Views:

Name of View	Records
CustomrOrder	196

Restore Database

The Try-SQL Editor
at [w3schools.com](https://www.w3schools.com)

SQL Tryit Editor v1.6

SQL Statement:

```
CREATE VIEW ProdOrderDetails AS
SELECT * FROM [Products] P
INNER JOIN [OrderDetails] OD
ON P.ProductID = OD.ProductID
```

Edit the SQL Statement, and click "Run SQL" to see the result.

Run SQL

Result:

Number of Records: 74

ProductID	ProductName	Quantity	Country
40	Boston Crab Meat	50	Germany
59	Raclette Courdavault	70	Germany
76	Lakkalikööri	15	Germany
10	Ikura	24	Germany

Your Database:

Tablename	Records
Customers	91
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Employees	10
OrderDetails	518
Orders	196
Products	77
Shippers	3
Suppliers	29

Views:

Name of View	Records
ProdOrderDetails	518
CustomOrder	196

Restore Database

SQL Tryit Editor v1.6

SQL Statement:

```
SELECT P.ProductID, P.ProductName, P.Quantity, C.Country
FROM [ProdOrderDetails] P
JOIN CustomOrder C
ON C.OrderID = P.OrderID
WHERE Country = 'Germany'
GROUP BY ProductID
```

Edit the SQL Statement, and click "Run SQL" to see the result.

Run SQL

Result:

Number of Records: 45

ProductID	ProductName	Quantity	Country
40	Boston Crab Meat	50	Germany
31	Gorgonzola Telino	15	Germany
23	Tunnbröd	40	Germany
35	Steeleye Stout	100	Germany

Your Database:

Tablename	Records
Customers	91
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Employees	10
OrderDetails	518
Orders	196
Products	77
Shippers	3
Suppliers	29

Views:

Name of View	Records
ProdOrderDetails	518
CustomOrder	196

Restore Database

SQL Tryit Editor v1.6

w3schools.com/SQL/TRYSQLASP?FILENAME=TRYSQL_SELECT_ALL

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SQL Statement:

```
WHERE Country = 'Germany'
GROUP BY ProductID
ORDER BY SUM(Quantity) DESC, ProductName ASC
```

Edit the SQL Statement, and click "Run SQL" to see the result.

Run SQL

Result:

Number of Records: 45

ProductID	ProductName	Quantity	Country
40	Boston Crab Meat	50	Germany
31	Gorgonzola Telino	15	Germany
23	Tunnbröd	40	Germany
35	Steeleye Stout	100	Germany

Your Database:

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OrderDetails	518
Orders	196
Products	77
Shippers	3
Suppliers	29

Views:

Name of View	Records
ProdOrderDetails	518
CustomOrder	196

Restore Database

Type here to search

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