Project Missing Money Matters

Solutions

Challenge 1

General queries that begin to give you some high-level context

1. How many transactions took place between the years 2011 and 2012?
2. How much money did WSDA Music make during the same period?

```
--1. How many transactions took place between the years 2011 and 2012?
SELECT
        COUNT(*)
FROM
        Invoice
WHERE
        InvoiceDate >= '2011-01-01' AND InvoiceDate <='2012-12-31'
```

```
--2. How much money did WSDA Music make during the same period?
SELECT
        Sum(total)
FROM
        Invoice
WHERE
        InvoiceDate >= '2011-01-01' AND InvoiceDate <='2012-12-31'
```

Challenge 2

More targeted questions that query tables containing data about customers and employees

1. Get a list of customers who made purchases between 2011 and 2012.
2. Get a list of customers, sales reps, and total transaction amounts for each customer between 2011 and 2012.
3. How many transactions are above the average transaction amount during the same time period?
4. What is the average transaction amount for each year that WSDA Music has been in business?

--1. Get a list of customers who made purchases between 2011 and 2012.

```
SELECT
        c.FirstName,
        c.LastName,
        i.total
FROM
        Invoice i
INNER JOIN
        Customer c
ON i.CustomerId = c.CustomerId
WHERE
        InvoiceDate >= '2011-01-01' AND InvoiceDate <='2012-12-31'
ORDER BY
        i.total DESC
```

--2. Get a list of customers, sales reps, and total transaction amounts for each customer between 2011 and 2012.

```
SELECT
        c.FirstName AS [Customer FN],
        c.LastName AS [Customer LN],
        e.FirstName AS [Employee FN],
        e.LastName AS [Employee LN],
        i.total
FROM
        Invoice i
INNER JOIN
        Customer c
ON i.CustomerId = c.CustomerId
INNER JOIN
        Employee e
ON e.EmployeeId = c.SupportRepId
WHERE
        InvoiceDate >= '2011-01-01' AND InvoiceDate <='2012-12-31'
ORDER BY
        i.total DESC
```

--3. How many transactions are above the average transaction amount during the same time period?

```
-- Find the average transaction amount between 2011 and 2012
SELECT
        round(avg(total),2) AS [Avg Transaction Amount]
FROM
        Invoice
```

```
WHERE
        InvoiceDate >= '2011-01-01' AND InvoiceDate <='2012-12-31'

-- Get the number of transactions above the average transaction amount
SELECT
        count(total) AS [Num of Transactions Above Avg]
FROM
        Invoice
WHERE
        total >
                        (
                        SELECT
                                round(avg(total),2) AS [Avg Transaction Amount]
                        FROM
                                Invoice
                        WHERE
                                InvoiceDate >= '2011-01-01' AND InvoiceDate <='2012-12-31'
                        )
AND
InvoiceDate >= '20   11-01-01' AND InvoiceDate <='2012-12-31'

--4. What is the average transaction amount for each year that WSDA Music has been in business?

SELECT
        round(avg(total),2) AS [Avg Transaction Amount],
        strftime('%Y',InvoiceDate) AS [Year]
FROM
        Invoice
GROUP BY
        strftime('%Y',InvoiceDate)
```

Challenge 3

Queries that perform in-depth analysis with the aim of finding employees who may have been financially motivated to commit a crime

1. Get a list of employees who exceeded the average transaction amount from sales they generated during 2011 and 2012.
2. Create a Commission Payout column that displays each employee's commission based on 15% of the sales transaction amount.
3. Which employee made the highest commission?

```
--1. Get a list of employees who exceeded the average transaction amount from
sales they generated during 2011 and 2012.
```

```
SELECT
        e.FirstName,
        e.LastName,
        sum(i.total) AS [Total Sales]
FROM
        Invoice i
INNER JOIN
        Customer c
ON i.CustomerId = c.CustomerId
INNER JOIN
        Employee e
ON e.EmployeeId = c.SupportRepId
WHERE
        InvoiceDate >= '2011-01-01' AND InvoiceDate <='2012-12-31'
AND
        i.total > 11.66
GROUP BY
        e.FirstName,
        e.LastName
ORDER BY e.LastName
```

--2. Create a Commission Payout column that displays each employee's commission based on 15% of the sales transaction amount.

```
SELECT
        e.FirstName,
        e.LastName,
        sum(i.total) AS [Total Sales],
        round(sum(i.total) *.15,2) AS [Commission Payout]
FROM
        Invoice i
INNER JOIN
        Customer c
ON i.CustomerId = c.CustomerId
INNER JOIN
        Employee e
ON e.EmployeeId = c.SupportRepId
WHERE
        InvoiceDate >= '2011-01-01' AND InvoiceDate <='2012-12-31'
GROUP BY
        e.FirstName,
        e.LastName
ORDER BY e.LastName
```

--3. Which employee made the highest commission?

-- Jane Peacock $106.21

--4. List the customers that Jane Peacock supported.

```
SELECT
        c.FirstName AS [Customer FN],
        c.LastName AS [Customer LN],
        e.FirstName AS [Employee FN],
        e.LastName AS [Employee LN],
        sum(i.total) AS [Total Sales],
        round(sum(i.total) *.15,2) AS [Commission Payout]
FROM
        Invoice i
INNER JOIN
        Customer c
ON i.CustomerId = c.CustomerId
INNER JOIN
        Employee e
ON e.EmployeeId = c.SupportRepId
WHERE
        InvoiceDate >= '2011-01-01' AND InvoiceDate <='2012-12-31'
AND e.LastName = 'Peacock'
GROUP BY
        c.FirstName,
        c.LastName,
        e.FirstName,
        e.LastName
ORDER BY [Total Sales] DESC
```

--5. Which customer made the highest purchase?

-- John Doeein

--6. Take a look at this customer record—does it look suspicious?

```
SELECT
        *
FROM
        Customer c
WHERE
        c.LastName = 'Doeein'
```

--7. Who do you conclude is our primary person of interest?

-- Jane Peacock