Answers:

1. 2 more cow.
2. 4036
3. A
4. 12 meter
5. First Adam and Dave cross (11 min) then Adam turns back (1 min)

Second Adam and Clair cross then Adam turns back (1 min)

And last Adam and Bob cross (2 min)

That's why Adam gets very tired but feels happy to help his friends. 😊

MySQL Questions:

1. SELECT Source, COUNT(\*) TotalTransactions

FROM transactions

GROUP BY Source:

1. SLECT AVG(Amaount) AS AverageAmount

FROM transactions

WHERE MONTH(Timestamp) = 1;

1. UPDATE transactions t1

SET t1.Matchingstatus = 1

WHERE EXISTS (

SELECT 1

FROM transactions t2

WHERE t1.Transactionid = t2.Transactionid

AND t1.Source != t2.Source

AND t1.Source IN ('accounting\_system', 'payment\_service\_provider')

AND t2.Source IN ('accounting\_system', 'payment\_service\_provider')

);

UPDATE transactions AS t1

JOIN transactions AS t2

ON t1.Transactionid = t2.Transactionid

SET t1.Matchingstatus = 1

WHERE t1.Source = 'accounting\_system' AND t2.Source = 'payment\_service\_provider';

CREATE TABLE transactions (

ID INT PRIMARY KEY AUTO\_INCREMENT,

Timestamp DATETIME ,

Source VARCHAR(255) NOT NULL,

Label VARCHAR(255),

Transactionid VARCHAR(255) NOT NULL,

Cardid VARCHAR(255),

Transactioncategory VARCHAR(255),

Amount INT NOT NULL,

Matchingstatus INT

);

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INSERT INTO transactions (Source, TransactionID, Amount)

VALUES ('web\_app', '12345', 2050),

('web\_app', '12346', 2100),

('web\_app', '12347', 2150),

('web\_app', '12348', 2200),

('web\_app', '12349', 2250),

('web\_app', '12350', 2300),

('web\_app', '12353', 2450),

('web\_app', '12354', 2500),

('web\_app', '12355', 2550),

('web\_app', '12356', 2600),

('web\_app', '12357', 2650),

('web\_app', '12358', 2700),

('accounting\_system', '12347', 2150),

('accounting\_system', '12345', 2050),

('accounting\_system', '12352', 2400),

('accounting\_system', '12353', 2450),

('accounting\_system', '12354', 2500),

('accounting\_system', '12351', 2350),

('accounting\_system', '12355', 2550),

('accounting\_system', '12355', -2550),

('accounting\_system', '12356', 2600),

('accounting\_system', '12357', 2650),

('accounting\_system', '12357', -2650),

('accounting\_system', '12358', 2700),

('accounting\_system', '12350', 2300),

('accounting\_system', '12349', 2250),

('accounting\_system', '12346', 2100),

('payment\_sevice\_provider', '12347', 2150),

('payment\_sevice\_provider', '12348', 2200),

('payment\_sevice\_provider', '12345', 2050),

('payment\_sevice\_provider', '12353', 2500),

('payment\_sevice\_provider', '12358', 2700),

('payment\_sevice\_provider', '12356', 2600),

('payment\_sevice\_provider', '12349', 2700),

('payment\_sevice\_provider', '12357', 2650),

('payment\_sevice\_provider', '12352', 2400),

('payment\_sevice\_provider', '12355', 2550),

('payment\_sevice\_provider', '12357', -2650),

('payment\_sevice\_provider', '12350', 2300),

('payment\_sevice\_provider', '12351', 2350);

SELECT source, transactionid, amount

FROM transactions;

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SELECT source, transactionid, SUM(amount) AS total\_amount

FROM transactions

GROUP BY transactionid, source;

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SELECT

source1,

SUM(CASE WHEN match\_status = 'Matched' THEN 1 ELSE 0 END) AS matched\_rows,

SUM(CASE WHEN match\_status = 'Unmatched (Amount discrepancy)' THEN 1 ELSE 0 END) AS unmatched\_rows

FROM (

SELECT

s1.source AS source1,

s2.source AS source2,

s1.transactionid,

CASE

WHEN s1.amount = s2.amount THEN 'Matched'

ELSE 'Unmatched (Amount discrepancy)'

END AS match\_status

FROM transactions AS s1

LEFT JOIN transactions AS s2 ON s1.transactionid = s2.transactionid

AND s1.source != s2.source

) AS combined\_data

GROUP BY source1;

**Comparison web\_app – accounting\_system**

SELECT

source1,

SUM(CASE WHEN match\_status = 'Matched' THEN 1 ELSE 0 END) AS matched\_rows,

SUM(CASE WHEN match\_status = 'Unmatched (Amount discrepancy)' THEN 1 ELSE 0 END) AS unmatched\_rows

FROM (

SELECT

s1.source AS source1,

s2.source AS source2,

s1.transactionid,

CASE

WHEN s1.amount = s2.amount THEN 'Matched'

ELSE 'Unmatched (Amount discrepancy)'

END AS match\_status

FROM (SELECT Source, Transactionid, SUM(amount) AS amount

FROM transactions

WHERE Source = 'web\_app' OR Source = 'accounting\_system'

GROUP BY source, transactionid) AS s1

LEFT JOIN transactions AS s2 ON s1.transactionid = s2.transactionid

AND s1.source != s2.source

) AS combined\_data

#WHERE source1 = 'web\_app' or source1 = 'accounting\_system'

GROUP BY source1;

**Comparison accounting\_system – payment\_service\_provider**

SELECT

source1,

SUM(CASE WHEN match\_status = 'Matched' THEN 1 ELSE 0 END) AS matched\_rows,

SUM(CASE WHEN match\_status = 'Unmatched (Amount discrepancy)' THEN 1 ELSE 0 END) AS unmatched\_rows

FROM (

SELECT

s1.source AS source1,

s2.source AS source2,

s1.transactionid,

CASE

WHEN s1.amount = s2.amount THEN 'Matched'

ELSE 'Unmatched (Amount discrepancy)'

END AS match\_status

FROM (select source, Transactionid, SUM(amount) AS amount

from transactions

where Source = 'accounting\_system' or Source = 'payment\_sevice\_provider'

group by source, transactionid) AS s1

JOIN transactions AS s2 ON s1.transactionid = s2.transactionid

AND s1.source != s2.source

) AS combined\_data

#WHERE source1 = 'web\_app' or source1 = 'accounting\_system'

GROUP BY source1;