## **1. Conversion Rate**

Below you see a table of the actions of customers visiting the website by clicking on two different types of advertisements given by an E-Commerce company. Write a query to return the conversion rate for each Advertisement type.

**Actions:**

|  |  |  |
| --- | --- | --- |
| Visitor\_ID | Adv\_Type | Action |
| 1 | A | Left |
| 2 | A | Order |
| 3 | B | Left |
| 4 | A | Order |
| 5 | A | Review |
| 6 | A | Left |
| 7 | B | Left |
| 8 | B | Order |
| 9 | B | Review |
| 10 | A | Review |

**Desired\_Output:**

|  |  |
| --- | --- |
| Adv\_Type | Conversion\_Rate |
| A | 0.33 |
| B | 0.25 |

1. Create above table (Actions) and insert values,

CREATE TABLE Actions

(

Visitor\_ID INT NOT NULL,

Adv\_Type VARCHAR(10) NOT NULL,

Action VARCHAR(20) NOT NULL,

);

INSERT INTO Actions (Visitor\_ID, Adv\_Type, Action)

VALUES

(1, 'A', 'Left'),

(2, 'A', 'Order'),

(3, 'B', 'Left'),

(4, 'A', 'Order'),

(5, 'A', 'Review'),

(6, 'A', 'Left'),

(7, 'B', 'Left'),

(8, 'B', 'Order'),

(9, 'B', 'Review'),

(10, 'A', 'Review');

1. Retrieve count of total Actions, and Orders for each Advertisement Type,

SELECT Adv\_Type,

SUM(CASE WHEN Action like 'Order' THEN 1 ELSE 0 END) as Orders,

SUM(CASE WHEN Action like 'Left' THEN 1 ELSE 0 END) as Lefts,

SUM(CASE WHEN Action like 'Review' THEN 1 ELSE 0 END) as Reviews,

SUM(CASE WHEN Action like '%%' THEN 1 ELSE 0 END) as Total\_Order

INTO rates

FROM Actions

GROUP BY Adv\_Type;

SELECT \* FROM rates

Adv\_Type Orders Lefts Reviews Total\_Order

1 A 2 2 2 6

2 B 1 2 1 4

1. Calculate Orders (Conversion) rates for each Advertisement Type by dividing by total count of actions casting as float by multiplying by 1.0.

SELECT Adv\_Type,

ROUND((CAST(Orders AS FLOAT) / CAST(Orders + Lefts + Reviews AS FLOAT)),2) AS Conversation\_rate

FROM rates

ORDER BY Adv\_Type;

Adv\_Type Conversation\_Rate

1 A 0,33

2 B 0,25

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SELECT A.Adv\_Type, CAST(CAST(B.Action\_Count AS float) / COUNT(A.Action) AS NUMERIC(3,2)) Order\_Ratio  
FROM Actions A, (  
SELECT Adv\_Type, Action, COUNT(Action) Action\_Count  
FROM Actions  
WHERE Action = 'Order'  
GROUP BY Adv\_Type, Action) B  
WHERE A.Adv\_Type = B.Adv\_Type  
GROUP BY A.Adv\_Type, B.Action\_Count