GREEDYGAME ASSIGNMENT

Q1) Users come to this app through different marketing channels. They use the app to complete offers to earn money and we generate revenue in the process. Using the data furnished below, you need to: Calculate the lifetime value (LTV) of the users acquired through different marketing channels Note: Work out the result based on the schema of the tables only and not the actual dataset.

Answer:

```
WITH customer_data AS (
  SELECT
    user_id,
    COUNT(DISTINCT offer_id) AS num_transactions,
    AVG(total_payout_in_paise) / 100.0 AS avg_sale,
    (DATE_TRUNC('day', MAX(last_login_at)) - DATE_TRUNC('day', MIN(created_at)) + 1) AS avg_lifespan
  FROM user_signup_data usd
  JOIN user_offer_completion_data uoc ON usd.user_id = uoc.user_id
  JOIN rewards_details rd ON uoc.offer_id = rd.offer_id AND uoc.reward_id = rd.reward_id
  GROUP BY user_id
)
SELECT
  utm_source,
  (avg_sale * num_transactions * avg_lifespan ) AS clv
FROM customer_data cd
JOIN user_signup_data usd ON cd.user_id = usd.user_id
GROUP BY utm_source;
```

Explanation: We first create a CTE called customer_data that calculates the relevant data for each user: num_transactions, avg_sale, and avg_lifespan. The num_transactions column is calculated as the number of distinct offers completed by each user. The avg_sale column is calculated as the average pay out earned by each user, converted from paisa to rupees. The avg_lifespan column is calculated as the average lifespan of each user in days, as explained in my previous answer. We then join the customer_data and user_signup_data tables together and group the results by utm_source. We use the formula you provided to calculate the CLV for each marketing channel: AVG(avg_sale * num_transactions * avg_lifespan). This formula takes the average value of sale, number of transactions, and average customer lifespan into account to estimate the potential future value of each user. The GROUP BY utm_source statement groups the result by marketing channel.

Q2) 'Sikka' is a type of Incent app. There is another similar incent app called 'Sikka Pro'. You need to find insights from the data for both these apps and tell which app is better of these two. The data points you can consider to find the insights: Offer Initiation by users Offer Completion by users Rewards earned by users Revenue generated.

Answer:

status	app_id	count(status)
ONGOING	sikka	239
ONGOING	sikka_pro	197
COMPLETED	sikka	23
COMPLETED	sikka_pro	40

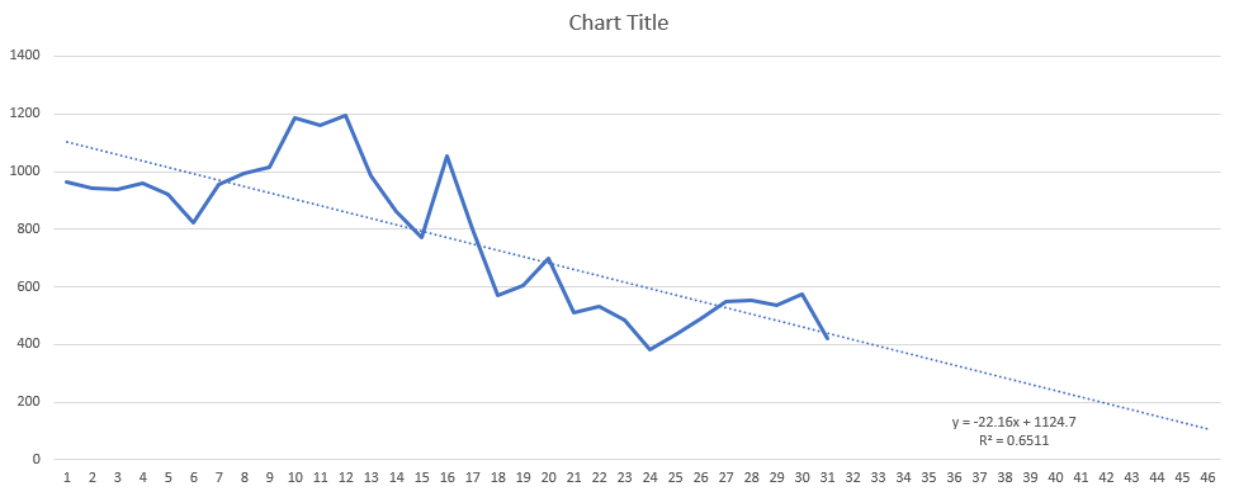
Row Labels	Sum of Rewards earned by users	Sum of Revenue_Generated
sikka	18466	39687
sikka_pro	19618	40457
Grand Total	**38084**	**80144**

From the above table we can say that "SIKKA PRO" is better than "SIKKA" app, because it has more no of offer completion orders than SIKKA app.

Q3) Here you are given the Install numbers, uninstall numbers, daily signups, number of daily active users and number of referrals made of the 'Sikka' app for the month of October 2022. Also, the Install numbers, uninstall numbers, daily signups, number of daily active users for the first 15 days of November is given. You need to predict the number of referrals for these 15 days of?

Answer:

15-10-2022	20829	5659	6519	2967	772	15
16-10-2022	22222	5861	6552	3096	1052	16
17-10-2022	20943	5860	6455	2828	801	17
18-10-2022	20180	6070	6611	2559	572	18
19-10-2022	19737	5267	6102	2278	606	19
20-10-2022	20148	5467	6125	2854	700	20
21-10-2022	17343	3845	4916	1726	512	21
22-10-2022	16270	3703	4727	1705	530	22
23-10-2022	15223	3397	4314	1545	484	23
24-10-2022	13482	3074	3904	1363	384	24
25-10-2022	14244	3714	4541	1658	435	25
26-10-2022	14659	3885	4564	1740	491	26
27-10-2022	14896	3707	4563	1905	551	27
28-10-2022	14473	3735	4381	1799	555	28
29-10-2022	13390	4072	4695	1872	536	29
30-10-2022	13370	3543	4343	1942	573	30
31-10-2022	13236	3313	4057	1562	419	31
01-11-2022	12816	3763	4149	1806	415.58	32
02-11-2022	12812	3087	3868	1550	393.42	33
03-11-2022	12042	3176	3815	1410	371.26	34
04-11-2022	12595	3172	3878	1629	349.1	35
05-11-2022	12361	3390	4021	1578	326.94	36
06-11-2022	13166	3441	4071	1656	304.78	37
07-11-2022	12565	3468	4011	1556	282.62	38
08-11-2022	12988	4468	4143	1808	260.46	39
09-11-2022	12992	4491	4638	2017	238.3	40
10-11-2022	13377	4261	4480	1997	216.14	41
11-11-2022	13826	4274	4512	2047	193.98	42
12-11-2022	13464	4660	4856	2066	171.82	43
13-11-2022	13415	4416	4749	2147	149.66	44
14-11-2022	13873	4097	4305	2065	127.5	45
15-11-2022	14459	4890	4593	2707	105.34	46



Y=-22.16x+1124.7

R^2=0.6511

The above formula and values are used in “Linear Regression” to predict the values for next 15 days. The predicted values are highlighted in the given table.

Q4) ADX is an ad exchange platform for large publishers with significant sales. It supports both Web and mobile apps & game inventories. Through ADX, publishers can sell their ad inventory to advertisers and agencies using real-time bidding technology. ADX provides more efficient usage of ad spaces using real-time auctions.

Answer:

Row Labels	Sum of requests	Sum of ae_responses	Sum of ae_impressions	Sum of ae_clicks	Sum of ae_revenue	click per revenue	ctr
b1	8860547	7671627	4154945	146727	6558.352651	0.044697654	3.53%
b2	16287697	14371054	7091253	449376	49018.64144	0.109081574	6.34%
b3	936634	822933	279944	25838	10015.13526	0.387612635	9.23%
b4	658229	604401	226875	11318	9755.096567	0.861909928	4.99%
b5	974127	946956	409610	13927	19595.70442	1.407029828	3.40%
b6	364422	361503	159311	57	5640.035348	98.94798856	0.04%
Grand Total	28081656	24778474	12321938	647243	100582.9657		

	date	pub_id	app_id	ad_unit_code	country	requests	e_respons	impressio	ae_clicks	e_revenu	segment
14310	2022-10-09	281	40931528	22827475225	Australia	128311	126743	69448	21	2137.182	b6
14312	2022-10-09	281	40931528	22827807110	Australia	156435	156296	48011	2	1860.866	b6
15645	2022-10-08	281	40931528	22827475225	Australia	79676	78464	41852	34	1641.987	b6

b1		0
b2	1	100
b3	100	300
b4	300	600
b5	600	1500
b6	1500	2138

Explanation:

In this the ADX data was segregated into 6 bins. From bin 1 to 5 click per revenue is normal, we have identified bucket 6 looks suspicious(app_id:40931528).In b6 we have only 1 app id with 0.04 percent of click conversion(ctr) and more revenue per each id has compared to the other buckets.