1. ‘Sikka’ is a money earning app where you can earn cash rewards by completing simple offers daily that give you sikka coins, which you can withdraw to your bank account as real money. You can learn more about this app here [**Sikka**](https://play.google.com/store/apps/details?id=com.sikka.freemoney&hl=en_IN&gl=US&pli=1)

**Problem Statement:**

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.***(\*\* This is only for question 1)*** |

Data to be used:

**User Signup data:**

This table stores the details of every user coming through different marketing channels on ‘Sikka’ app.

|  |  |  |
| --- | --- | --- |
| **Column\_name** | **Data Type** | **Comments** |
| user\_id | TEXT | Unique value assigned to every user |
| utm\_source | TEXT | The [utm source](https://buffer.com/library/utm-guide/) through which the user signed up. This is the marketing channel through which the user came |
| created\_at | TIMESTAMP | The time and date at which the user account was created |
| last\_login\_at | TIMESTAMP | Last login timestamp of the user |



**User offer completion data:**

This table stores the data of the offers completed by any ‘Sikka’ user.

|  |  |  |
| --- | --- | --- |
| **Column\_name** | **Data Type** | **Comments** |
| user\_id | TEXT | Unique value assigned to every user |
| offer\_id | TEXT | Unique id of an offer |
| reward\_id | TEXT | Unique id of a reward, can be linked with reward id of rewards table |
| created\_at | TIMESTAMP | The time and date at which the offer completion log was created |

**Rewards details:**

This table stores the details of every offer-reward that is in the ‘Sikka’ App

|  |  |  |
| --- | --- | --- |
| **Column\_name** | **Data\_type** | **Comments** |
| reward\_id | INT4 | Unique id of the reward |
| offer\_id | INT4 | Unique id of the offer |
| label\_in\_english | TEXT | Label of the offer in english |
| description\_in\_english | TEXT | Description in english |
| total\_payout\_in\_paise | INT4 | Reward amount earned by a user in paisa |
| total\_revenue\_in\_paise | INT4 | Amount of revenue earned by GG if that offer is completed |

2. ‘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

**User Signup data:**

****

This table stores the details of every user coming through different marketing channels on ‘Sikka’ app.

|  |  |  |
| --- | --- | --- |
| **Column\_name** | **Data Type** | **Comments** |
| user\_id | TEXT | Unique value assigned to every user |
| app\_id | TEXT | Name of the app the user belongs to |
| created\_at | TIMESTAMP | The time and date at which the user account was created |
| last\_login\_at | TIMESTAMP | Last login timestamp of the user |

**User offer data:**

This table stores the details of every offer that was initiated on ‘Sikka’ or ‘Sikka pro’ app.

|  |  |  |
| --- | --- | --- |
| **Column\_name** | **Data\_type** | **Comments** |
| user\_id | TEXT | Unique id of the user |
| offer\_id | NUMBER | Unique id of the offer |
| status | STATUS | Tells the status of the offer. Can be COMPLETED, ONGOING |
| started\_at | TIMESTAMP | Timestamp at which the offer was started |
| completed\_at | TIMESTAMP | Timestamp at which the offer was COMPLETED |
| expires\_at | TIMESTAMP | Timestamp at which an ONGOING/LOCAL VERIFIED offer expires |

**User offer completion data:**

This table stores the data of the offers completed by any ‘Sikka’ or ‘Sikka pro’ user.

|  |  |  |
| --- | --- | --- |
| **Column\_name** | **Data Type** | **Comments** |
| user\_id | TEXT | Unique value assigned to every user |
| app\_id | TEXT | Name of the app the user belongs to |
| reward\_id | TEXT | Unique id of a reward, can be linked with reward id of rewards table |
| created\_at | TIMESTAMP | The date at which the offer completion log was created |

**Rewards details:**

****

This table stores the details of every offer-reward that is in the ‘Sikka’ or ‘Sikka pro’ App

|  |  |  |
| --- | --- | --- |
| **Column\_name** | **Data\_type** | **Comments** |
| reward\_id | INT4 | Unique id of the reward |
| offer\_id | INT4 | Unique id of the offer |
| label\_in\_english | TEXT | Label of the offer in english |
| total\_payout\_in\_paise | INT4 | Reward amount earned by a user in paisa |
| total\_revenue\_in\_paise | INT4 | Amount of revenue earned by GG if that offer is completed |

\* ***Refer to the datasets here :*** [***Datasets***](https://drive.google.com/drive/folders/1SS5PVMgjECc8018fVG5SFW5Eth3T6hbK?usp=share_link) ***(Please refer to Q2 files for this question)***

3. 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

November Sikka\_numbers:

|  |  |  |
| --- | --- | --- |
| **Column\_name** | **Data\_type** | **Comments** |
| day | DATE | Date of the log |
| Installs | INT | Install numbers for that day |
| DAU | INT | DAU for the day |
| referrals | INT | Referrals for that day |

***\* Refer to the datasets here :*** [***Datasets***](https://drive.google.com/file/d/1emopFRoxUzCWr5uoJM-0Q9DI-wf71cqC/view?usp=share_link) ***(Please refer to Q3 file for this question)***

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4. 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.

Data Definition:

**Sample\_ADX\_data**

|  |  |  |
| --- | --- | --- |
| **Column**  **Name** | **Type** | **Comments** |
| date | DATE | Date on which the report log was recorded |
| pub\_id | STRING | Unique ID of a Publisher. Publisher is the one who owns a particular app and wants to monetize by offering ad-space on his/her app |
| app\_id | STRING | Unique ID of the app |
| ad\_unit\_code STRING |  | Unique ID of an ad\_placement\_unit space given for a particular app. Can be more than 1 unit code for a single app |
| country | STRING | Country from which the ad requests came |
| requests |  | INTEGER The number of time an ad was requested by the app |
| responses | INTEGER | The number of times has the network responded with an Ad for a particular ad\_request |
| impressions |  | When an ad has been served to the mobile device, it needs to be shown INTEGER on the screen. Once the ad is displayed it is counted as an impression |
| clicks |  | INTEGER Clicks coming after the ad is being rendered on the screen |
| revenue |  | NUMERIC Total revenue made by the app in USD |

A sample dataset with data for a few apps which uses ADX is given from the month of October.

**You need to find out if there is any anomaly present in the data for any of the apps present in the sample dataset.** The metrics you can look into are the requests, impressions, clicks, revenue, show-rate( impressions/responses ), click-rate (clicks/impressions) or any other feature which you think will be helpful to gain more insight about any anomaly.

***\* Refer to the datasets here :*** [***Datasets***](https://drive.google.com/file/d/1RtiZMbbDPyF7vNcO0eVYSeuGTot3KS_v/view?usp=share_link) ***(Please refer to Q4 file for this question)***