Revenue Metrics

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- The main idea of the project is the analysis of financial flow, by creating a dashboard that will allow us to monitor and analyze financial data, including revenue, expenses, and profit.
- Deadline: 10 days.

Used tools:

- SQL (DBeaver)
- Tableau

Calculated metrics

- MRR & New MRR
- Paid Users & New Paid Users
- MRR Expansion & Contraction
- ARPPU
- Churn Users & Churn Rate
- Customer Lifetime & Lifetime Value

```sql
WITH mrr_cte AS (
    WITH monthly_mrr AS (
        SELECT
            DATE_TRUNC('month', payment_date)::date AS payment_month,   -- extragem luna
            SUM(revenue_amount_usd) AS mrr,  -- MRR
            COUNT(DISTINCT user_id) AS paid_users -- PAID USERS
        FROM
            project.games_payments
        WHERE
            payment_date IS NOT null AND revenue_amount_usd > 0
        GROUP BY
            payment_month
    ),
    mrr_changes AS (
        SELECT
            payment_month,
            mrr,
            paid_users,
            LAG(mrr) OVER (ORDER BY payment_month) AS previous_mrr,  -- aducem prin functia lag mrr anterior
            LAG(paid_users) OVER (ORDER BY payment_month) AS previous_paid_users  -- utilizatori anteriori
        FROM
            monthly_mrr
    )
    SELECT
        payment_month,
        mrr,
        previous_mrr,
        paid_users,
        COALESCE(paid_users - previous_paid_users, 0) AS churn_users,  -- CHURN USERS
        COALESCE(ROUND((paid_users - previous_paid_users) * 100.0 / previous_paid_users, 2), 0) AS churn_rate,  -- CHURN RATE
        mrr - COALESCE(previous_mrr, 0) AS mrr_expansion  -- MRR EXPANSION
    FROM
        mrr_changes
    ORDER BY
        payment_month
),
first_payment AS (
    WITH first_month AS (
        SELECT
            user_id,
            game_name,
            MIN(DATE_TRUNC('month', payment_date))::date AS first_payment_month
        FROM project.games_payments
        GROUP BY user_id, game_name
    )
    SELECT
        fm.first_payment_month AS month,
        fm.user_id,
        fm.game_name,
        SUM(gp.revenue_amount_usd) AS new_mrr, -- NEW MRR
        COUNT(distinct gp.user_id) AS new_paid_users -- NEW PAID USERS
    FROM
        first_month fm
    JOIN project.games_payments gp
    ON fm.user_id = gp.user_id AND DATE_TRUNC('month', gp.payment_date) = fm.first_payment_month
    GROUP BY month, fm.user_id, fm.game_name
    ORDER BY month
),
```

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```sql
        ORDER BY month
    ),
    lifetime_metrics AS (
        SELECT
            user_id,
            MIN(DATE_TRUNC('month', payment_date))::date AS first_payment_month, -- prima luna de plata
            MAX(DATE_TRUNC('month', payment_date))::date AS last_payment_month,  -- ultima luna de plata
            COUNT(DISTINCT DATE_TRUNC('month', payment_date)) AS active_months,
            sum(revenue_amount_usd) as mrr
        FROM
            project.games_payments
        GROUP BY
            user_id
    ),
    users_metrics AS (
        SELECT
            fp.month,
            fp.user_id,
            fp.game_name,
            mc.mrr,
            fp.new_mrr,
            mc.mrr_expansion,
            mc.paid_users,
            fp.new_paid_users,
            ROUND(mc.mrr / mc.paid_users) AS arppu,  -- ARPPU
            mc.churn_users,
            mc.churn_rate,
            lm.active_months as customer_lt,  -- CUSTOMER LIFETIME
            sum(lm.mrr) OVER (PARTITION BY fp.user_id ORDER BY fp.month) AS customer_ltvalue  -- CUSTOMER LIFETIME VALUE
        FROM
            mrr_cte mc
        JOIN first_payment fp
        ON mc.payment_month = fp.month
        join lifetime_metrics lm
        on fp.user_id = lm.user_id
    )
    SELECT
        month,
        um.user_id,
        um.game_name,
        gpu.language,
        age,
        mrr,
        new_mrr,
        mrr_expansion,
        paid_users,
        new_paid_users,
        arppu,
        churn_users,
        churn_rate,
        customer_lt,
        customer_ltvalue
    FROM
        users_metrics um
    join project.games_paid_users gpu
    on um.user_id = gpu.user_id
    order by month;
```

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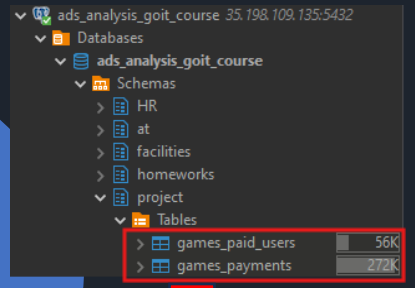
ads_analysis_goit_course 35.198.109.135:5432
Databases
ads_analysis_goit_course
Schemas
HR
at
facilities
homeworks
project
Tables
games_paid_users 56K
games_payments 272K

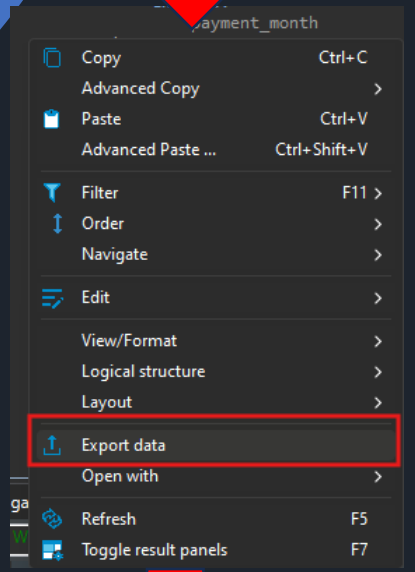
payment_month
Copy Ctrl+C
Advanced Copy
Paste Ctrl+V
Advanced Paste ... Ctrl+Shift+V
Filter F11
Order
Navigate
Edit
View/Format
Logical structure
Layout
Export data
Open with
Refresh F5
Toggle result panels F7


Tableau Desktop Public Edition
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Month over month Churn Rate
Mar 0.0%
Apr 69.8%
May 37.0%
Jun 11.0%
Jul 30.6%
Aug 13.8%
Sep 8.5%
Oct 11.2%
Nov -5.5%
Dec 0.5%
Language
(All)
en
ru
uk
Game Name
(All)
game 1
game 2
game 3
Month
(All)
March
April
May
June
July
August
September
October
November
December
MRR and User Count
MRR $1,491 $9,344
Paid Users 43 199
User Count and Customer Lifetime Value
$291 $204 $253 $216 $173 $135 $142 $88 $61 $40
$40 $291
Average CL, CLV and Age by Game
Age CL (in months) CLV
game 1 22 1 $23
game 2 25 1 $32
game 3 23 4 $168
New MRR and New Paid Users + ARPPU
$35 $49 $43 $47 $47 $46 $44 $47 $45 $45
$863 $1,991
MRR Expansion VS Contraction
$1,491
$2,110
$739
$831
$1,621
$825
$305
$1,421
-$919
$15
MRR and User Count
New MRR and New Paid Users +...
MRR Expansion VS Contraction
User Count and Customer LTV
Month over month Churn Rate
Average CL, CLV and Age
Revenue Metrics