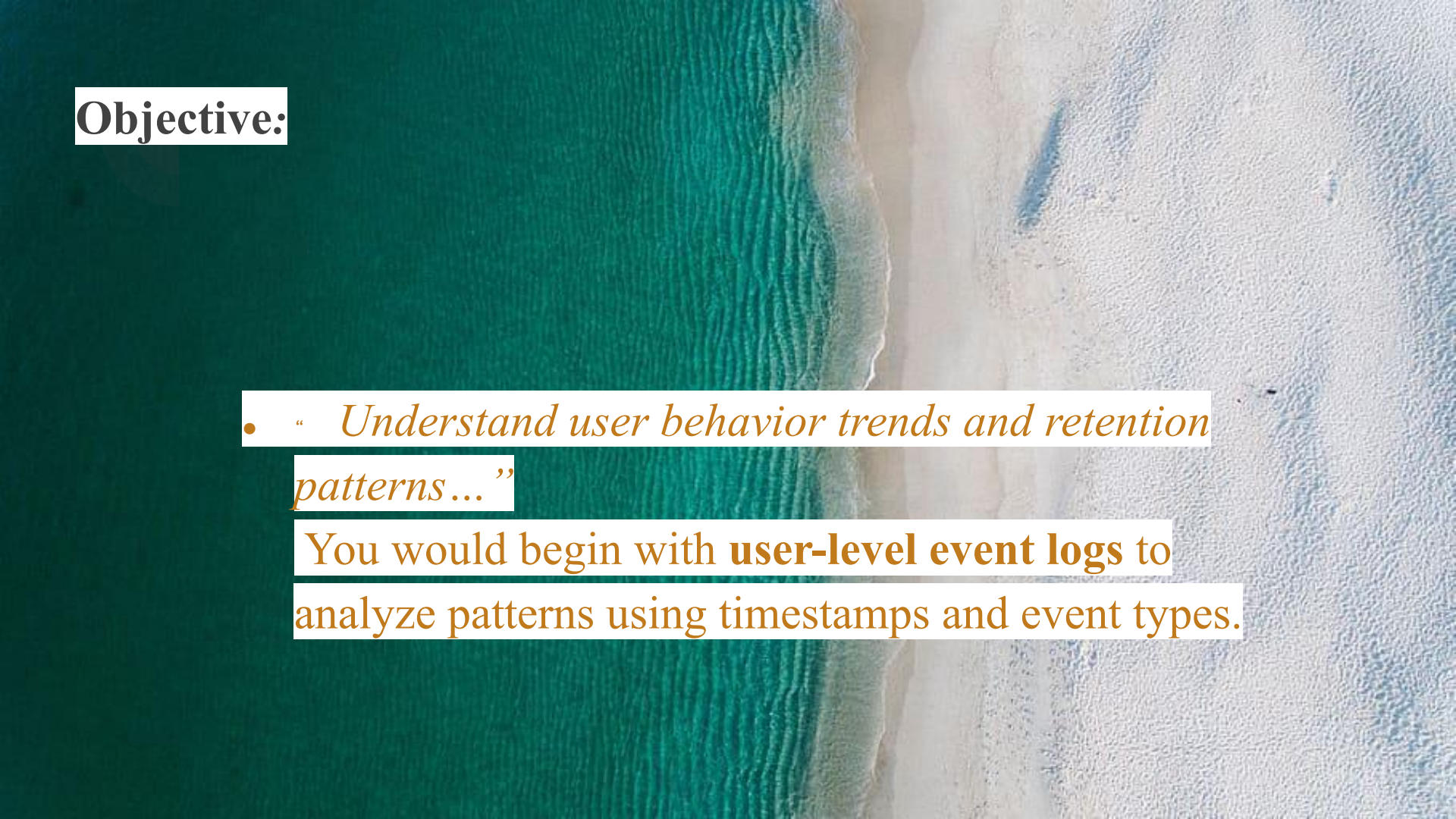
SaaS User Analytics Executive Summary

-Aripirala pallavi



Objective:

- *“ Understand user behavior trends and retention patterns…”*

  You would begin with **user-level event logs** to analyze patterns using timestamps and event types.

Key Metrics — Query/Code Breakdown

- DAU: 5,000 daily active users (↑ 15% MoM)

1. Python:

```
df['event_time'] = pd.to_datetime(df['event_time'])
df['date'] = df['event_time'].dt.date
dau = df.groupby('date')['user_id'].nunique()

# Month-over-Month growth
df['month'] = df['event_time'].dt.to_period('M')
monthly_dau = df.groupby('month')['user_id'].nunique()
mom_growth = (monthly_dau.iloc[-1] - monthly_dau.iloc[-2]) / monthly_dau.iloc[-2] * 100
```

Churn Rate: 7% monthly churn (stable)

Definition: Users who were active last month but not this month.

2. Python:

```
# Filter by month

df['month'] = df['event_time'].dt.to_period('M')

month1 = df[df['month'] == '2024-03']['user_id'].unique()

month2 = df[df['month'] == '2024-04']['user_id'].unique()



churned_users = set(month1) - set(month2)

churn_rate = len(churned_users) / len(month1) * 100
```

Funnel Conversion: 45% from signup to activation

Assumes event types are 'signup', 'onboard_step_1', … 'activate'

3. python:

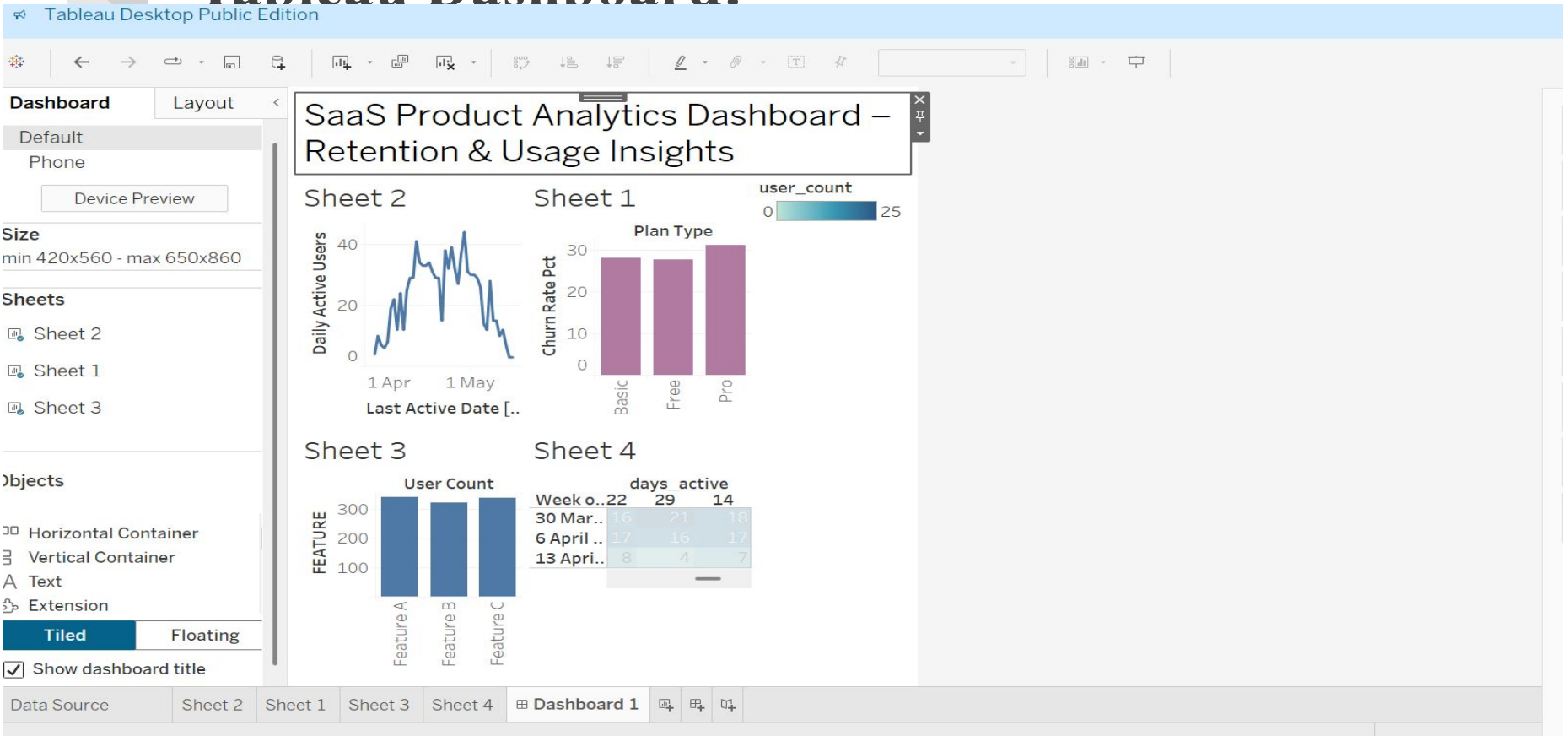
```
funnel_df = df[df['event_type'].isin(['signup', 'activate'])]
signup_users = funnel_df[funnel_df['event_type'] == 'signup']['user_id'].nunique()
activated_users = funnel_df[funnel_df['event_type'] == 'activate']['user_id'].nunique()

conversion_rate = activated_users / signup_users * 100
```

Retention Cohorts: 60-day retention steady at 40%

4. python:

```
# Calculate user sign-up date

df['signup_date'] = df.groupby('user_id')['event_time'].transform('min')

df['days_since_signup'] = (df['event_time'] - df['signup_date']).dt.days


# Cohort table

cohort = df.groupby(['signup_date', 'days_since_signup'])['user_id'].nunique().unstack().fillna(0)

cohort_retention = cohort.divide(cohort[0], axis=0)
```

Tableau Dashboard:



. Insights (From Python/SQL Analysis):

Insight 1: Sharp Drop After Day 7

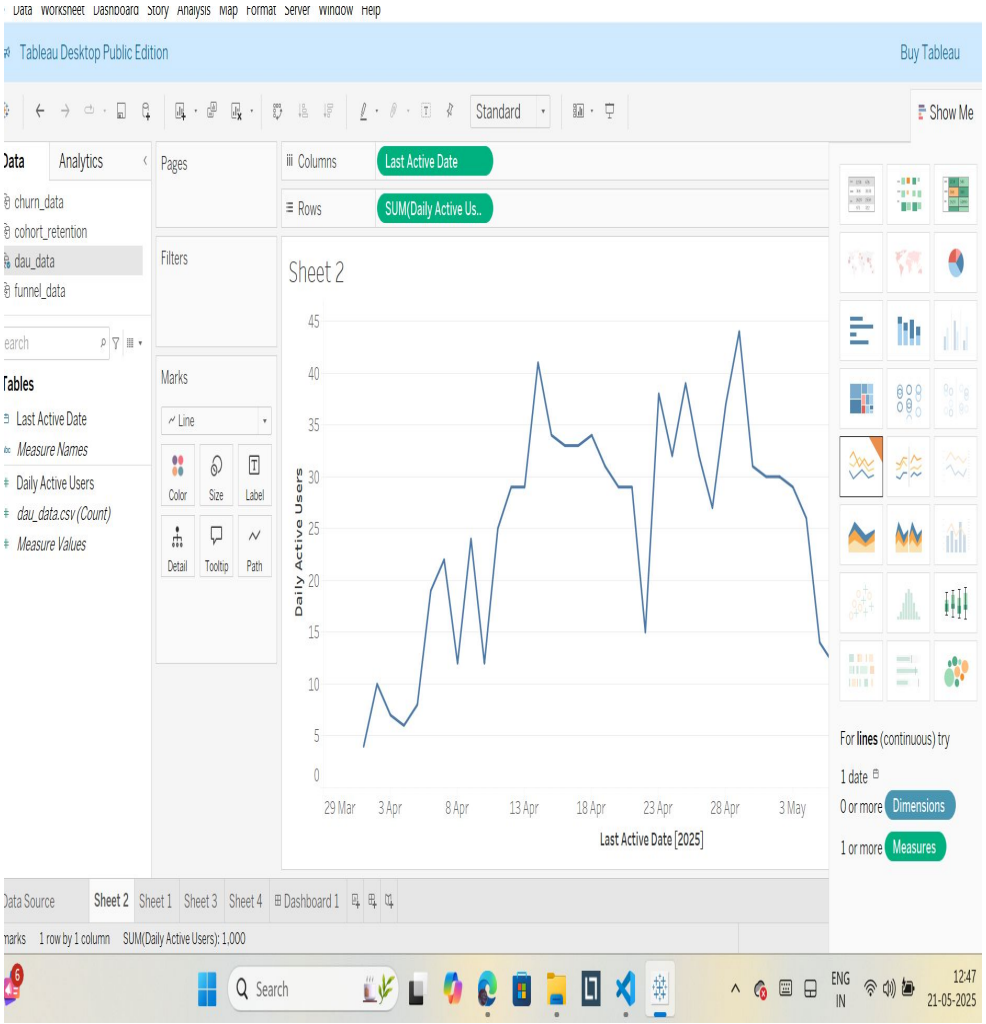
- **Data source:** Retention cohort table → days_since_signup
- **Observed pattern:** Engagement drops significantly after day 7.
- **Chart for Tableau:** Line chart showing average user activity over 30 days since signup.
- **Interpretation:** Users explore in the first week but don't return afterward.

Insight 2: Higher Mobile App Churn (9%) vs Web (5%)

- **Data source:** Churn rates segmented by platform
- **Chart for Tableau:** Bar chart comparing churn % for Mobile vs Web
- **Interpretation:** Likely UI/UX issues, bugs, or app fatigue in mobile environment

Insight 3: Drop-Off at Onboarding Step 3

- **Data source:** Funnel steps: signup → onboard_1 → onboard_2 → onboard_3 → activate
- **Chart for Tableau:** Funnel chart showing user count at each step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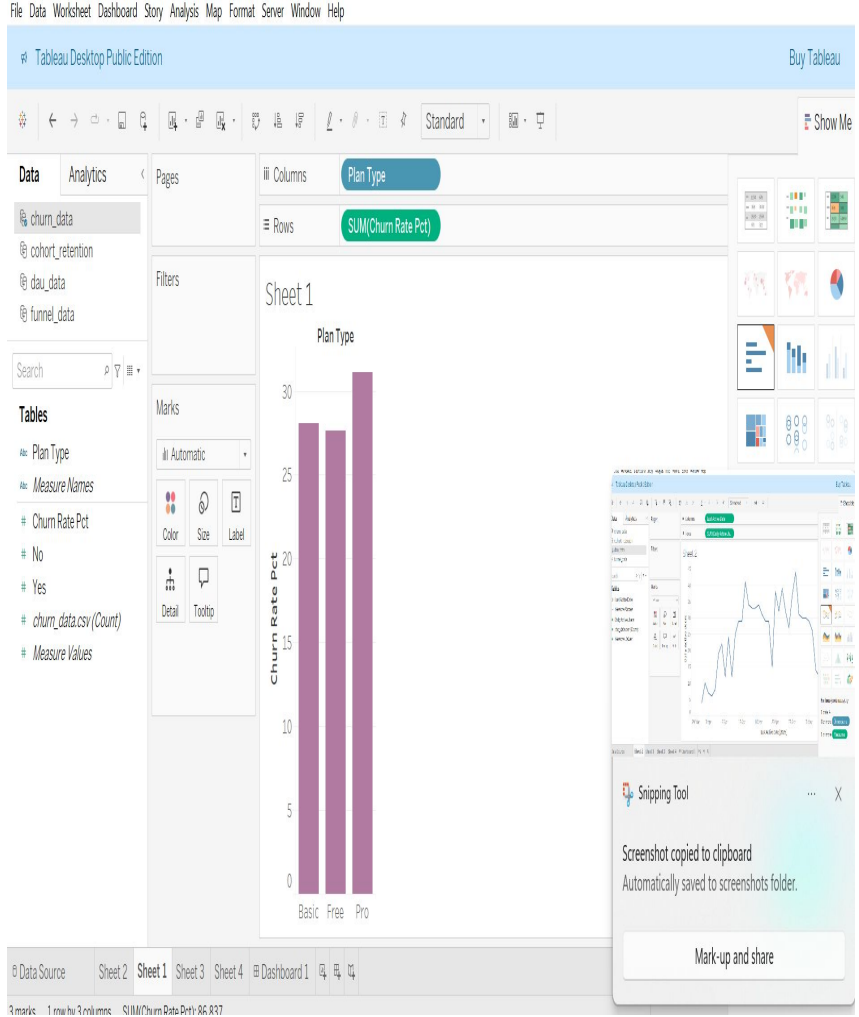
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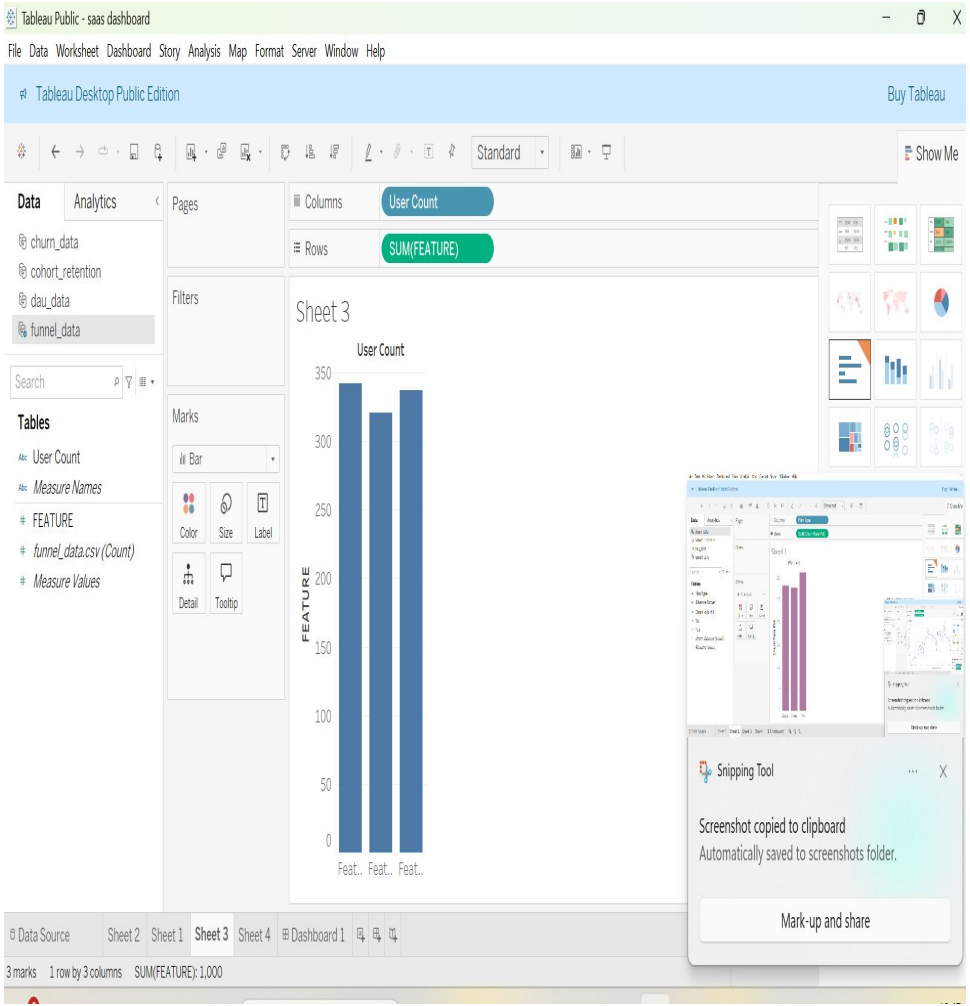
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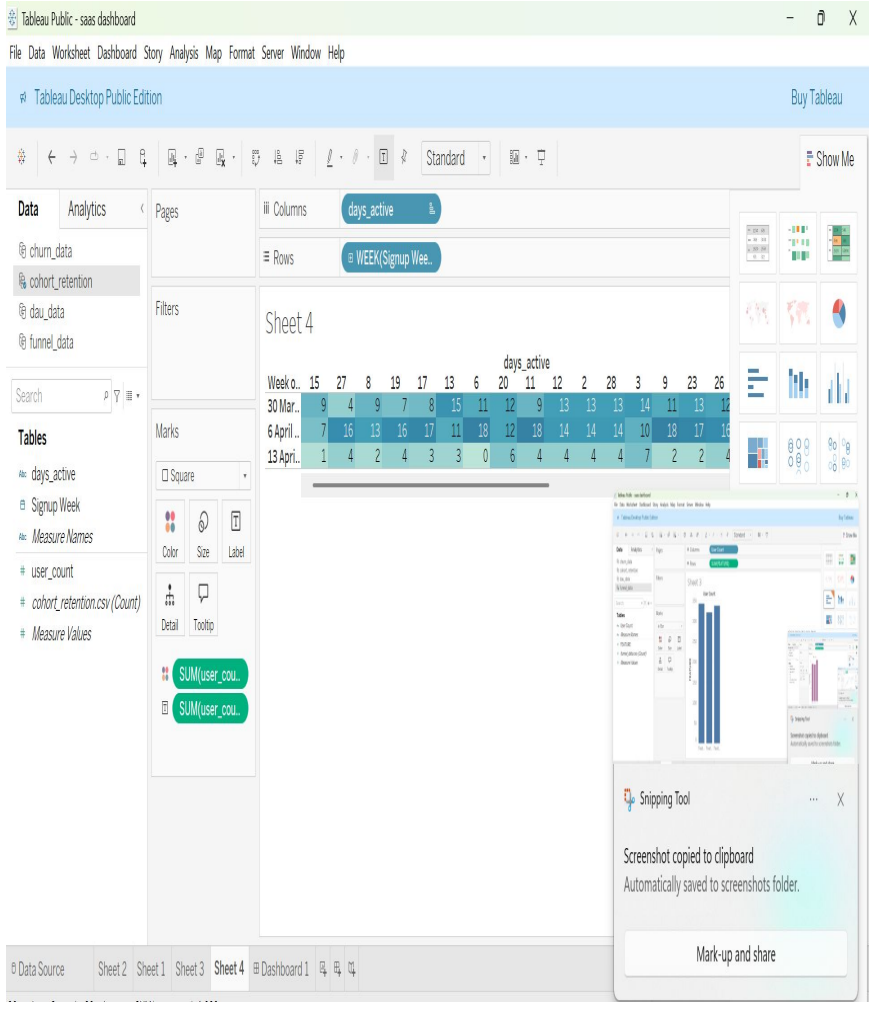
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Sheet 1
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Dashboard 1

Recommendations:

1. Improve Onboarding UX (Focus on Step 3)

- **Why?** Highest user loss at this stage (measurable in funnel)
- **Tactical ideas:**
  - Add tooltips, progress bars
  - Use video walk-throughs
  - Reduce form fields

2. Targeted Re-engagement After Day 7

- **Why?** Drop in activity shown in retention curve
- **Tactical ideas:**
  - Email campaigns
  - Push notifications with feature reminders
  - Rewards/incentives for returning

Necessary Steps:

Run A/B Tests on Onboarding

- **Goal:** Test new simplified onboarding vs current flow
- **Metric:** Activation rate, drop-off percentage
- **Tools:** Mixpanel, Amplitude, or internal testing framework

Collect Feedback from Churned Users

- **Goal:** Understand why users left
- **Methods: Exit surveys, User Interbiews.**

Build Predictive Churn Model

- **Goal:** Identify at-risk users early
- **Features:** Days active, device used, time to activation, onboarding steps completed
- **Model:** Logistic regression, Random Forest, or XGBoost
- **Outcome:** Trigger re-engagement workflows before churn happens


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