

MOBILE APPLICATION "UNNECESSARY THINGS"

ANALYSIS OF USER BEHAVIOR

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1

PROJECT DESCRIPTION

TASKS

- 1 To analyze the connection of the target event - **viewing contacts** - and others user actions

- 2 Evaluate what actions are more often performed by those users who View contacts

2

RESEARCH STAGES

- 1 Exploratory data analysis was conducted

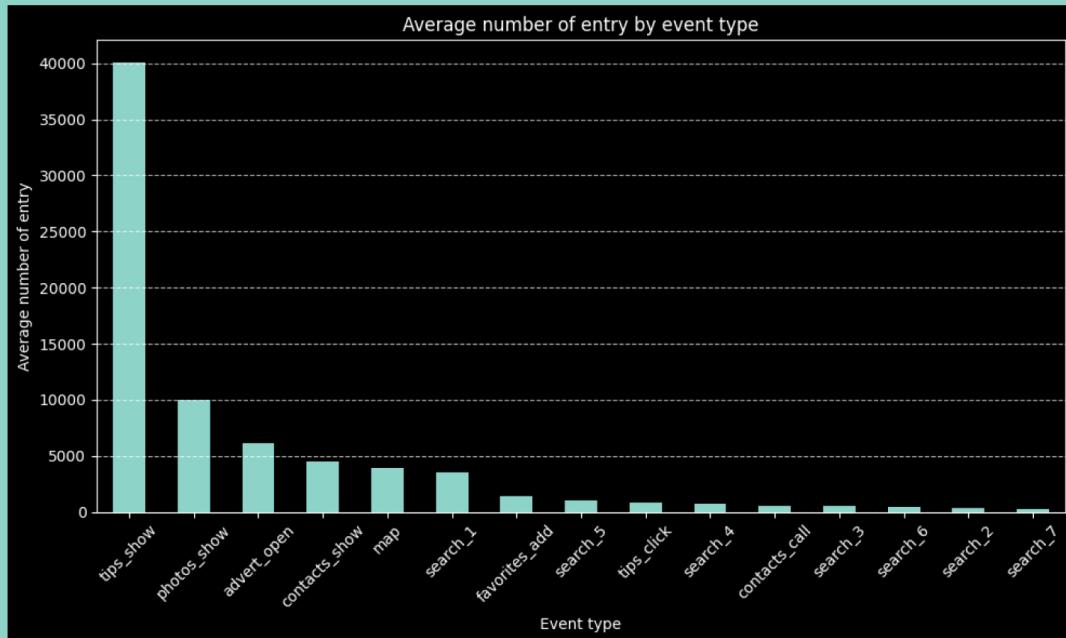
- 2 The influence of events on the occurrence of the target event was analyzed

- 3 The statistical hypotheses tested were:
 - Some users perform **tips_show** and **tips_click** actions, others - only **tips_show**. Hypothesis: the conversion to contact views differs between these two groups
 - Own statistical hypothesis

- 4 Final presentation

AVERAGE NUMBER OF ENTRIES BY EVENT TYPE

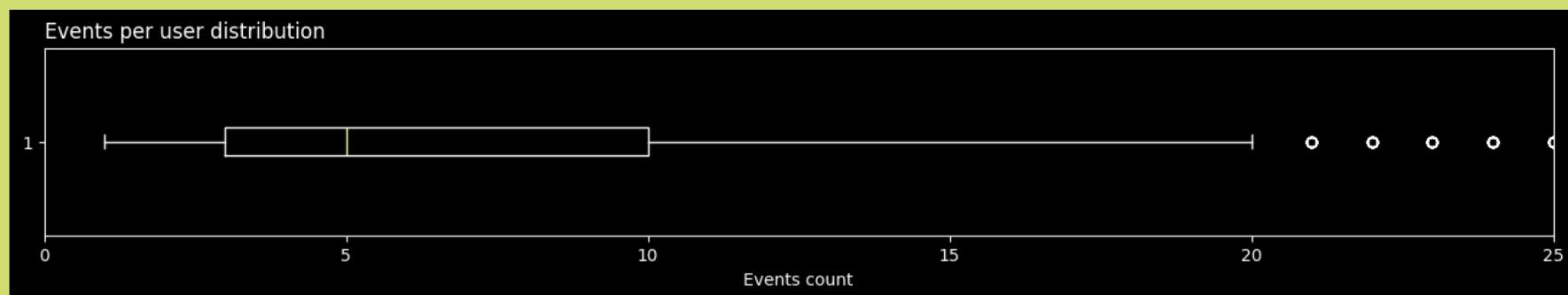
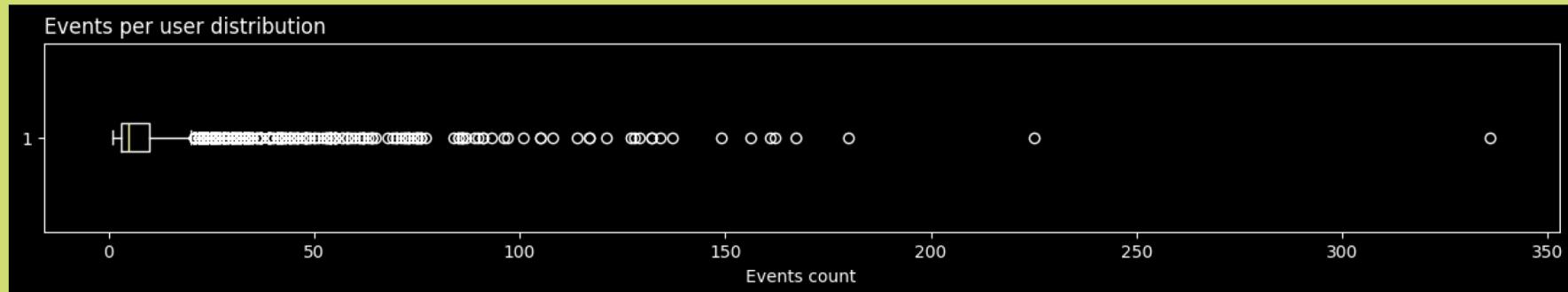
It was decided to exclude the **tips_show** event, since it is automatic and does not reflect user activity. However, it was used to test the hypothesis given in the technical specifications



Search related events are very rare. Only the **search_1** event, which is quite common, was renamed to **search_simple**. The rest were decided to be considered as a category **search_special**. They are presumably related to the use of filters.



DISTRIBUTION OF NUMBER OF EVENTS PER USER

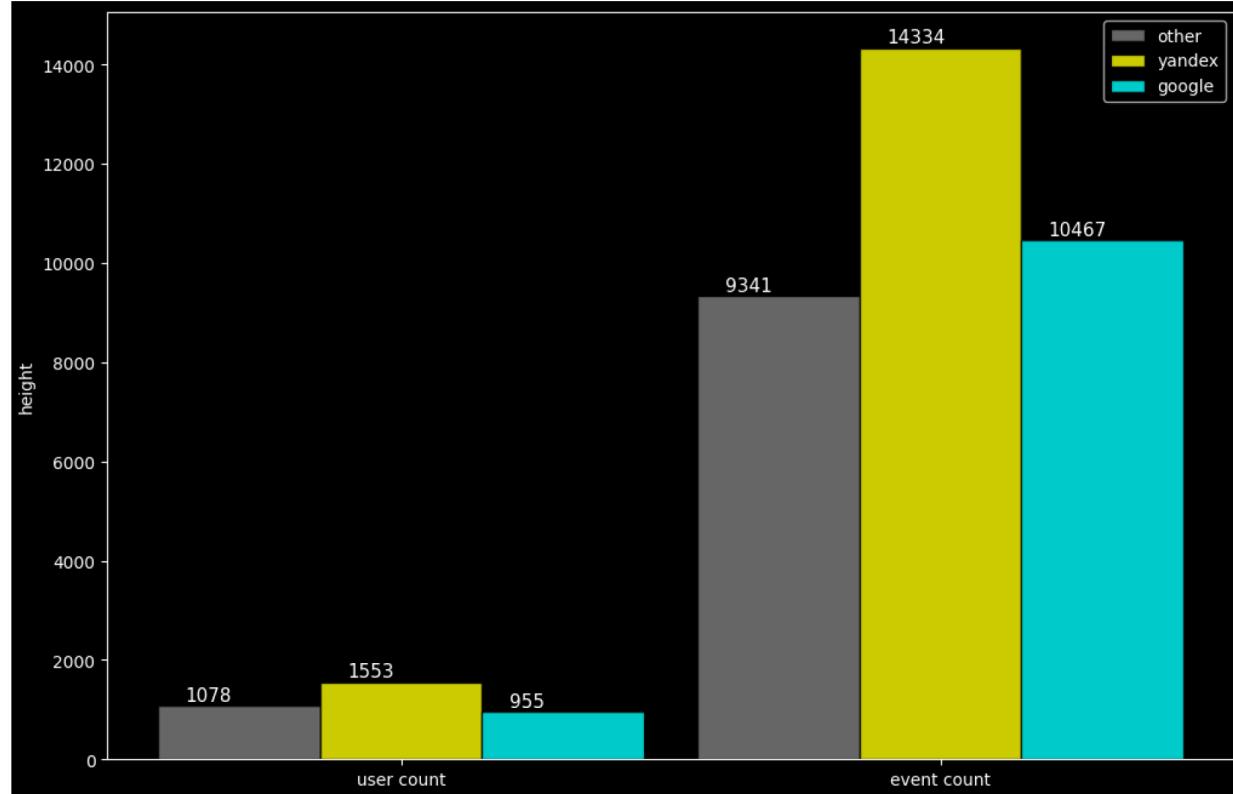


There are 16 events per user on average, with a minimum and maximum of 1 and 336. With such a large spread, it is more useful to look at the median, which is 5 events per user.

DISTRIBUTION OF USER SOURCES

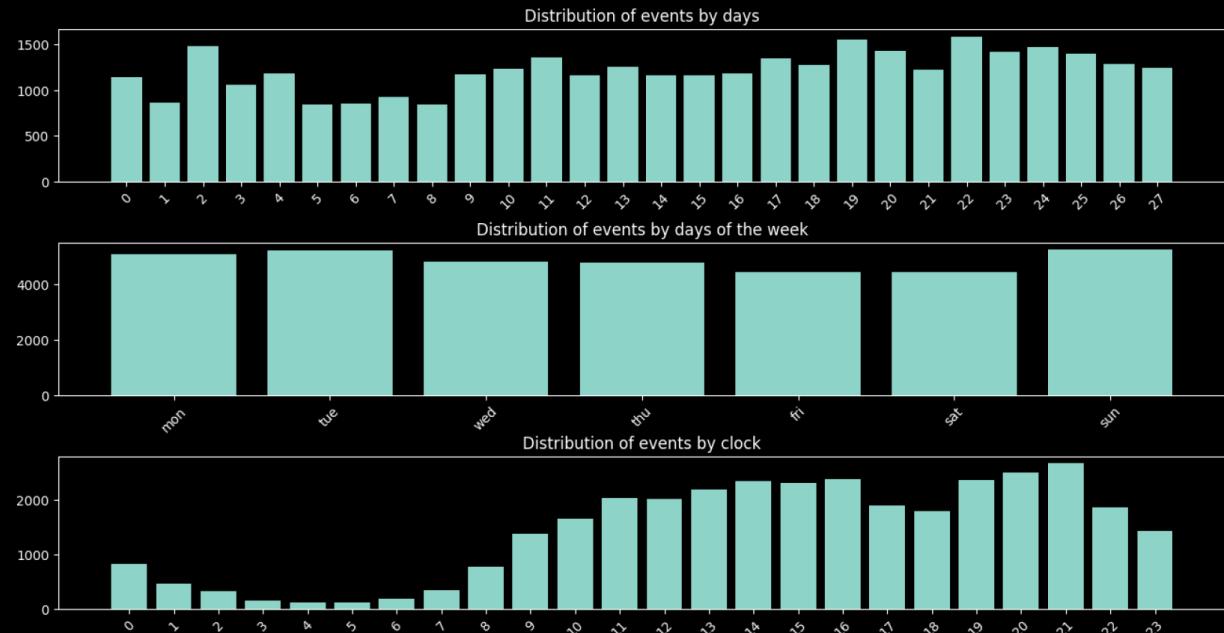
Yandex is the leader in terms of distribution of indicators among user sources

Google provides fewer unique users than other sources (excluding **Yandex**), but these users are slightly more active



DISTRIBUTION OF EVENTS IN TIME

There is a clear daily seasonality.
At night, the application is used much less often and the peak is at **9 pm**. There is also a dip at **5-6 pm**

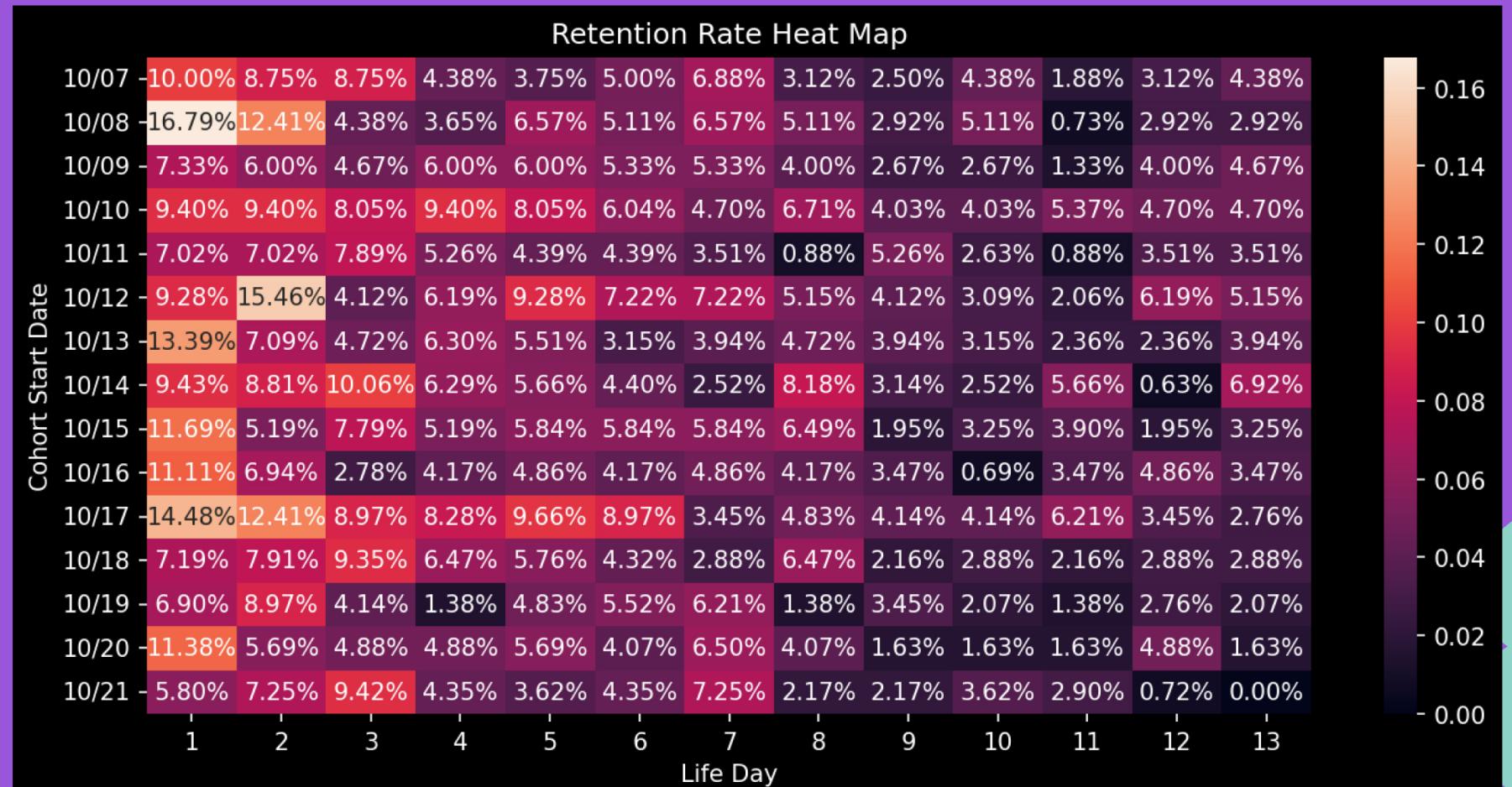


Due to the short period of time of the data, it was decided not to perform decomposition and not to identify trends

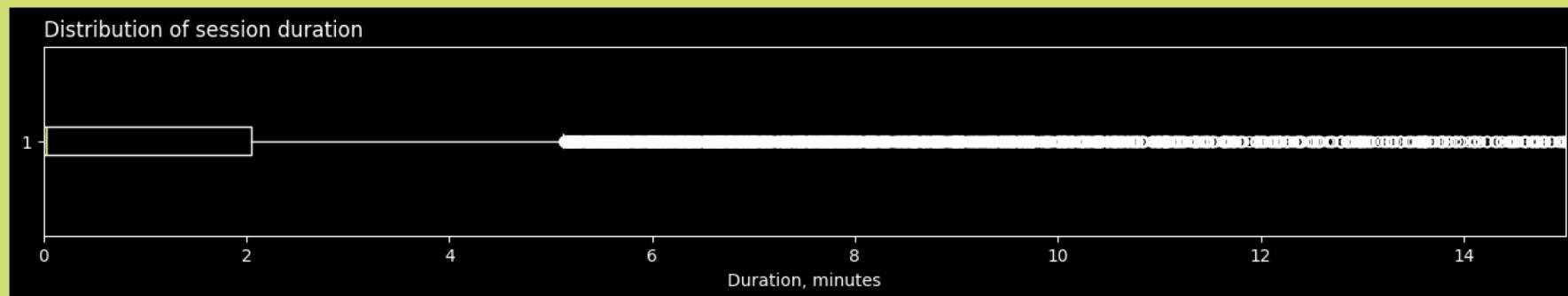
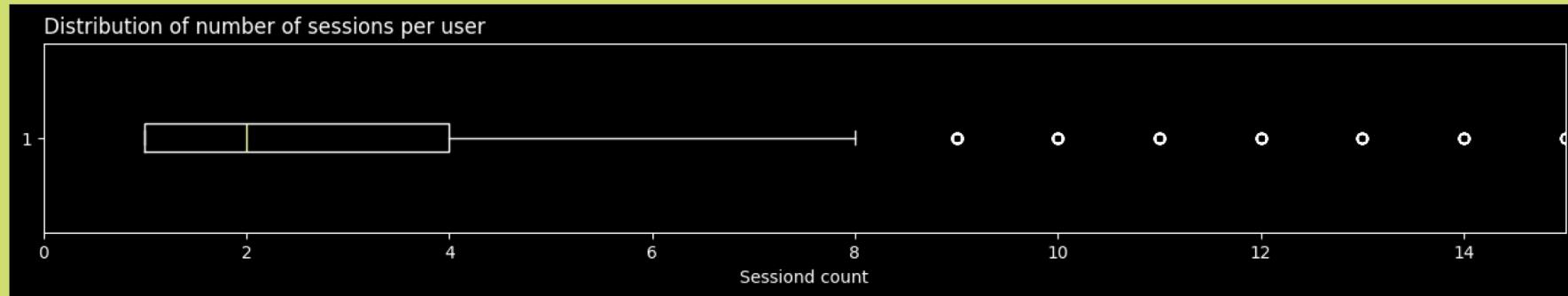
The app is visited more frequently on Tuesday and Sunday, and the least on Friday and Saturday.

COHORT ANALYSIS

Showed low retention rate by day 7 less than 8%, and by day 14 less than 1%



SESSION ALLOCATION

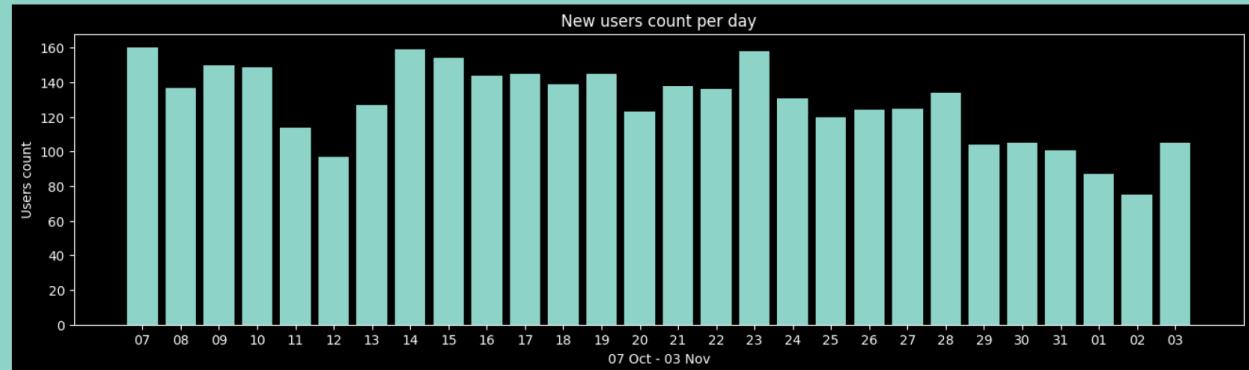
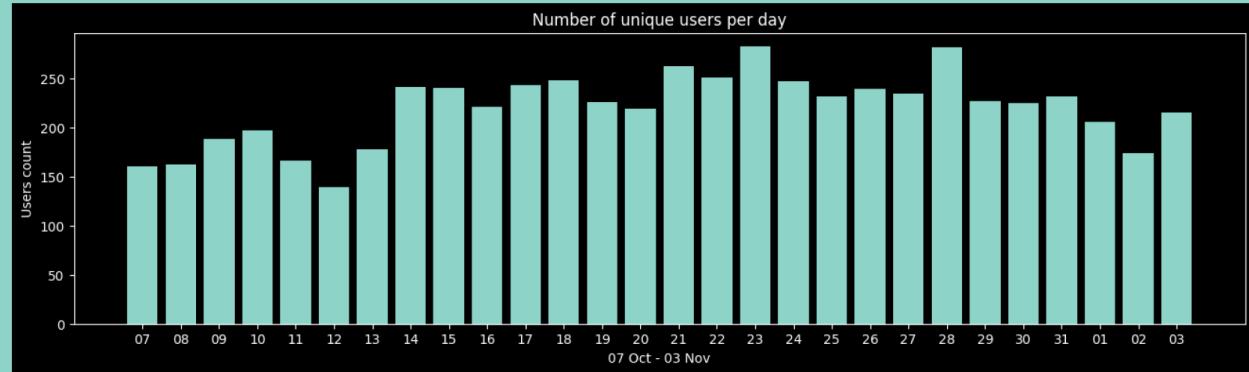


The session was analyzed using an inactivity interval of **20** minutes, based on the **OWASP (Open Web Application Security Project) standards**

The majority of people use the application for up to **2** minutes, **1-4** times a day

CHANGE IN NUMBER OF USERS

The number of new users per day is trending downward, with a slight increase in the number of unique users

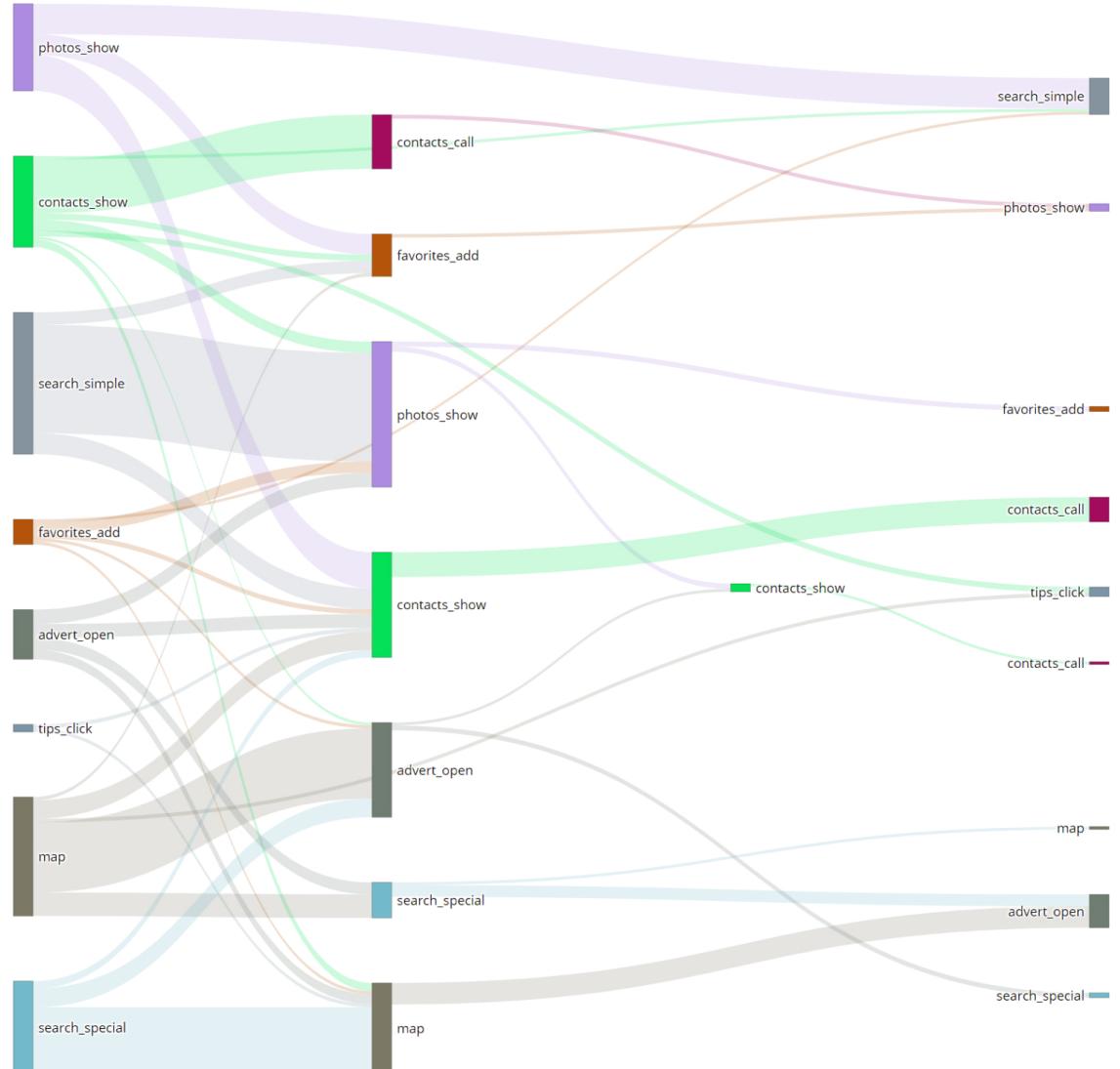


SANKEY DIAGRAM

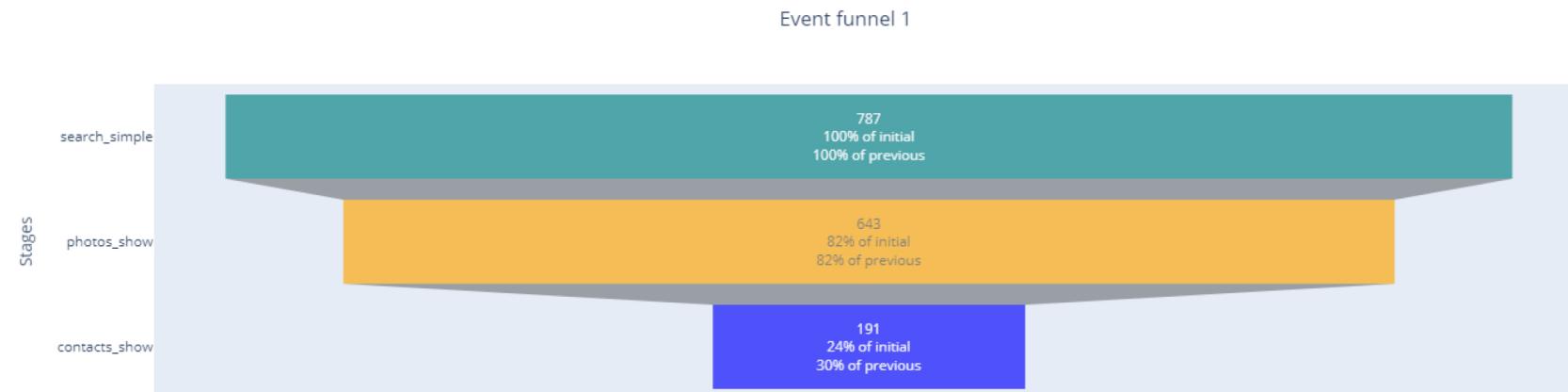
The Sankey diagram shows the distribution of the main scenarios. It is noteworthy that the scenarios are no more than **4** stages, and more often the user needs only **2** stages to get to the target event **contacts_show**

10

Sankey Diagram

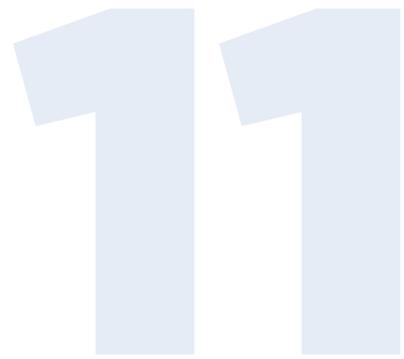


SCENARIO FUNNELS

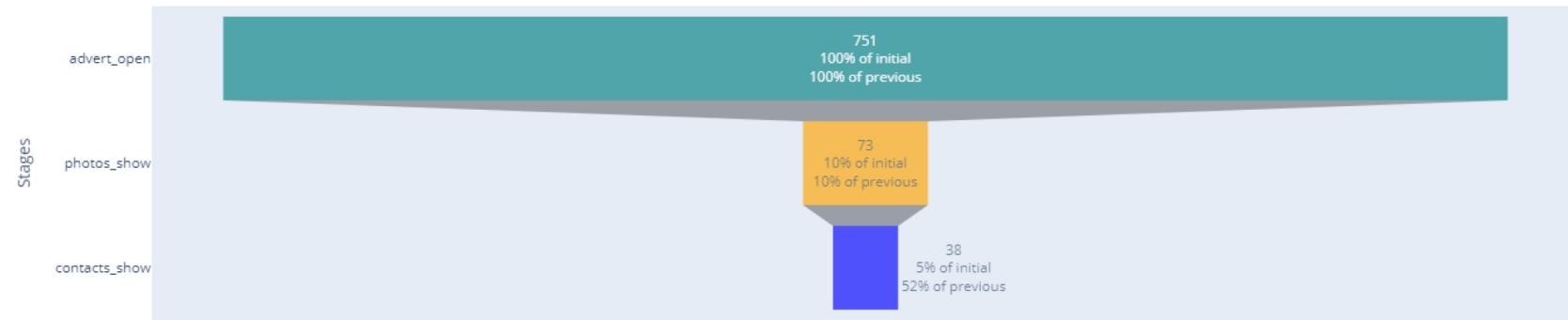


simple search → view photos → view contacts

quite a large percentage look at photos after searching, but only about a third then look at contacts



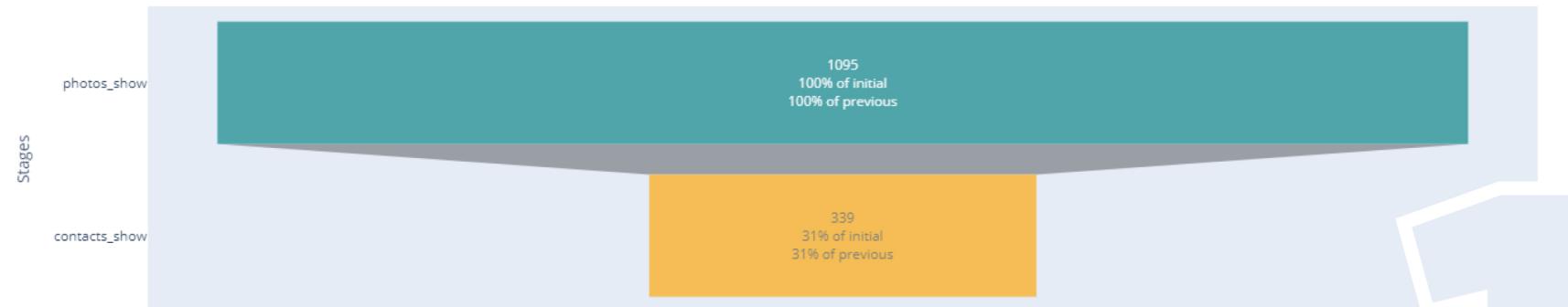
Event funnel 2



opening an ad → viewing photos → viewing contacts

only 10% of users go from the ad card to the photos, but **50%** of them look at the contacts, that is, people who look at photos, more often than others, also look at the contacts

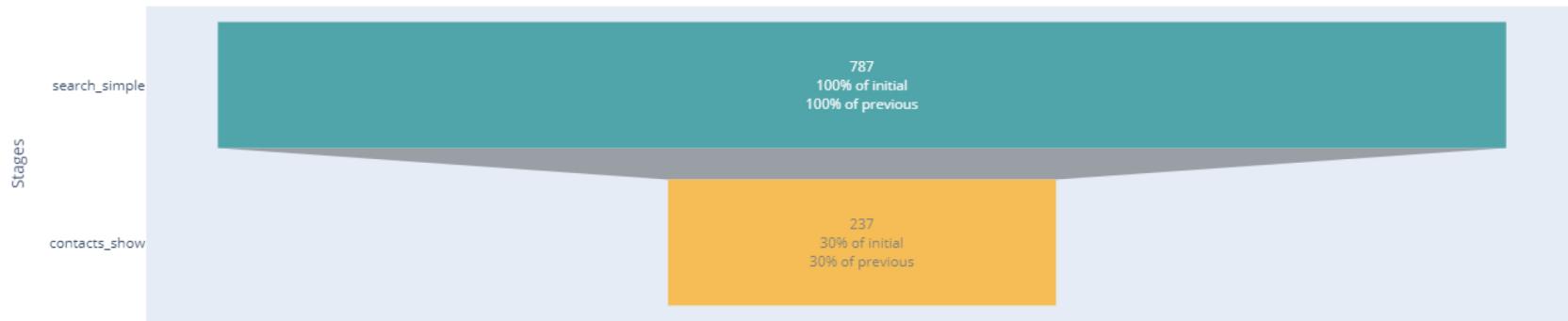
Event funnel 3



viewing photos → viewing contacts

transition from viewing photos directly to contacts gives **31%** conversion, again about 1/3

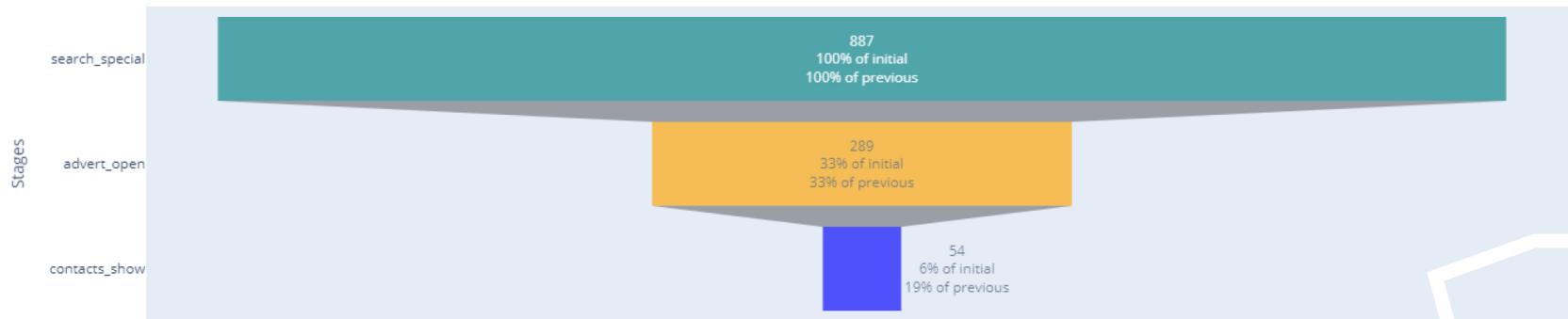
Event funnel 4



simple search → view contacts

standard search gives us a third of users who went to contacts

Event funnel 5



specific search → opening an ad → viewing contacts

from specific search options, a third goes to the card, but only 1/5 of them go to contacts and only 6% of those who used the search

HYPOTHESES TESTED

Hypothesis - conversion to contact views varies across groups:

- A - performing actions tips_show and tips_click
- B - performing only tips_show

Null hypothesis - there is no difference in conversion between groups A and B

	EVENTS	CONVERSION	CONCLUSION (TESTED AT ALPHA = 0.05)
group A	tips_show & tips_click	31%	the null hypothesis is rejected*
group B	tips_show	17%	

* P-VALUE: 10^{-8}

Hypothesis - conversion to contact views varies across groups:

- A: viewing photos
- B: not viewing them

Null hypothesis - there is no difference in conversion between groups A and B

	EVENTS	CONVERSION	CONCLUSION (TESTED AT ALPHA = 0.01)
group A	photo_show & contacts_show	31%	the null hypothesis is rejected*
group B	contacts_show	26%	

* P-VALUE: 0.00133425

RECOMMENDATIONS

- It is recommended to add logging of the "start page" action. This will help improve the accuracy of user counting and become the starting point for most analytical funnels. It will also make it easier to track the frequency of user visits to the application at different times
- Attention should be paid to the development of the recommendation system
- It is necessary to bring the database to a common format to avoid duplication of **contacts_show** and **show_contacts** events
- It is recommended to rename events from **search_1** to **search_7** to more intuitive names or document their meanings