Introduction

- Vanguard, a US-based investment management company wants to evaluate a new UI Design and its influence on the completion of a process.

- **Did the new UI lead to higher completion rates ?**

Data Overview

Three datasets used

Client Profiles

- Account Tenure
- Age
- Gender
- Number of Accounts
- Total Balance
- N° Calls
- N° Logons

Digital Footprints

- Client ID
- Visitor ID
- Visit ID
- Process Step
- Date Time

Experiment Roster

- Client ID
- Roster

Data Cleaning

- Standardizing format
- Removing Clients not in Experiment Roster
- Sorting values by Client ID, Visit ID, Process Step and Datetime
- Changing "confirm" step to "validate"
- Replacing NaN values by median for numerical value and by U for Gender

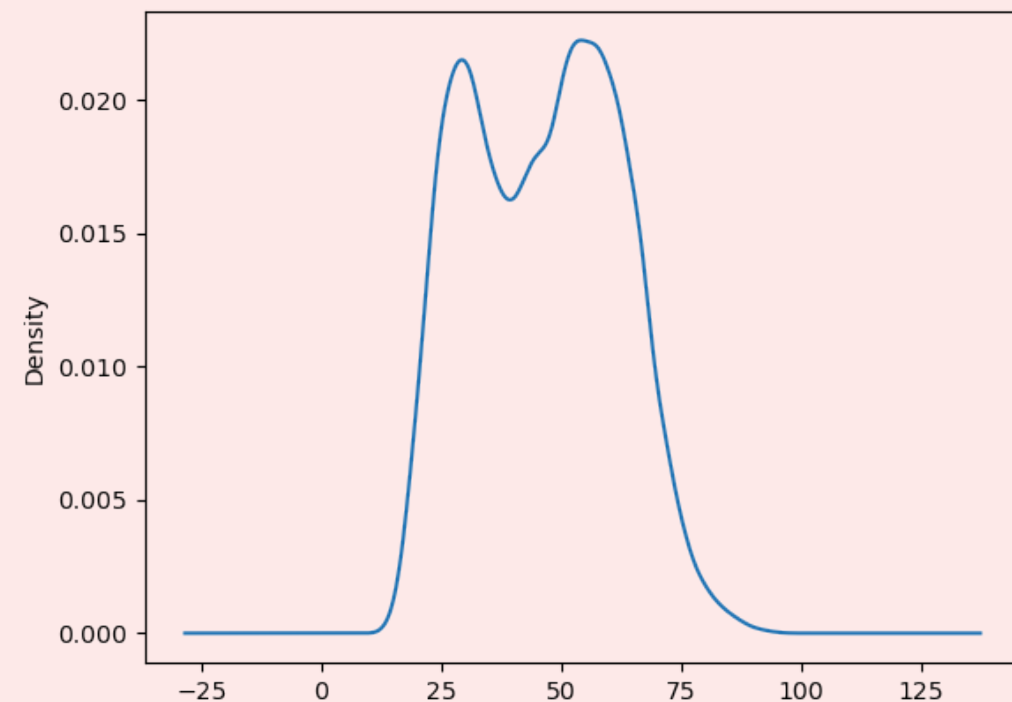|		
- Account Tenure - Age - Gender - Number of Accounts - Total Balance - N° Calls - N° Logons	- Client ID - Visitor ID - Visit ID - Process Step - Date Time	- Client ID - Roster

Vanguard User Persona

The "median" client of Vanguard :
- 47 years old
- Vanguard client since 11 years
- Has 2 accounts
- Total balance of 63k $
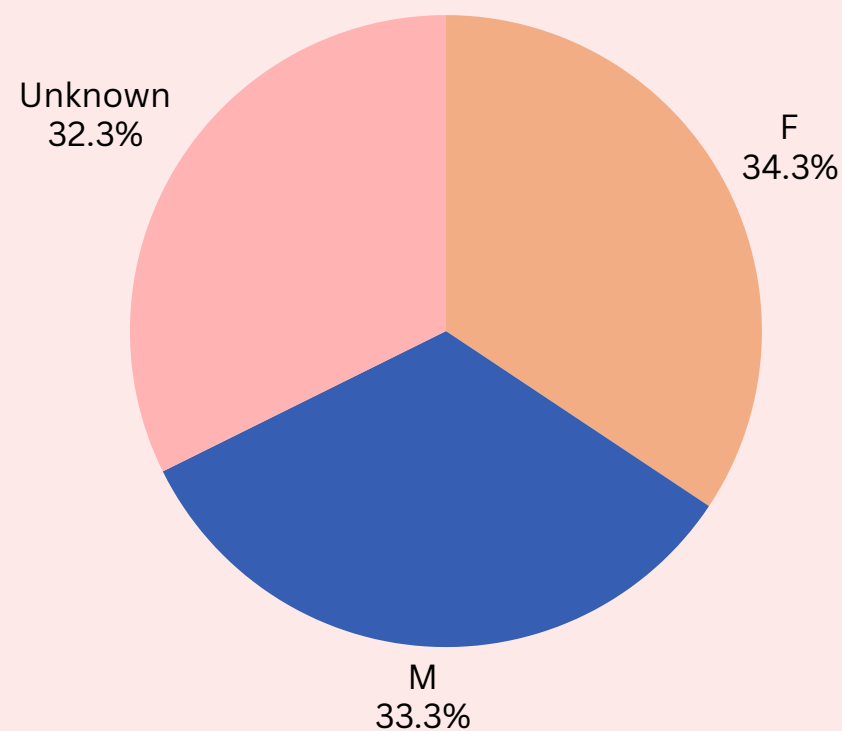- Logs in once per month
- Calls every other month

Exploratory Data Analysis (EDA)

Age

- The age distribution of the clients is bimodal, peaking between the ages of 25/30 and 55.
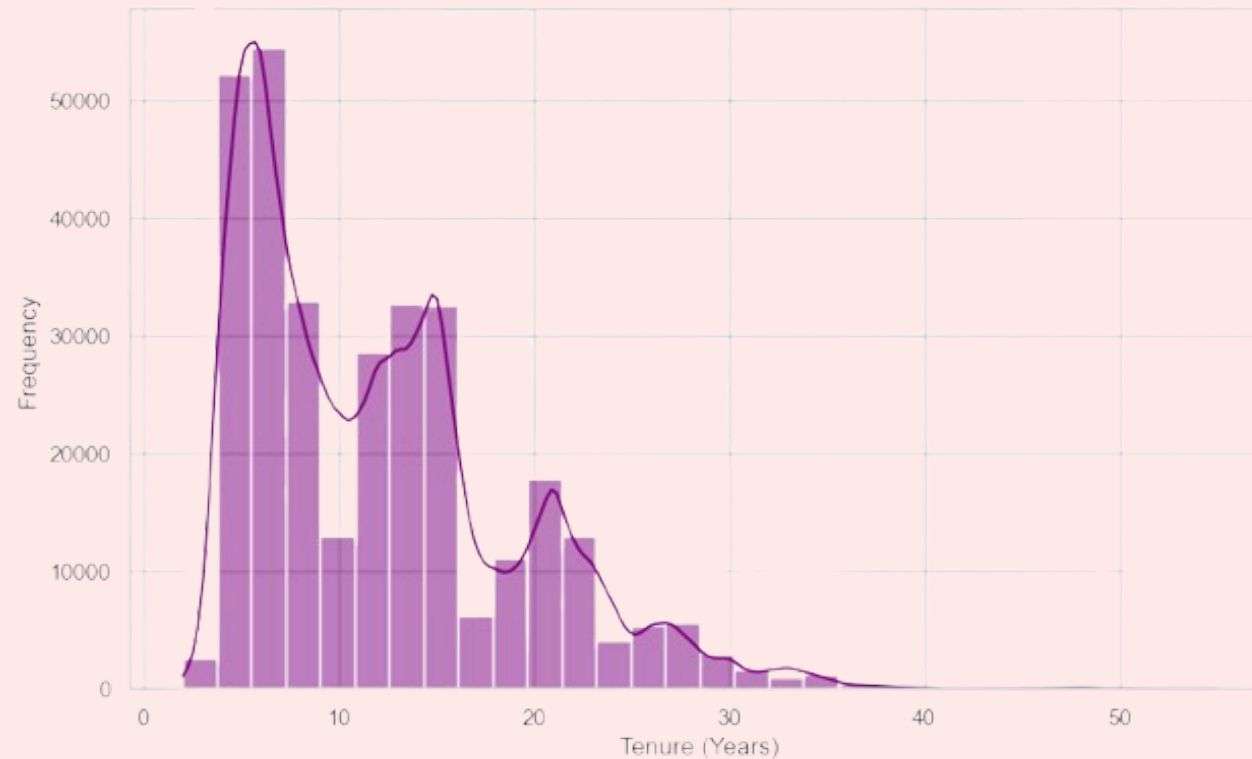- A minor decline at age 40

Gender

- The client sample's gender distribution is roughly equal.
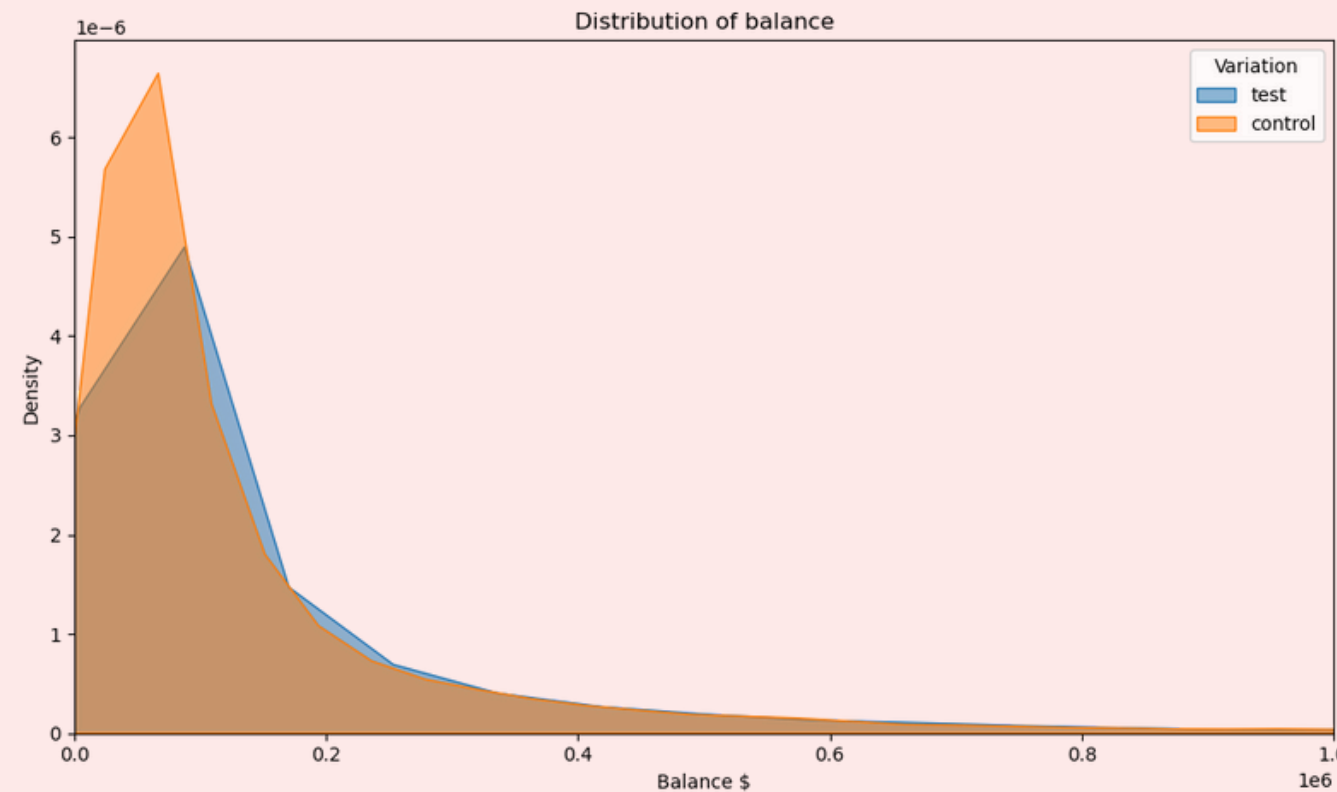- Unidentified is the mark for about one-third of it.

Exploratory Data Analysis (EDA)

Client Tenure

Balance

- Client tenure has a positive skewness and is normally distributed.
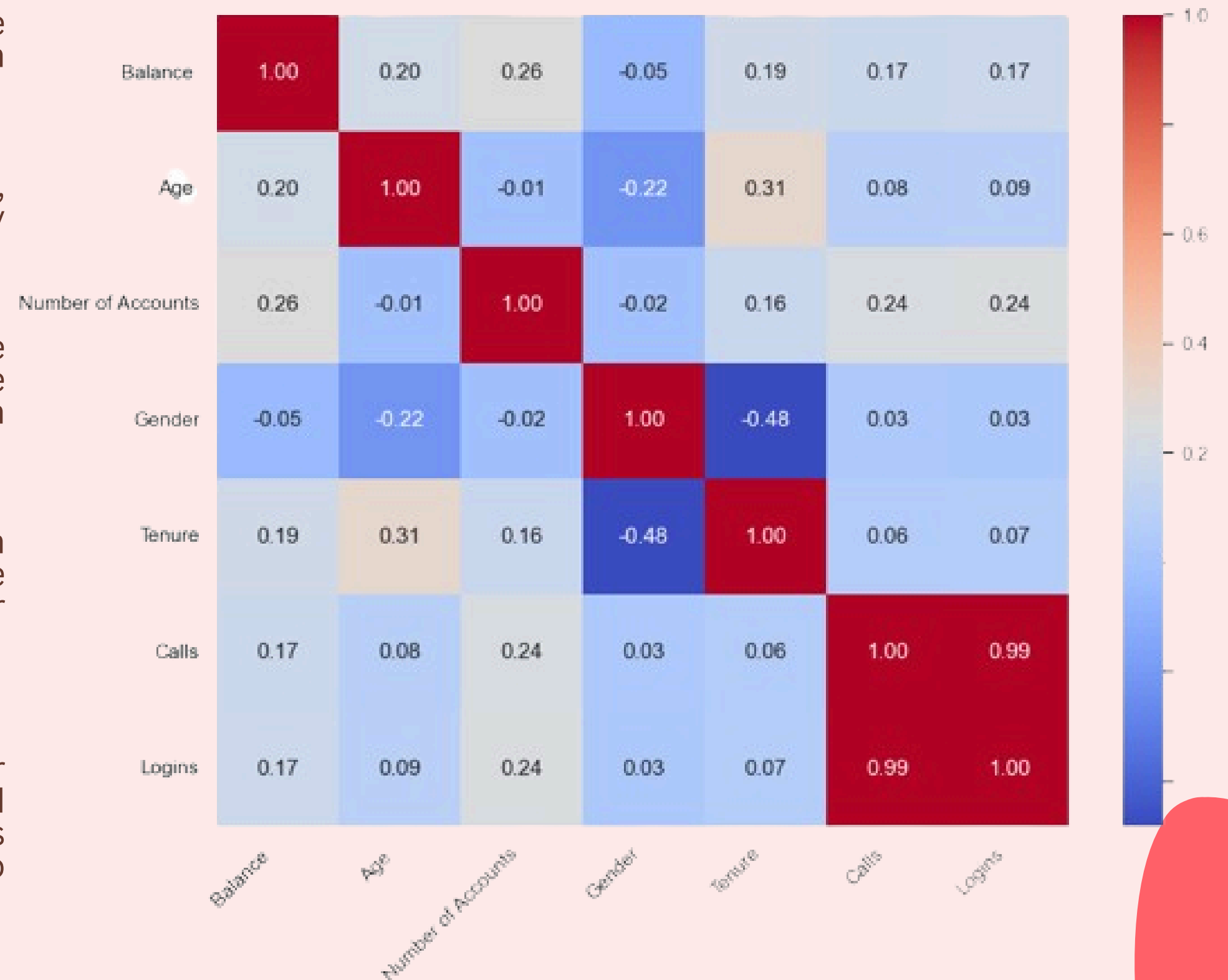- Most clients have been with the company for five to fifteen years.

- A small proportion of customers have higher balances, creating a long queue on the right.
- The majority of customers have low balances, which may indicate low use of financial services or a concentration of income on specific customers.

Correlation

- Calls and Logins :
  - Clients who interact with the service frequently via calls are also likely to log in often.

- Balance/ Num accounts :
  - The association is not extremely strong, users with larger balances typically may have a little more accounts.

- Age/ Tenure :
  - Depending on their age, some clients are more likely to have been with the organisation for longer, which is in line with expectations.

- Balance/Age :
  - There is a weak positive correlation between balance and age, that may indicate older client may tend to have higher account balances

- Other Variables :
  - Most other correlations are close to 0 or very weak. This indicates limited interdependence between those variables (e.g., gender does not strongly relate to tenure, accounts, or age).

|	Balance	Age	Number of Accounts	Gender	Tenure	Calls	Logins
Balance	1.00	0.20	0.26	-0.05	0.19	0.17	0.17
Age	0.20	1.00	-0.01	-0.22	0.31	0.08	0.09
Number of Accounts	0.26	-0.01	1.00	-0.02	0.16	0.24	0.24
Gender	-0.05	-0.22	-0.02	1.00	-0.48	0.03	0.03
Tenure	0.19	0.31	0.16	-0.48	1.00	0.06	0.07
Calls	0.17	0.08	0.24	0.03	0.06	1.00	0.99
Logins	0.17	0.09	0.24	0.03	0.07	0.99	1.00

Performance Metrics

Completion Rate

The success rate of clients who successfully finish the process and track the quantity of clients who discontinue it in order to pinpoint locations where the new procedure has to be improved.

Time Taken

How much time the customer spends at each step

Number of Sessions

How many sessions needed for a user to complete the process

Performance Metrics Completion Rate

Percentage of visits attaining each process step by variation (Control vs Test)
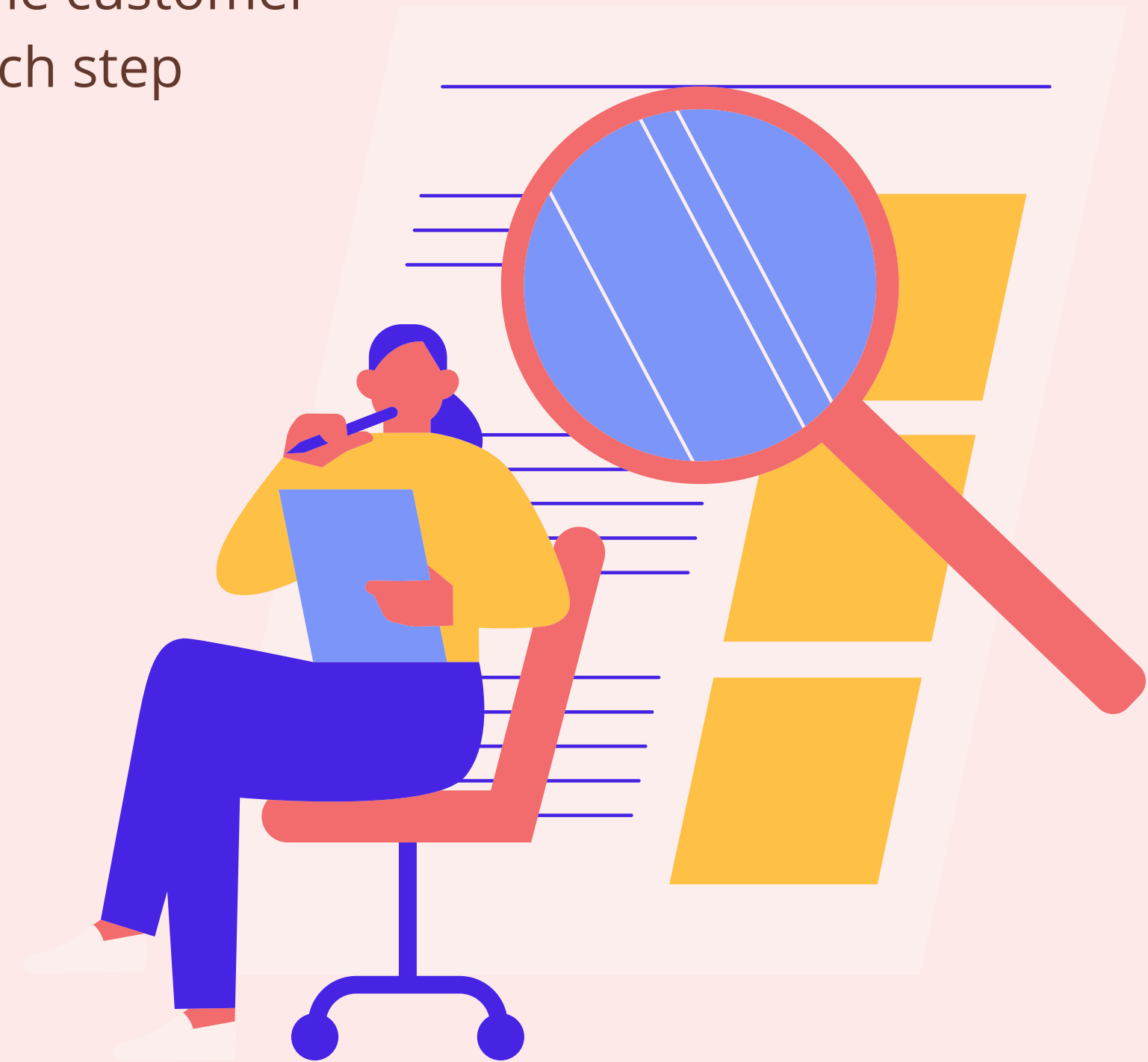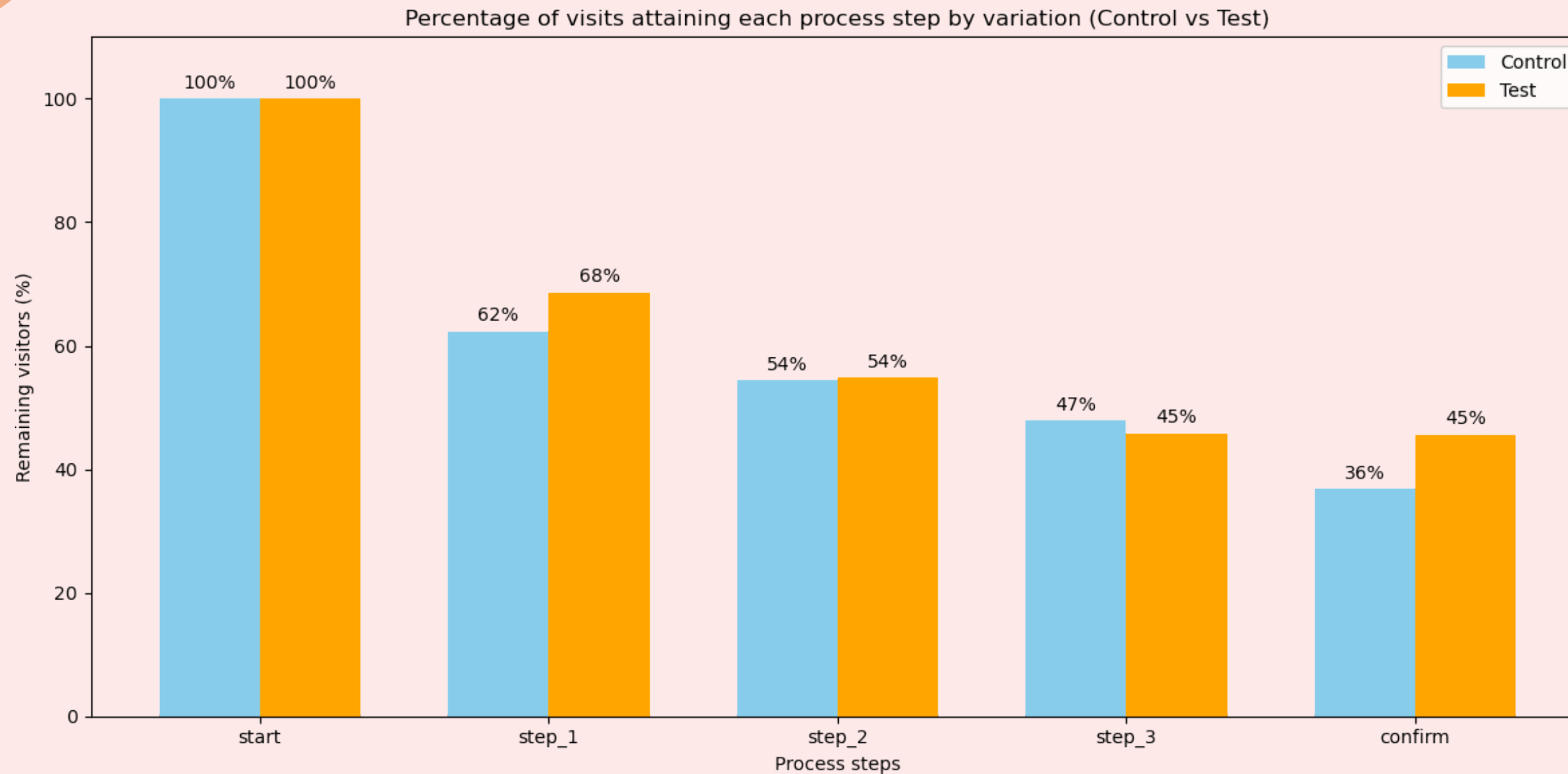
The chart indicates that the test group generally outperforms the control group in terms of completion rates, especially at later stages of the process.

Performance Metrics
Time Spent per Step

Median Time Spent per Step by Variation

The chart reveals that the test group generally spends less time at each step compared to the control group, with the exception of step 1. This suggests that the changes implemented for the test group might be lowering the complexity or the amount of information users need.

Performance Metrics
Number of Sessions needed

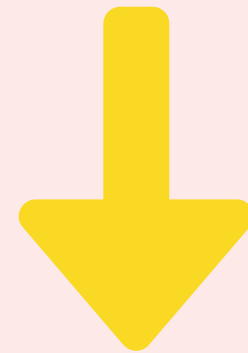Distribution of Number of Sessions for Conversion
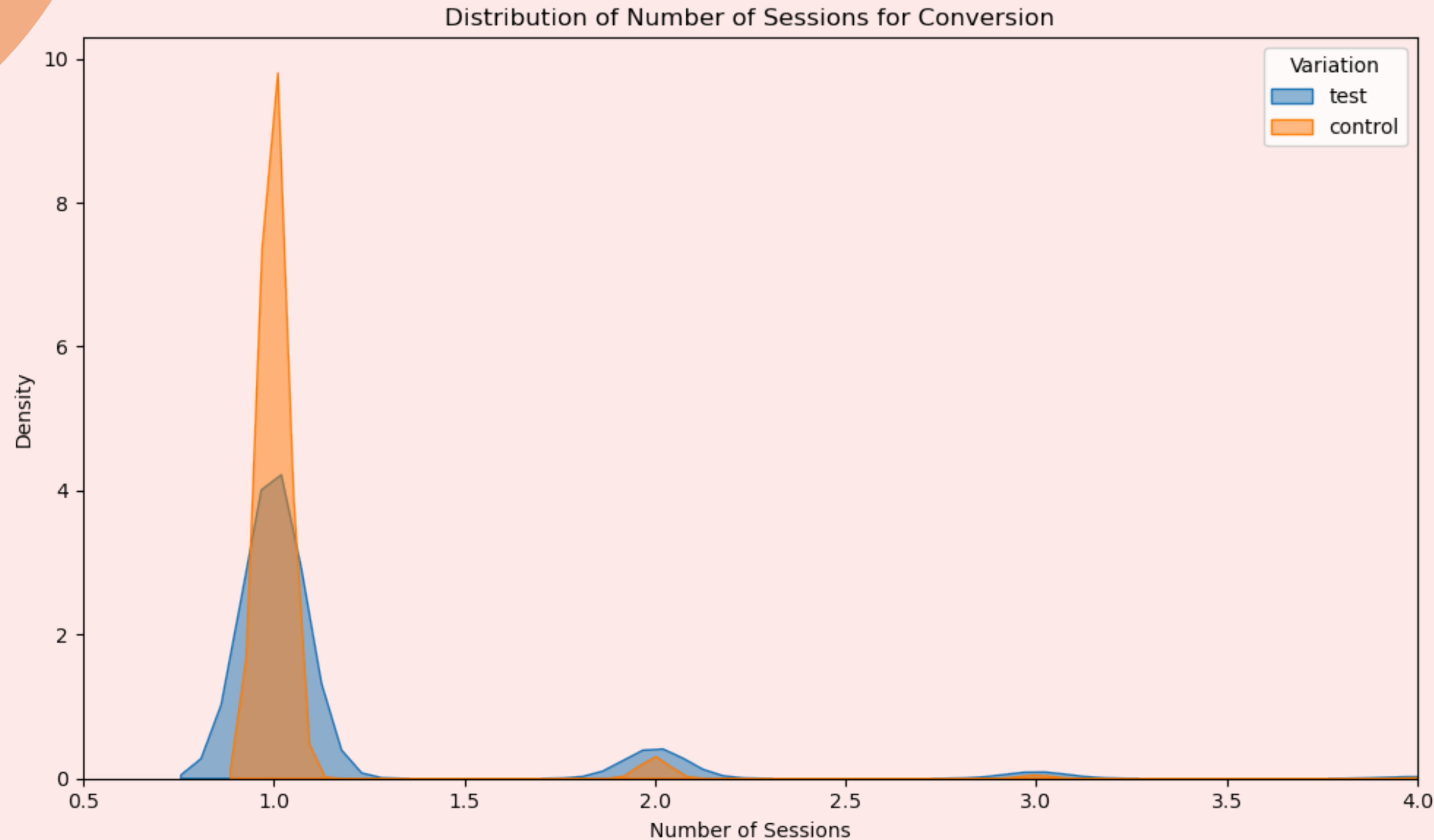
The density plot indicates that the control group needs less session than the test group to complete the process. The new UI can still get better so that people only need one session to complete the process

Hypothesis Testing

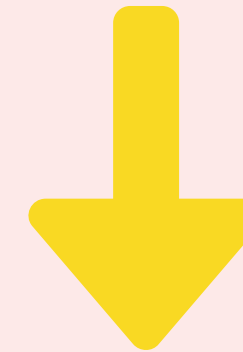**Z-Test for completion rates with 5% significance**
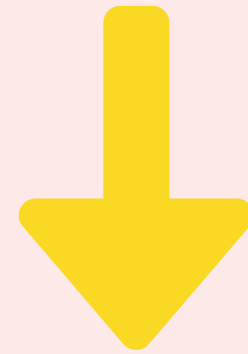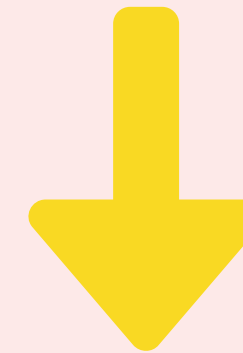
HO: $P_t > 5\%$
H1: $P_t < 5\%$

The success rate of clients exposed to the new UI is statistically greater.

**One-Tailed P-Value Test for Time Spent per Step with 5% significance**

HO: $P\_val < 5\%$
H1: $P\_val > 5\%$

Clients that use the new UI finish tasks statistically faster.

Experiment Evaluation

- More people in the test group than in the control group (roughly 18k vs 14k)
- Groups not well distributed (more old people in control group ...)
- Longer duration would've been beneficial to analyze the effect of calls and logons on the process completion
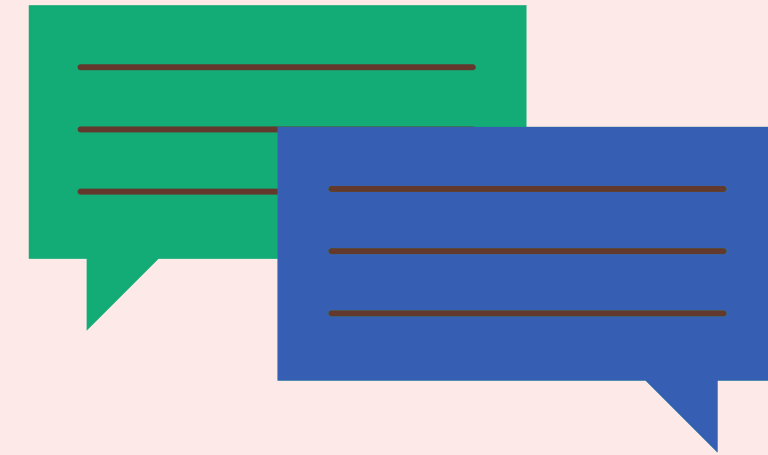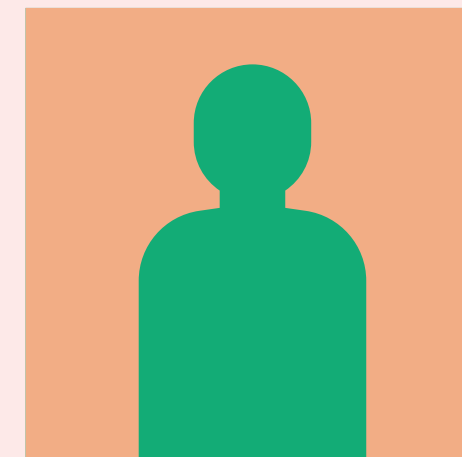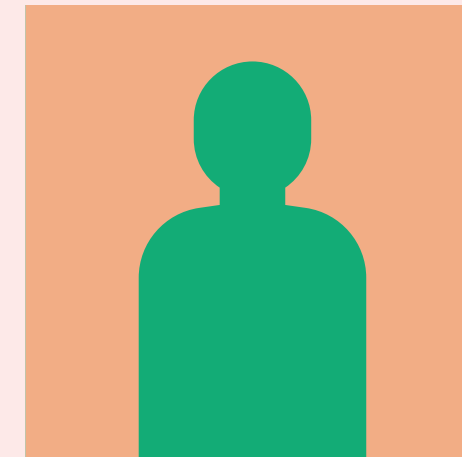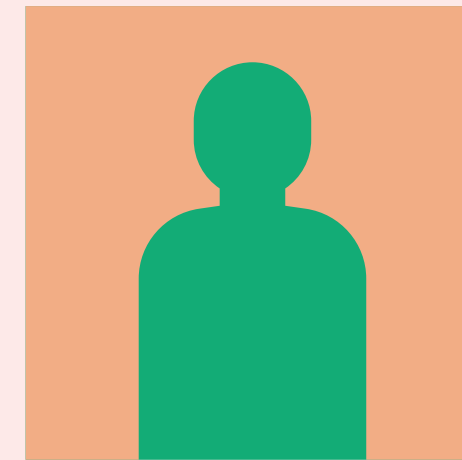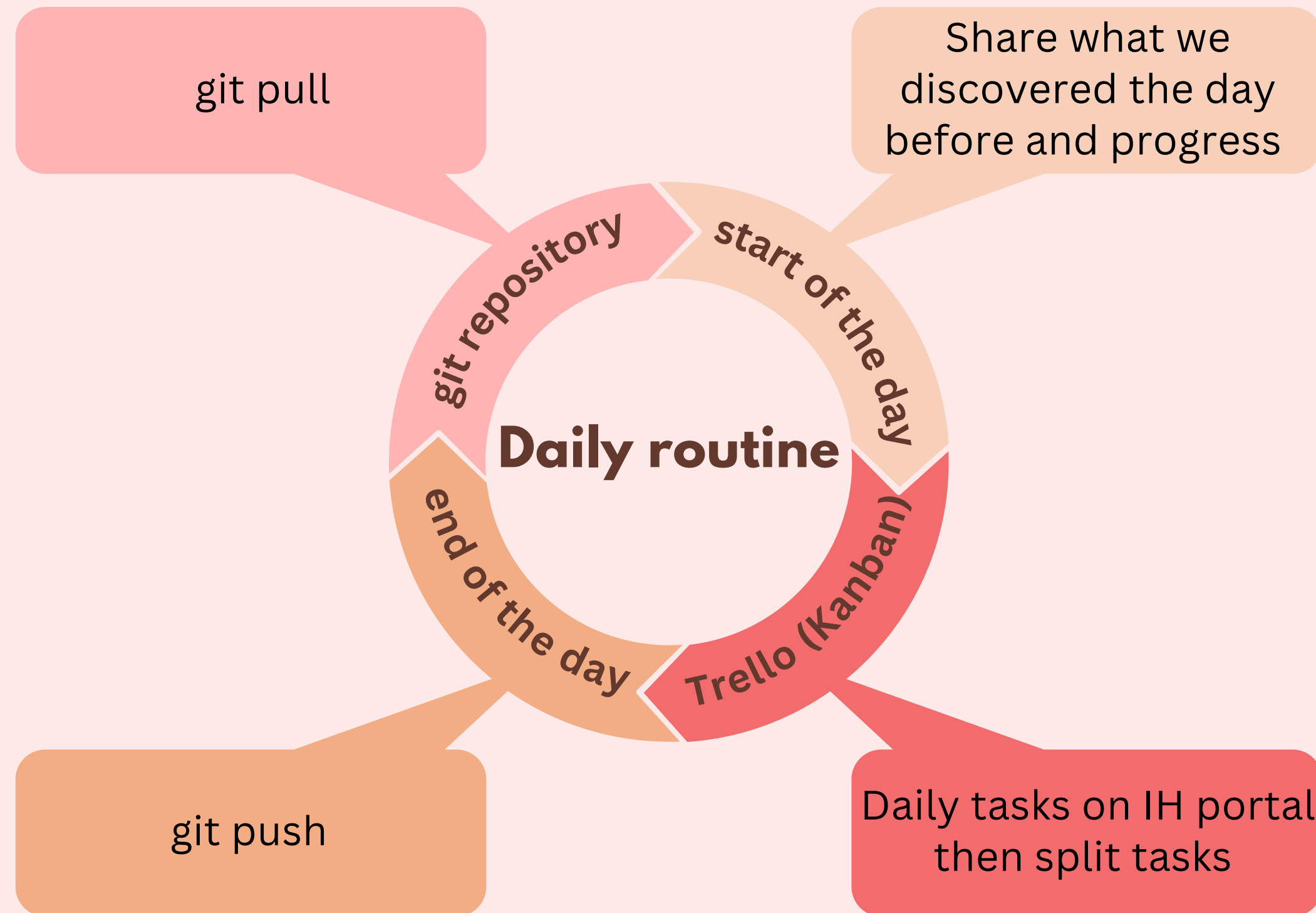
Tableau Visualizations

Tableau story link

Teamwork & Project Management

Reflect on how you divided and conquered the project tasks using your Kanban board. Share insights about your team's collaboration and project management strategies.

git pull

Share what we discovered the day before and progress

git repository

start of the day

Daily routine

end of the day

Trello (Kanban)

git push

Daily tasks on IH portal then split tasks

Challenges & Learning

- Always looking at the bigger picture

- Defining a good plan and sticking to it

- Hypothesis testing & statistics - successfully define hypotheses

- Tableau :
    - Challenge : try to reproduce graphs with the complete dataset
    - Learning: for easier reproduction, it's better to have several small dataset samples in a spreadsheet.

Conclusion

The Test UI significantly outperformed the Control UI, particularly among younger.

- **To further optimize the user experience, we recommend the following**:
  - **Reduce friction**: Simplify steps 2 and 3 to minimize drop-offs.
  - **Simplify the process :** some people need more than one session to complete the process
  - **Enhance accessibility**: Improve the UI for older users with clearer, more intuitive visuals.
  - **Iterate and test**: Continuously refine the funnel through targeted A/B tests.

By implementing these recommendations, we expect to see further improvements in conversion rates and overall user satisfaction.

Merci !

THANK YOU FOR LISTENING !