

BOOT  
LOADER

— Found The New World —



# BootLoader Donation Prediction and Analysis



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# Team Profile



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Personal interest: Traveling



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Personal interest: Trekking



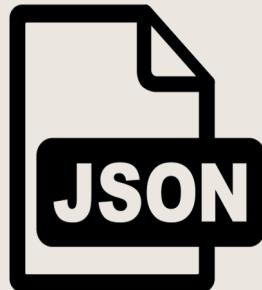
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Personal interest: Music

# Agenda

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1. Business Problem



2. UI/UX Mockups



3. EDA, Feature Selection,  
Feature Engineering and  
Models



4. Dashboard



5. Business insights, Summary,  
Recommendations, Lesson  
Learned



6. Web Page demo



7. Appendix Infographic Poster

# Business Problem

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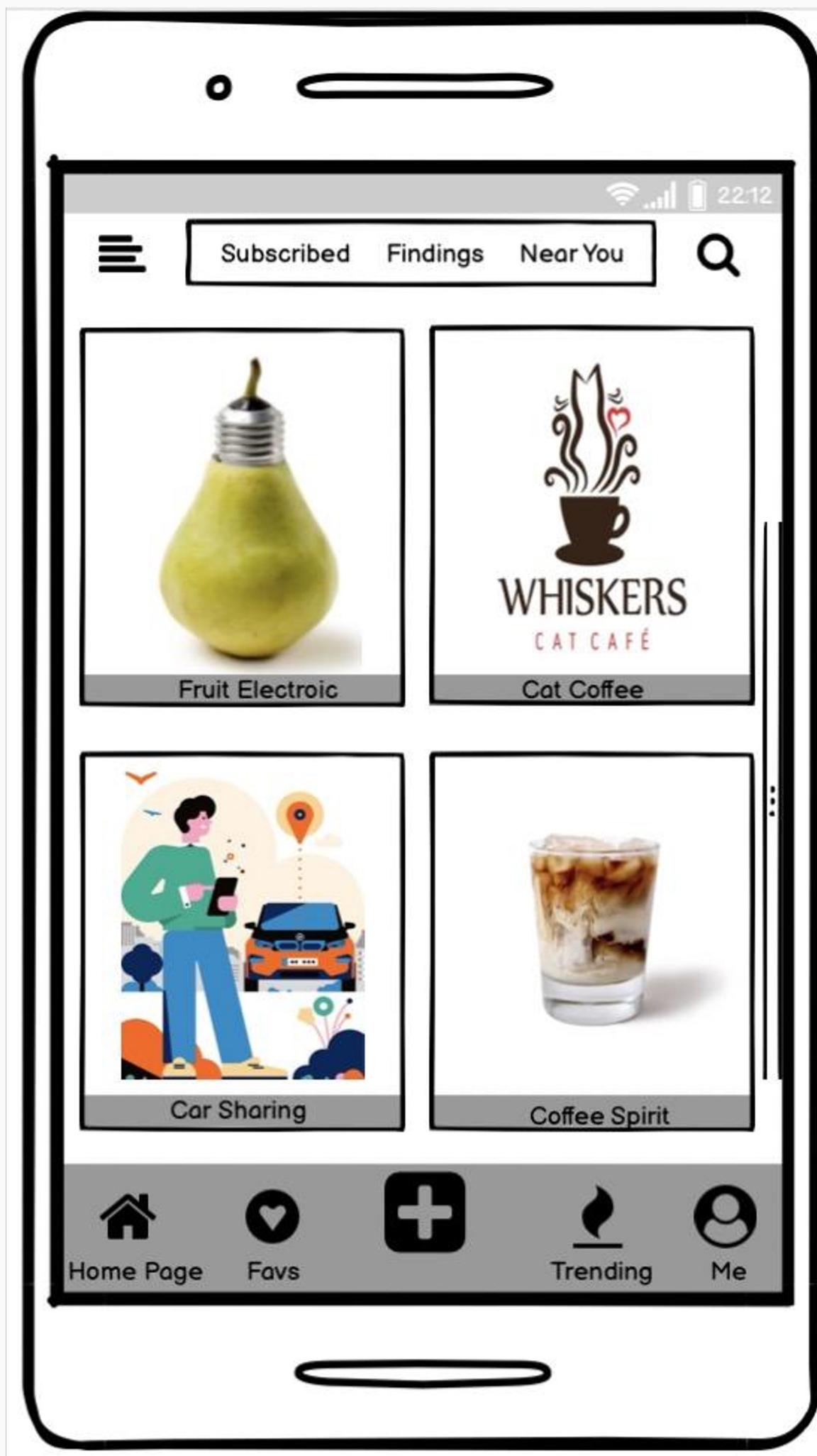
## BootLoader Donation Prediction and Analysis

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-  Determine user characteristics on specific project types
-  Perform analysis on user's preference on projects, for notification delivery
-  Predict the donation amount



# UI/UX Mockups for Bootloader Welcoming Page



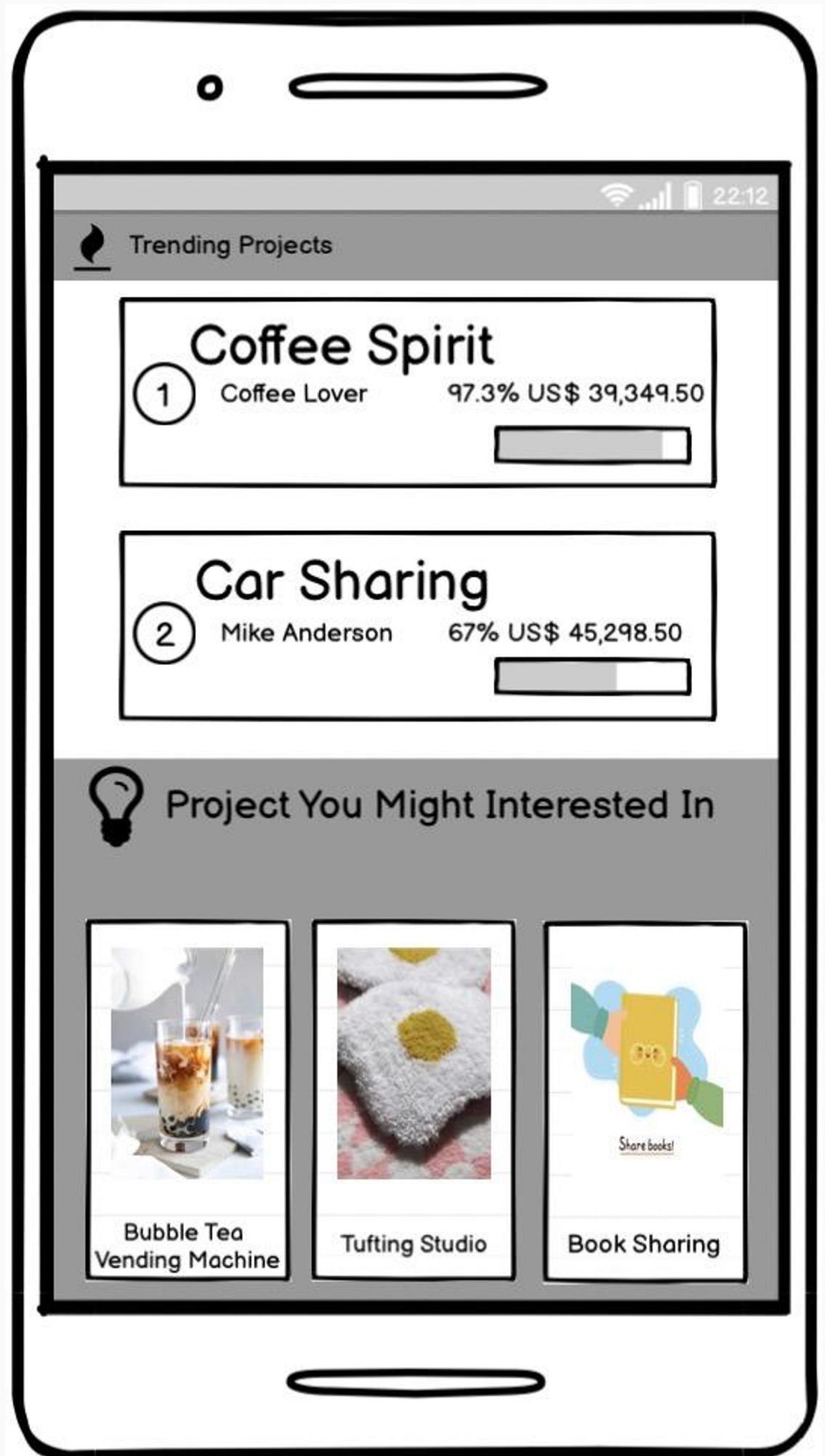
# UI/UX Mockups for Bootloader Home Page





# UI/UX Mockups for Bootloader Project Page





# UI/UX Mockups for Bootloader Ranking Page



# Data Overview

## BootLoader

- Helps people crowdfund their creative projects
- Initiators post their project on BootLoader
- Others could view and donate money to the project to help bring it to fruition



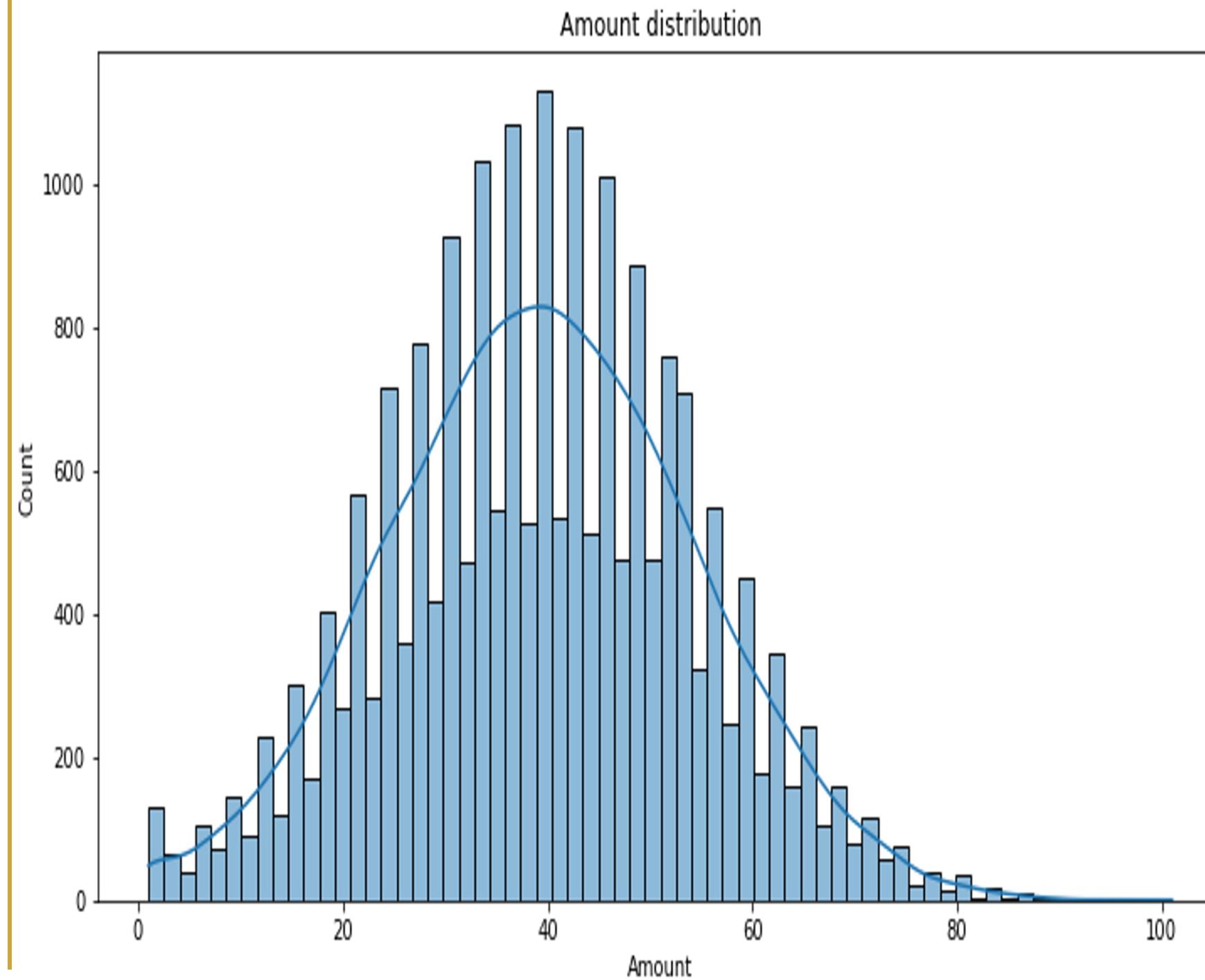
## Data Source

- Localytics Data Visualization Challenge of a fictional crowdfunding mobile app called BootLoader

## Features

- Track user's interactions with the mobile app
- 20658 entities
- 13 features including category, client\_time, amount, session\_id, age range, gender, location, city, state, latitude, longitude, marital\_status and device.
- Target response is amount.

# Data Overview

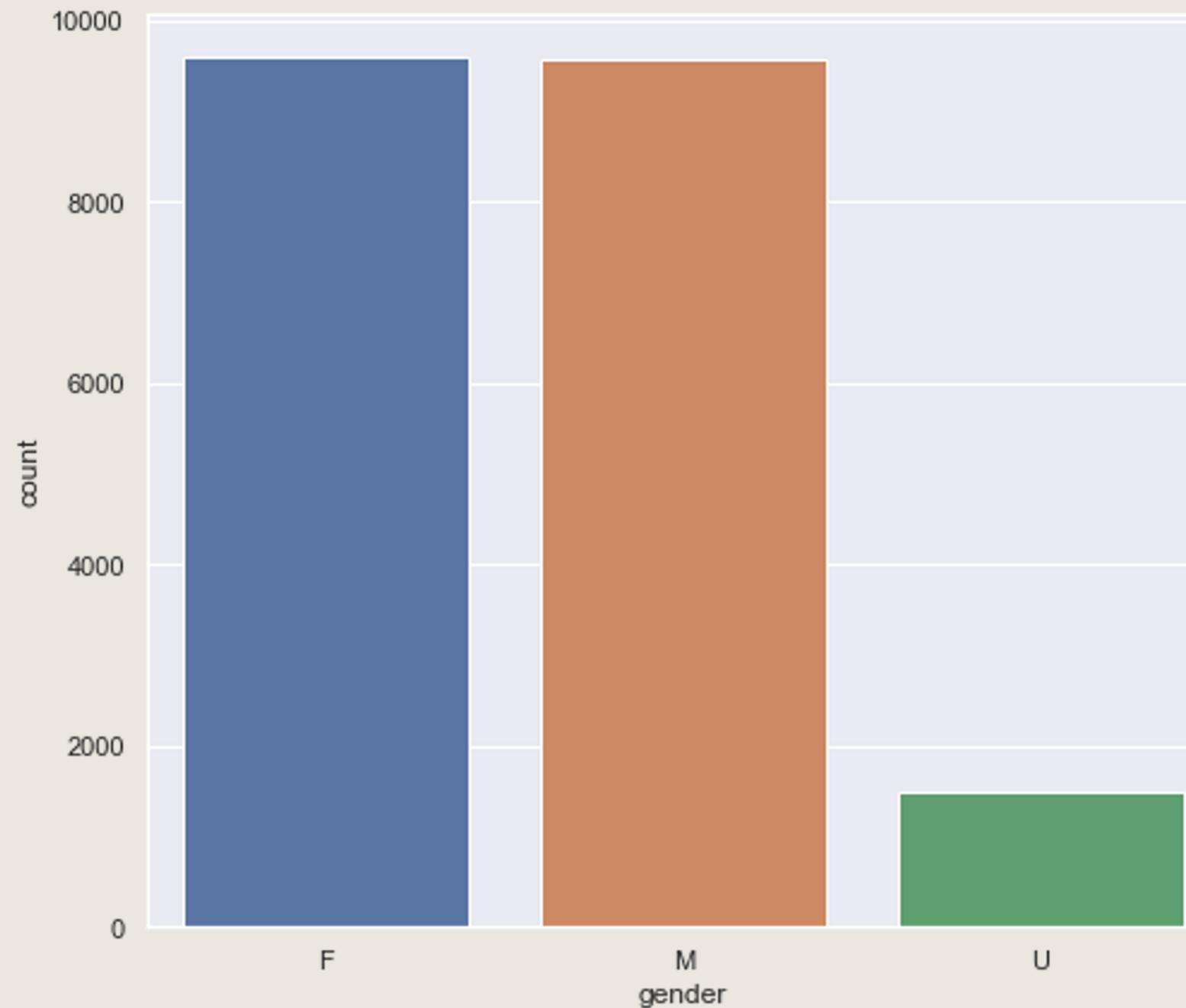


Name	data.json
Dimensions	13 features 20658 rows
File size	2.7MB
Source	<a href="https://github.com/localytics/data-viz-challenge">https://github.com/localytics/data-viz-challenge</a>
Completeness	No missing values

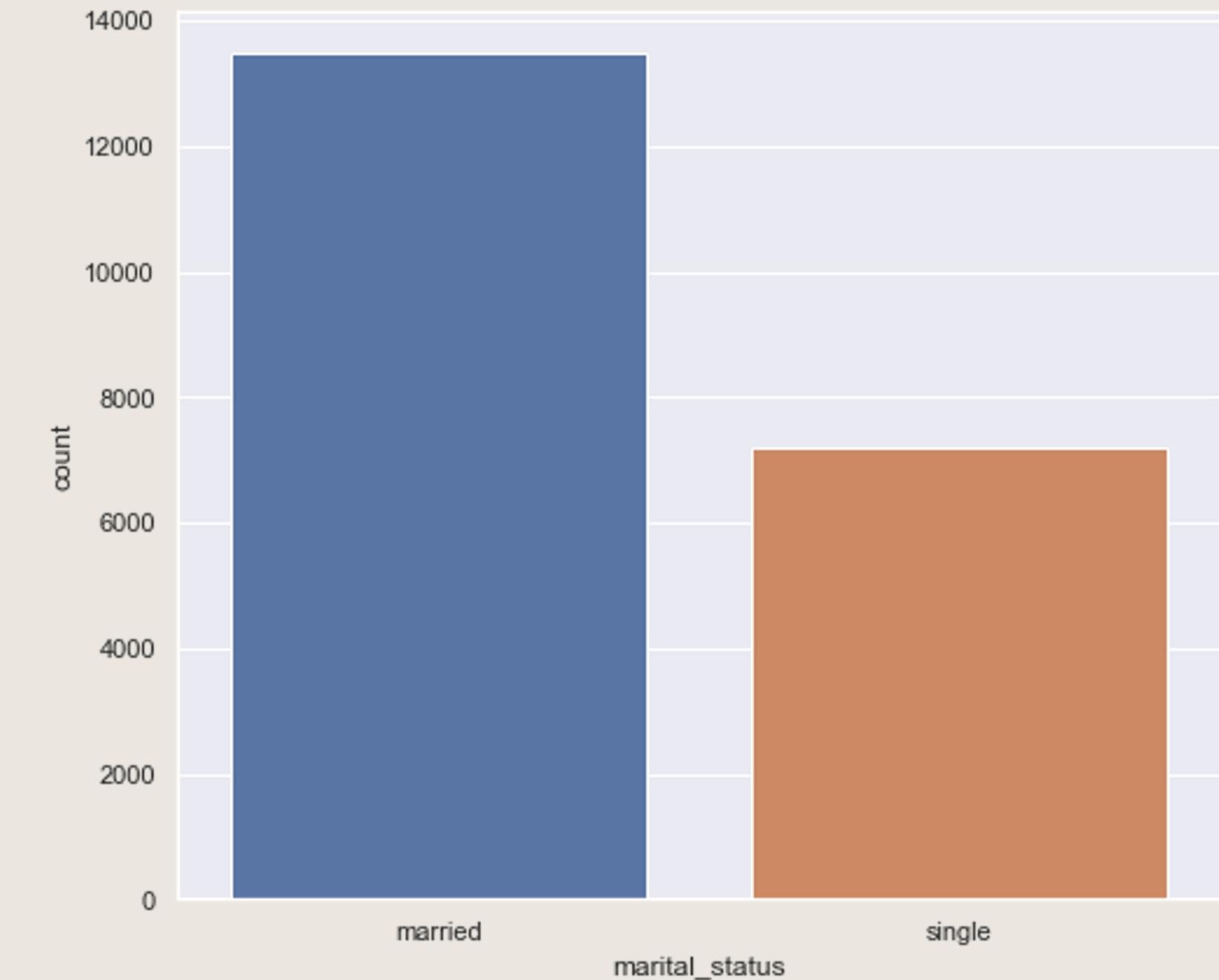


# EDA

○ ○ ●



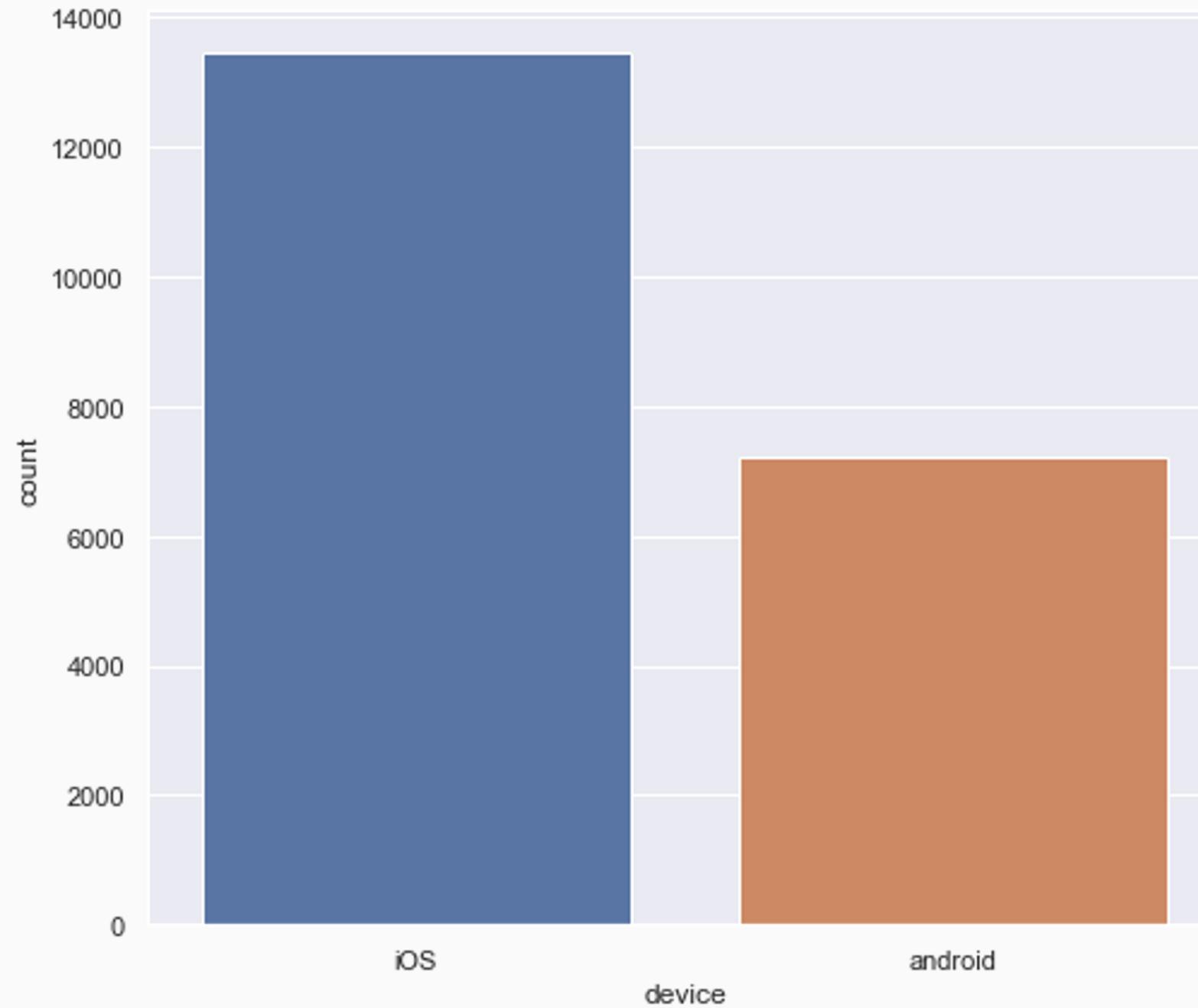
## Gender Distribution



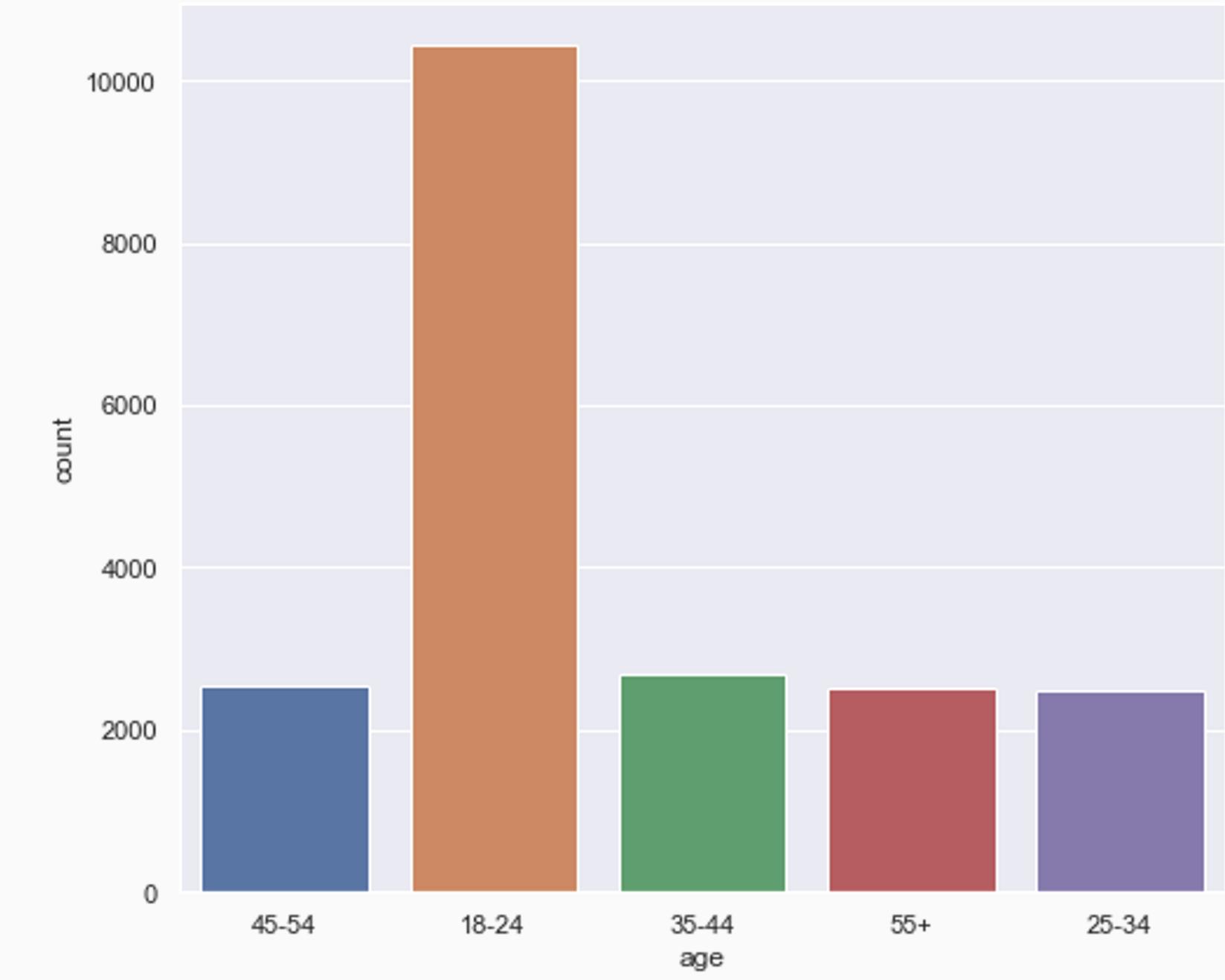
## Marital Status

# EDA

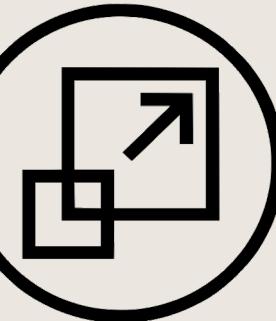
● ● ●



## Device Distribution



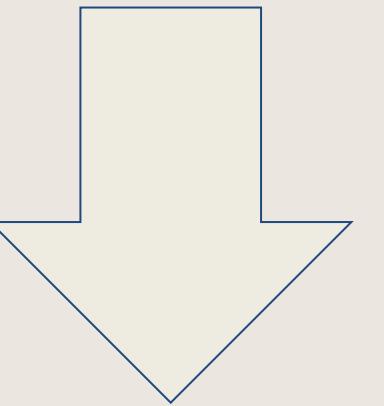
## Age Group Distribution



# Models Preparation



Category	event_name	gender	age	martial_status	session_id	device	client_time	latitude	city	state	longitude	zip-code	amount
Sports	Fund Project	M	18-24	married	1	iOS	1393632162	40.189788	Lyons	CO	-105.35528	80540	31



- Select “category”, “gender”, “device”, “age”, “martial\_status” as variables
- Encode categorical variables to build models

is_Technology	is_Game	is_Fashion	is_sports	is_Environment	is_Male	is_Female	is_married	is_single	is_45-54	is_18-24	is_35-44	is_55+	is_25-34	amount
0	0	1	0	0	0	1	1	0	1	0	0	0	0	61

# Models & Evaluations



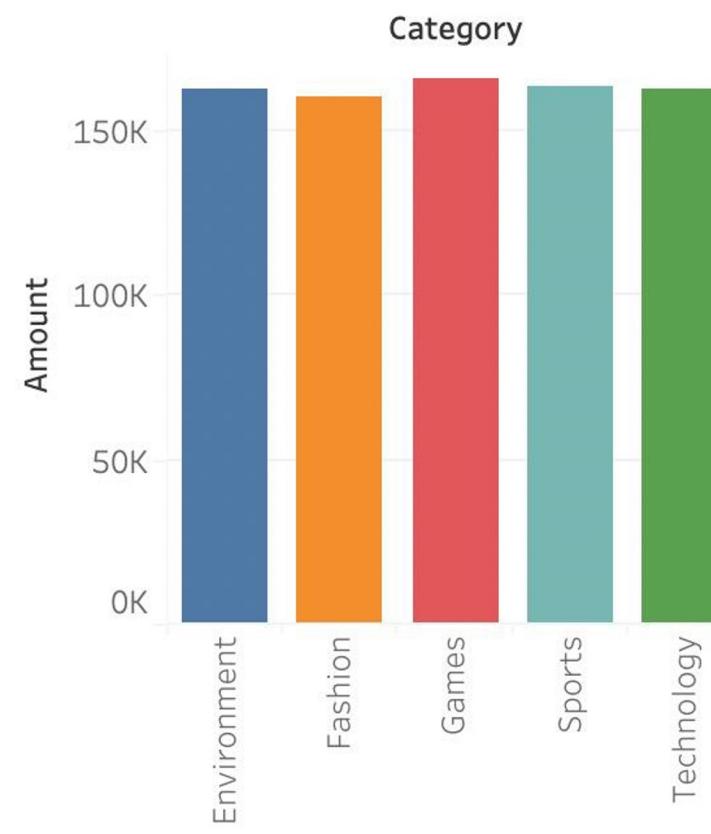
Model	CV RMSE	Train RMSE
 <b>Linear Regression</b>	14.995	14.942
<b>Decision Tree</b>	15.051	14.87
<b>Random Forest</b>	15.015	14.87

# Dashboards

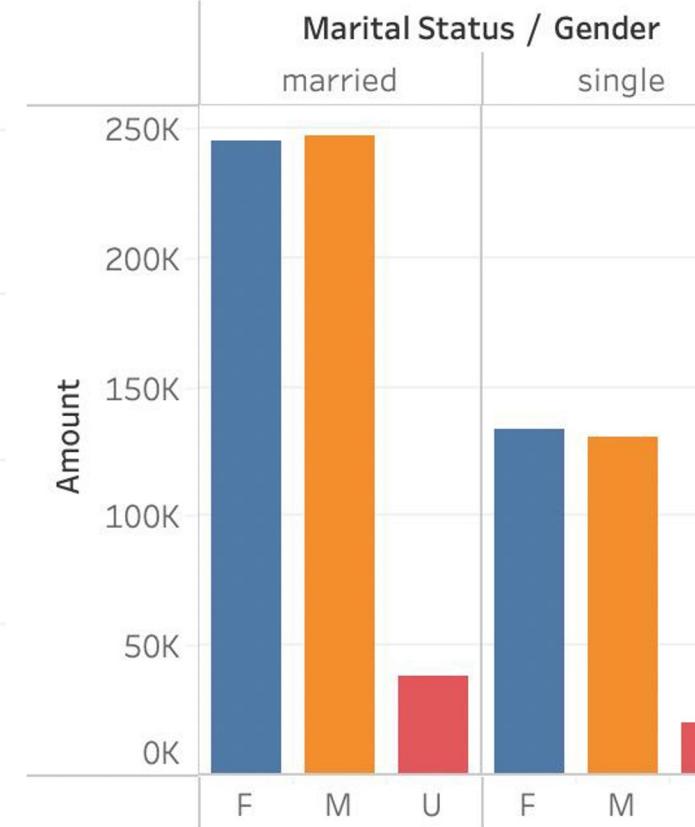
15

What factors will truly affect donation amount?

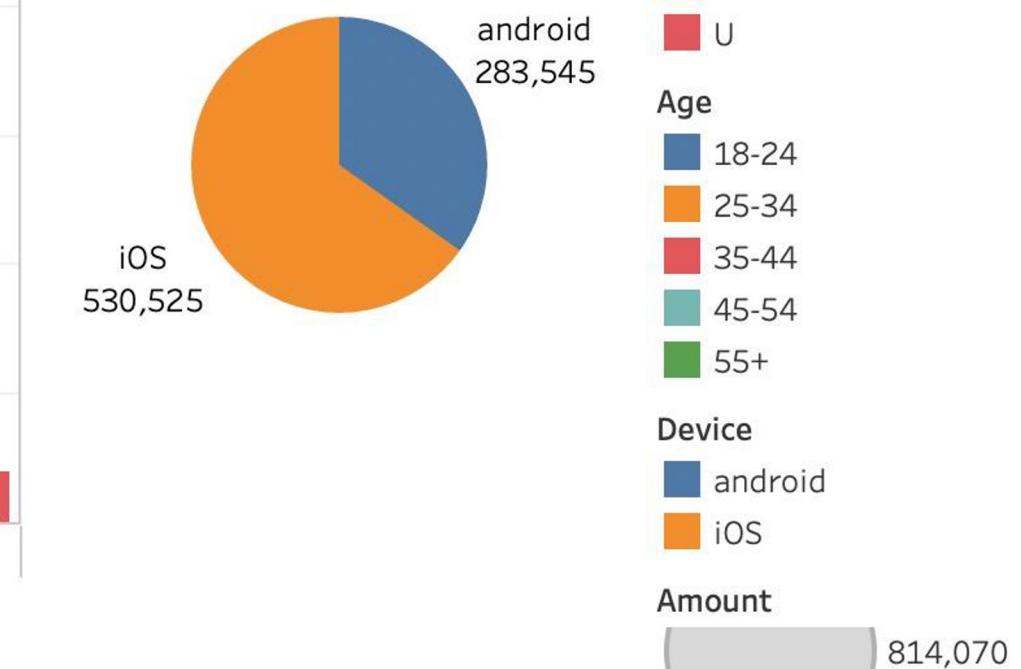
Category



Gender/Marital Status



Device



Category

- Environment
- Fashion
- Games
- Sports
- Technology

Gender

- F
- M
- U

Age

- 18-24
- 25-34
- 35-44
- 45-54
- 55+

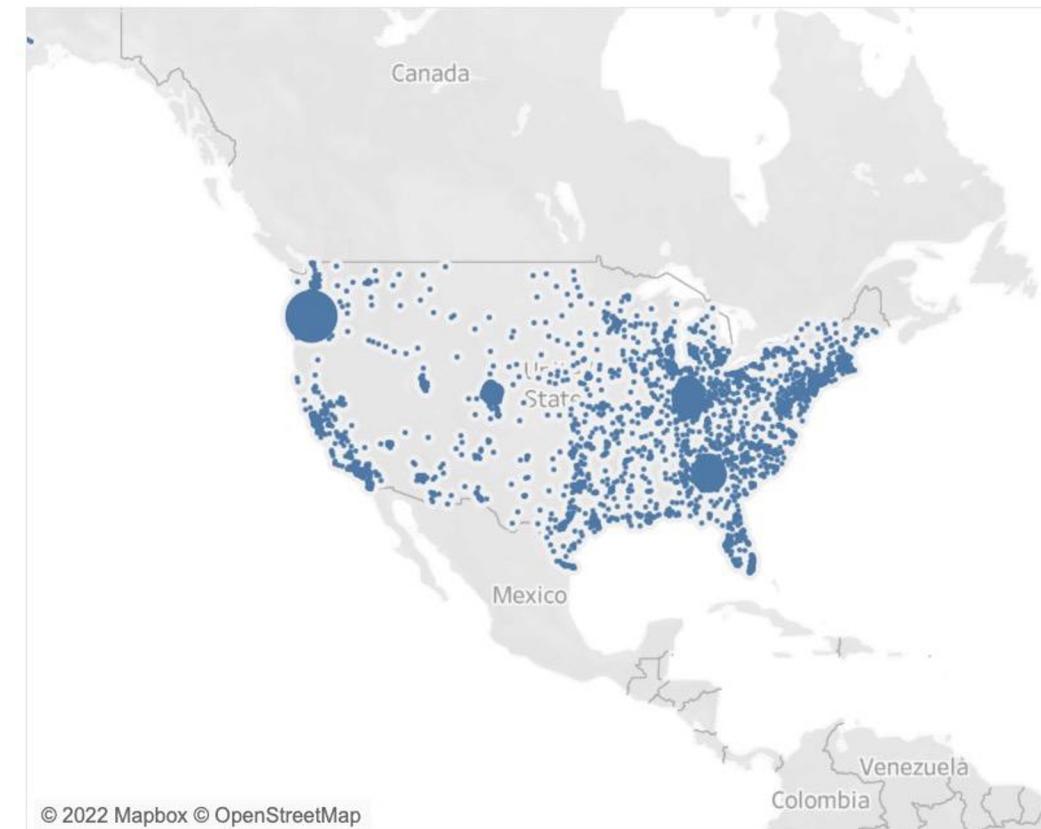
Device

- android
- iOS

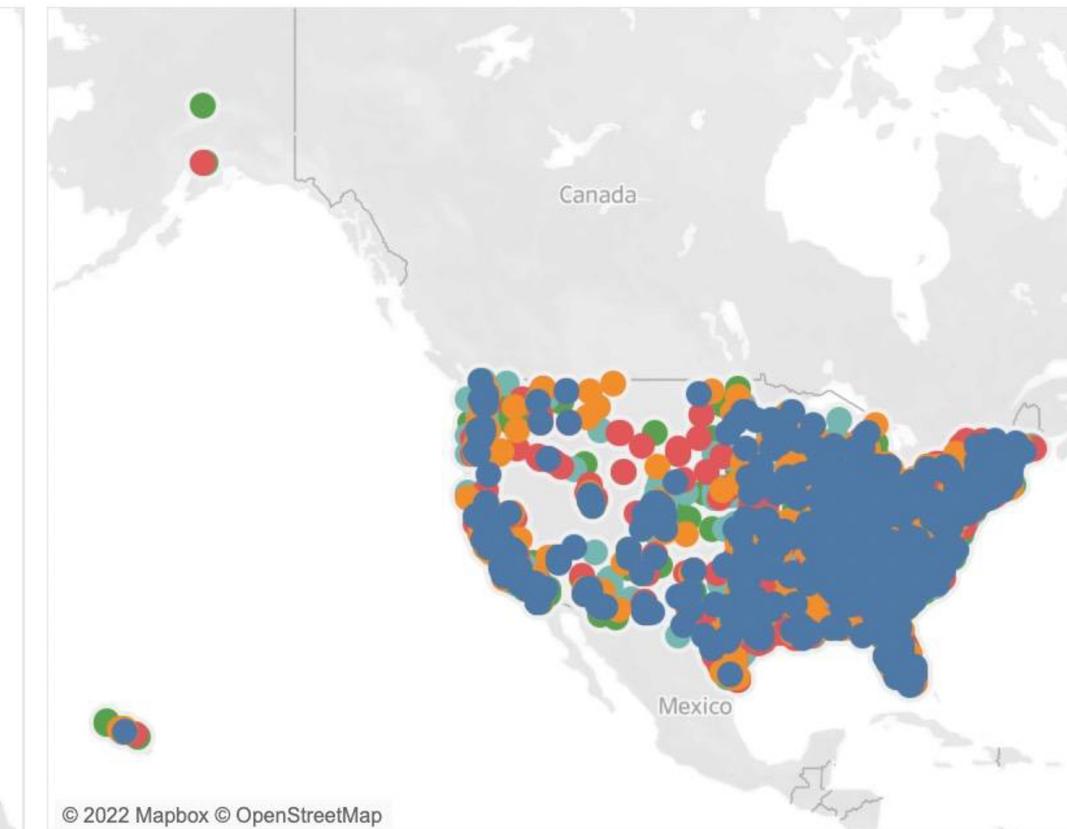
Amount

814,070

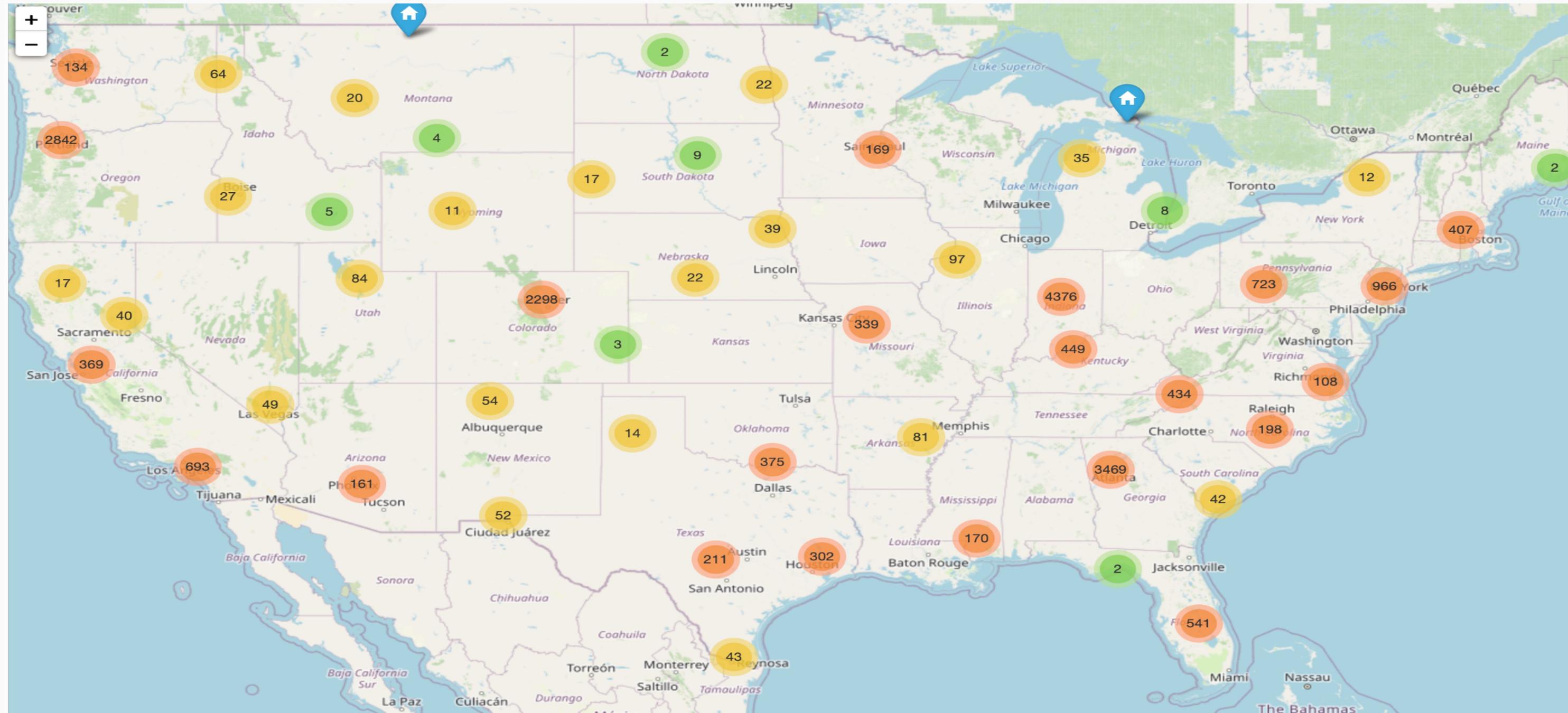
Amount Map



Age Map



# Interactive Visualization



Link: file:///Users/apple/Downloads/eda-final\_project.html



# Business Insights

## Important Factors

Marital Status: Married ☆

Device: IOS ☆

Location: East Coast and West Coast ☆

Age

## Ordinary Factors

Category

Gender

## Donators' Portrait

Married people

Iphone/ Mac/ Ipad users

Living in the East and West Coast

Young people aged 18-24



## Trending Projects

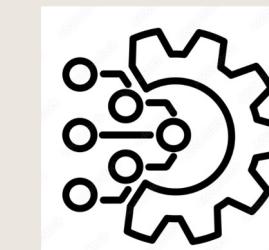
Games ☆

Sports ☆

Environment

Technology

Fashion



# Summary Recommendation Lesson Learned

## ✓ Summary

- Our assumptions about important attributes align with the results delivered by the models.
- Married young apple user are our current target donators

## ✓ Recommendation

- We need to work on attracting various users with different characteristics
- We could design user surveys to get more user related information for further analysis and working on creating features attracting more users

## ✓ Lesson Learned

- WebStorm and canva are powerful tools for visualization
- Balsamiq is useful for UI/UX designing
- Linear Regression tend to work better in predicting numeric response

# Web Page Demo

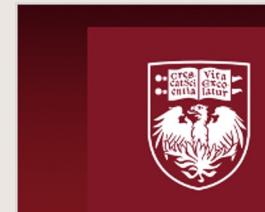
The screenshot displays a professional web page for a company named 'BootLoader'. The top navigation bar includes icons for a magnifying glass, a telephone, and an envelope, followed by the phone number '987-654-3210' and email address 'bootloader@bootloader.com'. A 'Donate now' button and a 'MENU' link are also present. The main content area features a dark blue background with white text. The text reads 'BootLoader' at the top left, followed by a large, bold, white slogan: 'Innovation Found a New World'. At the bottom left of this section is a white rectangular button with the text 'Contact Us'. To the right of this text area is a large, stylized yellow arrow pointing towards a photograph. The photograph shows three women in a modern office setting, focused on their work at a desk with laptops. The overall design is clean and modern, using a combination of dark and light colors.

Link: file:///Users/wenzhang/Desktop/DV\_FinalProject/BootLoader\_WebPage/index.html

Thank you for  
Listening



# Appendix Poster



## BootLoader Donation Prediction and Analysis

Jinwen Nan, Jing Tang, Wen Zhang

MSCA 32007 Data Visualization Techniques, Master of Science in Analytics, The University of Chicago



### Executive Summary

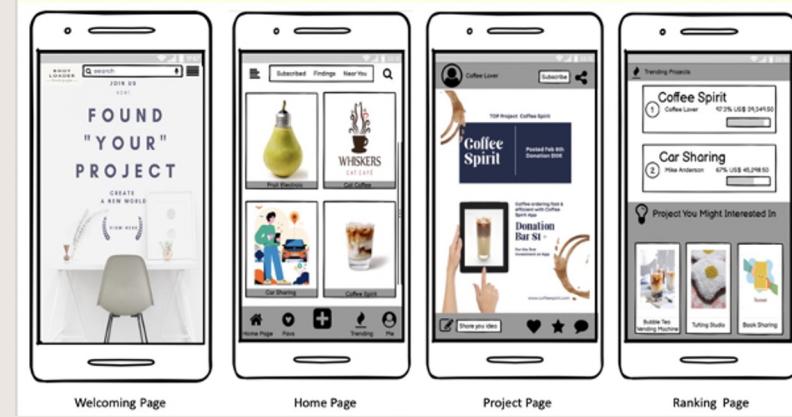
BootLoader is a crowdfunding mobile app. BootLoader helps people crowdfund their creative projects. Anyone with an idea, dream, and 2-minute video can post their project on BootLoader. Others then donate money to the project to help bring it to fruition. We were able to track user's interactions with the mobile app and have been collecting analytics data on how the users view and fund projects.

Our purpose is to help determine what segment of users would be interested in specific project types and has the potential to fund the projects. We aim to perform analysis on user's preference on projects, therefore the software can precisely deliver notification to segments of users, based on specific attributes and leading to more funds. We also want to initiate a model to predict the amount of donation from the users.

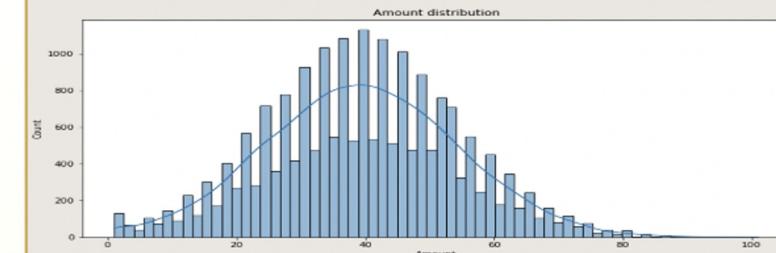
### Data Overview

The data is from Localytics Data Visualization Challenge of a fictional, containing 20658 entities with 13 variables including category, client\_time, amount, session\_id, age range, gender, location, city, state, latitude, longitude, marital\_status and device. There is no missing data. The target response variable is amount.

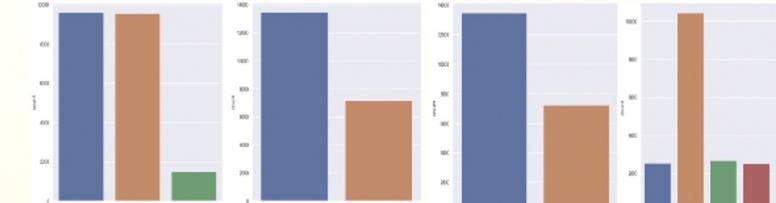
### UI/UX Mockup



### Exploratory Data Analysis



The amount of donation, which is the response variable are almost normally distributed.



The amount of female and male donates are almost the same. Married users tend to donate more frequently. IOS user tend to donate more. Young generations usually donate more while other age groups donate about the same.

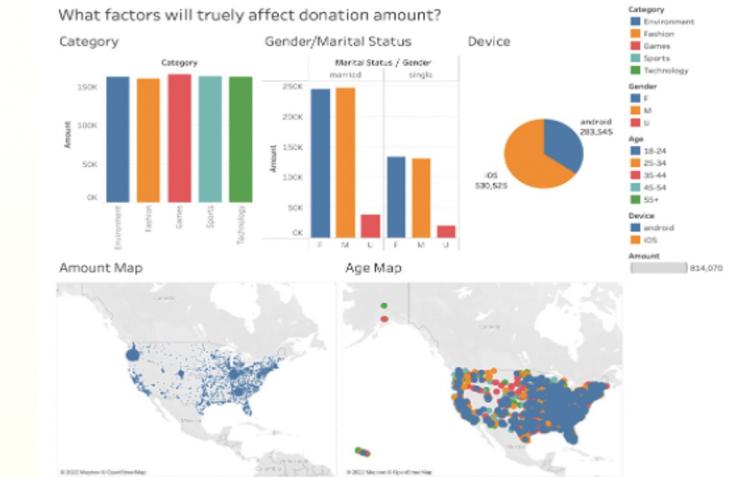


The map illustrates the geographic distribution of donators.

### Modeling Results

Model	Test RMSE	CV RMSE	Train RMSE
Linear Regression	14.775	14.995	14.942
Decision Tree	14.859	15.051	14.87
Random Forest	14.855	15.015	14.87

### Dashboards and Visualizations



Games, Sports, Environment, Technology and Fashion are all hot projects. There is no big difference among them. As for gender and marital status, gender does not affect donation greatly. Compared with single people, married people are more willing to make donations to projects. IOS users donate more. And the amount map and age map tell us that people living in the east region and the west coast are more interested in these projects. And younger people are more willing to try this way to support their favorite projects.

### Insights and Conclusion

After fitting the model, Married, Device, Location, Age are key factors. Category and Gender are Ordinary Factors. After analyzing the data, we can find out characters of donators: They are more likely to be married people, using iPhone/ Mac/ iPad, living in the East and West Coast and aged 18-24. Also, we find out trending project themes include Games, Sports, Environment, Technology, Fashion. Among those themes, donators are more willing to donate money to games and sports projects.

# Appendix

# Infographic



## BOOTLOADER DONATION PREDICTION AND ANALYSIS

JINGWEN NAN JING TANG WEN ZHANG

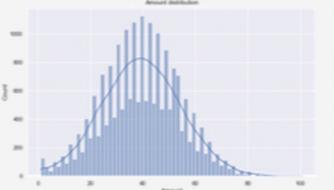
### STAGE 1- BUSINESS PROBLEM

BootLoader helps people crowdfund their creative projects. And we will analyze user characteristics on specific project types, perform analysis on user's preference on projects, for notification delivery and predict the donation amount.



### STAGE 2- EXPLORE DATA

We conducted EDA before fitting the model. We check the distribution of amount, the data shape of gender, marital status, age, and device usage. We also use map to show the distribution of donation amount.



### STAGE 3- DASHBOARDS AND VISUALIZATION

Our dashboard shows what factors will truly affect donation amount. We allow users to select category, gender, marital status, device and age. They can also view the distribution on the amount map easily and choose specific location on the map to see the detailed information.



### STAGE 4- CONCLUSION

Location, Age are key factors. Category and Gender are Ordinary Factors. After analyzing the data, we can find out characters of donators: They are more likely to be married people, using iPhone/ Mac/ iPad, living in the East and West Coast and aged 18-24. Also we find out hot project themes: Games, Sports, Environment, Technology, Fashion. Among them, donators are willing to donate money to games and sports projects.



#### REFERENCES

<https://github.com/localytics/data-viz-challenge>