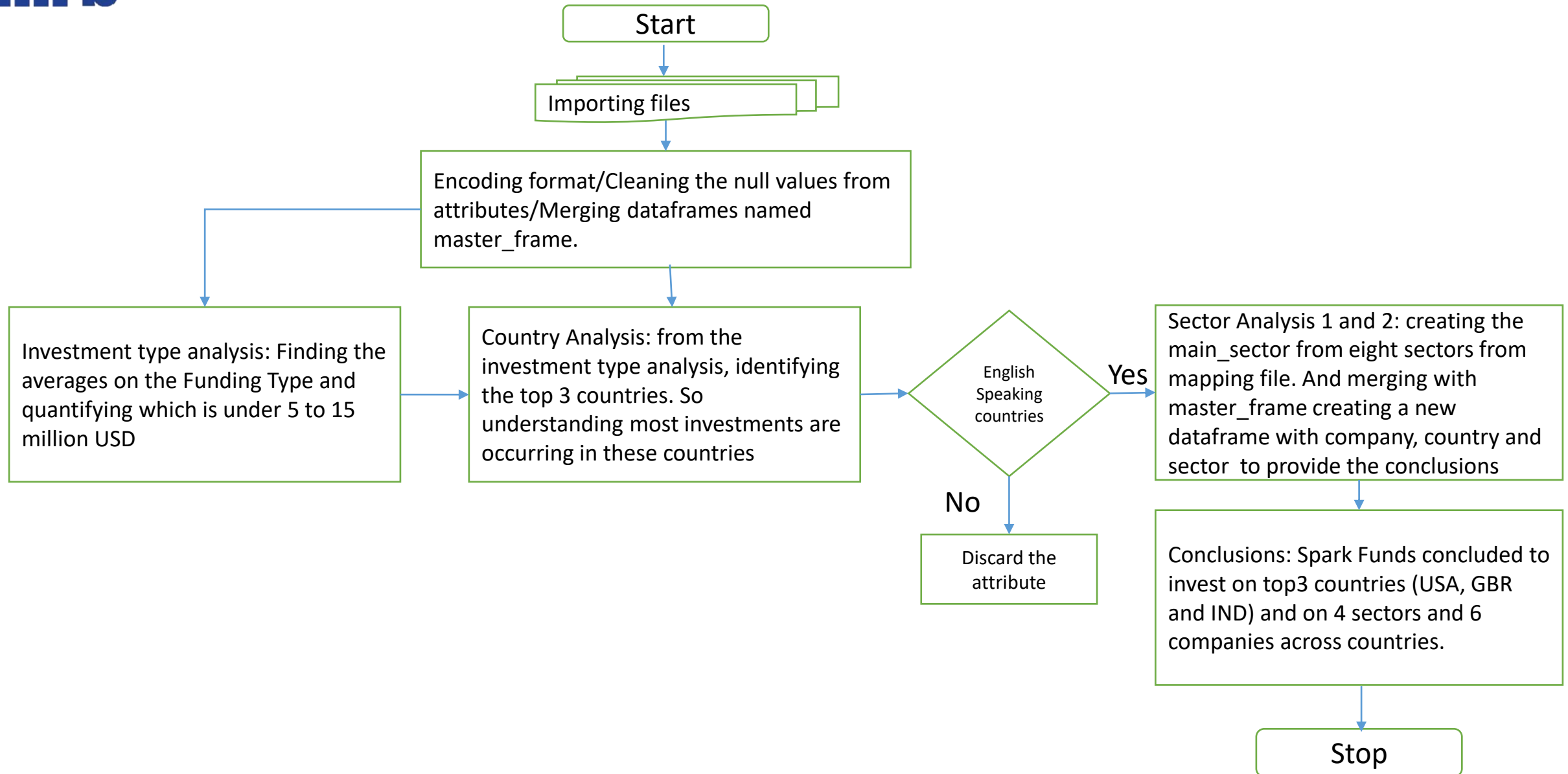# INVESTMENT ASSIGNMENT

# SUBMISSION

Name: Nagendra Avadanam

# Spark Funds – Investment Analysis

**Objective:** Spark Funds is an Asset Management company, and wants to invest in a few companies. And the company wants to analyse data to invest in English speaking countries only, to invest from a range of 5 to 15 million USD per round of investment.

**Strategy:** Spark Funds wants to invest where most other investors are investing. To play a safe game in market.

**Business Objective:** The objective is to identify the best sectors, countries, and a suitable investment type for making investments. The overall strategy is to invest where others are investing, implying that the 'best' sectors and countries are the ones 'where most investors are investing'.

# Problem solving methodology

```
                            Start
                              │
                              ▼
                        Importing files
                              │
                              ▼
          Encoding format/Cleaning the null values from
          attributes/Merging dataframes named
          master_frame.
```

**Investment type analysis:** Finding the averages on the Funding Type and quantifying which is under 5 to 15 million USD

**Country Analysis:** from the investment type analysis, identifying the top 3 countries. So understanding most investments are occurring in these countries

English Speaking countries

**Yes**

**No**

Discard the attribute

**Sector Analysis 1 and 2:** creating the main_sector from eight sectors from mapping file. And merging with master_frame creating a new dataframe with company, country and sector to provide the conclusions

**Conclusions:** Spark Funds concluded to invest on top3 countries (USA, GBR and IND) and on 4 sectors and 6 companies across countries.

Stop

# Analysis:

Data has been retrieved from crunchbase.com, and it comprises of three files.

Companies.csv
Rounds2.csv
Mapping.csv

Companies.csv – Companies file contains lot of attributes, but as per requirement, we quantified on two attributes company Id (permalink) and country_code. Other attributes are dropped for convenience.

Rounds2.csv – Rounds2 file contains lot of attributes, but as per requirement, we quantify on three attributes company Id (company_permalink), funded_round_type and raised_amount_usd. Other attributes are dropped for convenience

Mapping.csv – Mapping contains the sector information, so we created two attributes with other attributes (using pandas melt function).

# Funded Round Type Analysis
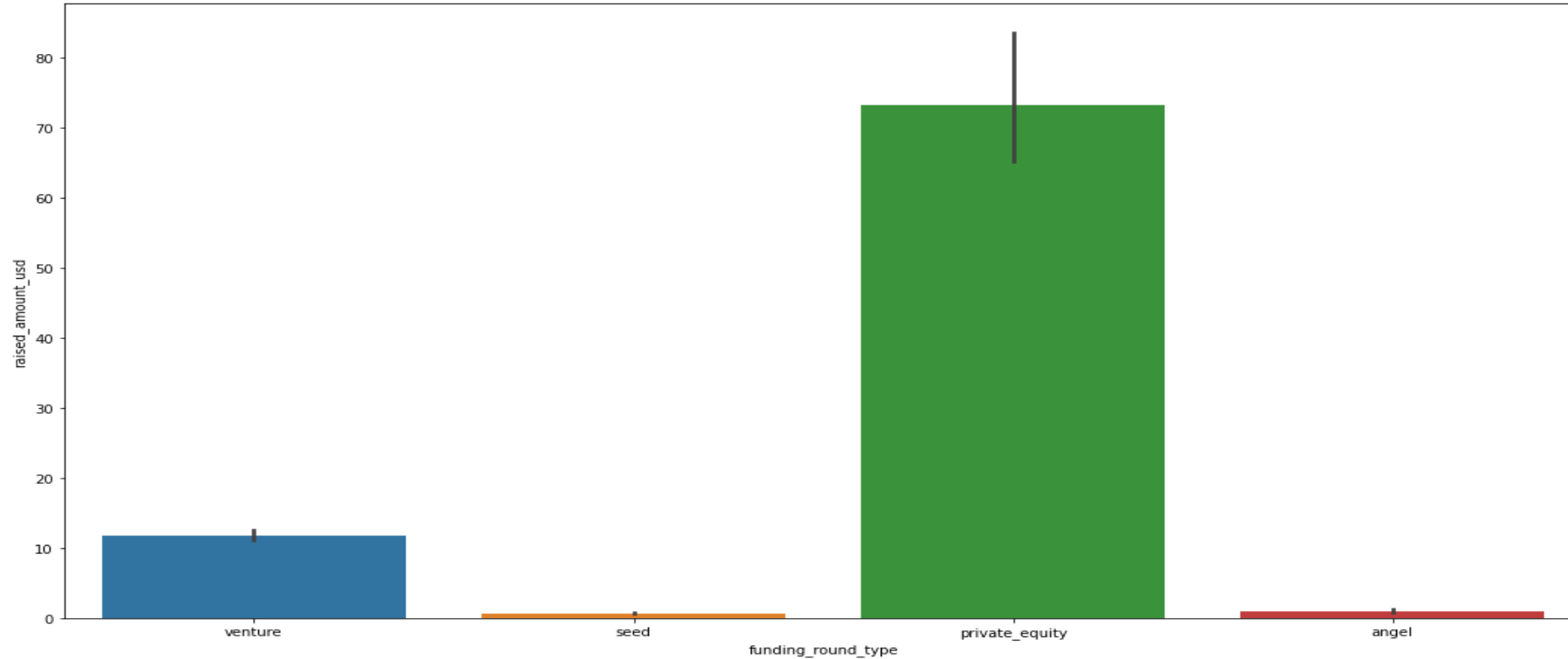


Analysis on funding_round_types:

→ Out of 14 fund types, Spark funds investment is to observe on four fund types ('angel', 'private_equity', 'seed' and 'venture'

→ As per the criteria, investment must be from 5 to 15 million USD. So as per the above graphical bar plot "venture" falls under out criteria with 11.7 Million USD.
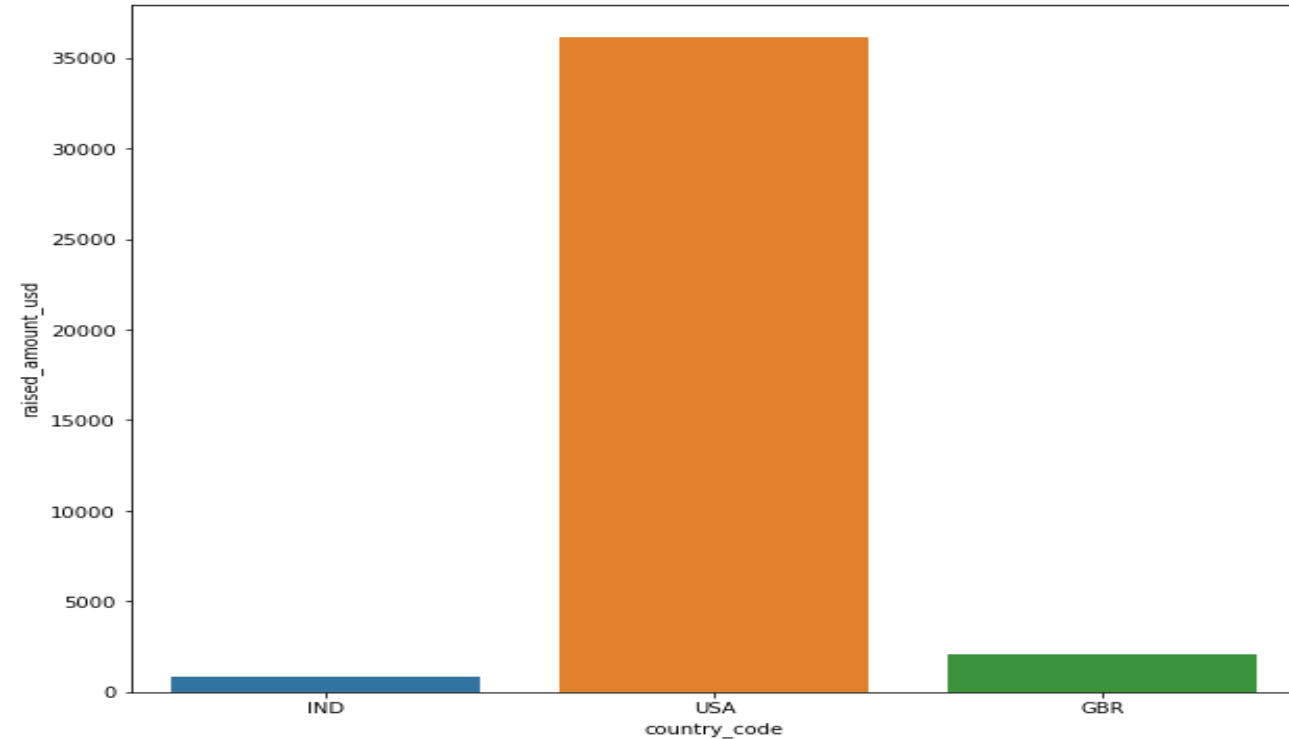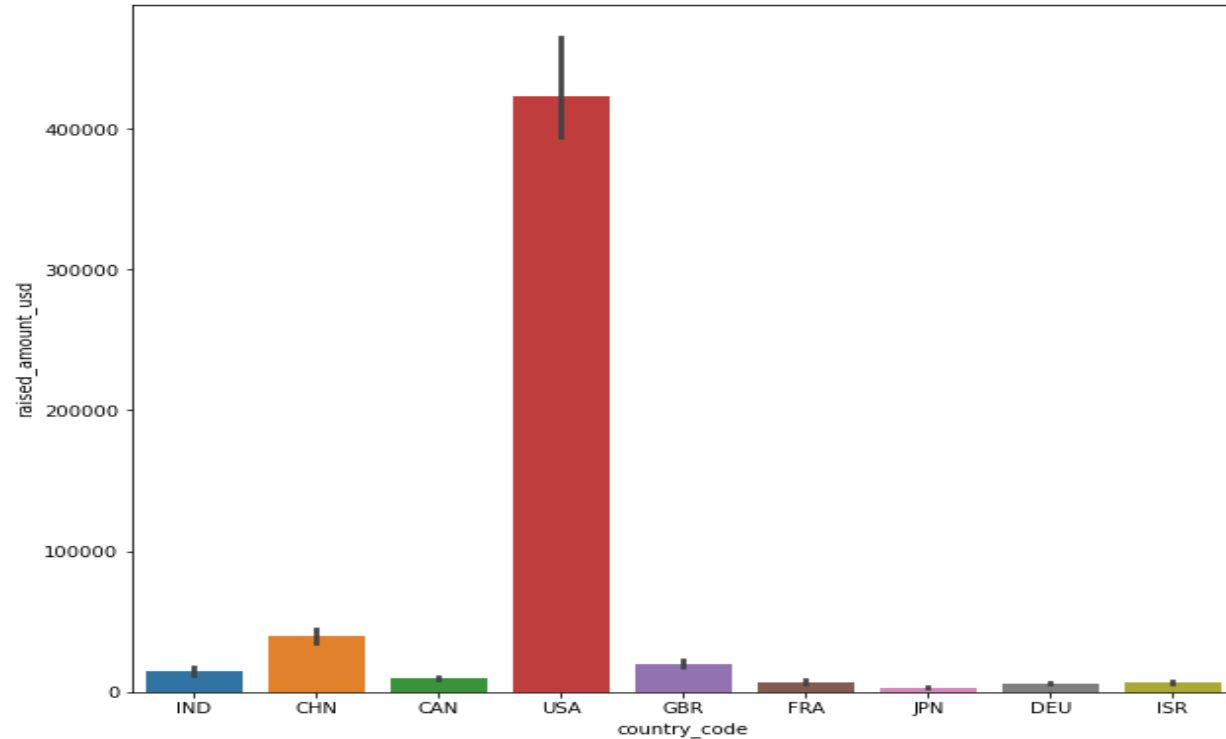
Country-wise Analysis:

→ Calculated the average of raised_amound_usd attribute on country_code, so we got nine countries from the left plot.
→ From the 9 countries, identified three countries (USA, GBR and IND) with highest speaking languages and also to understand the most invested, and where other investors are invested.
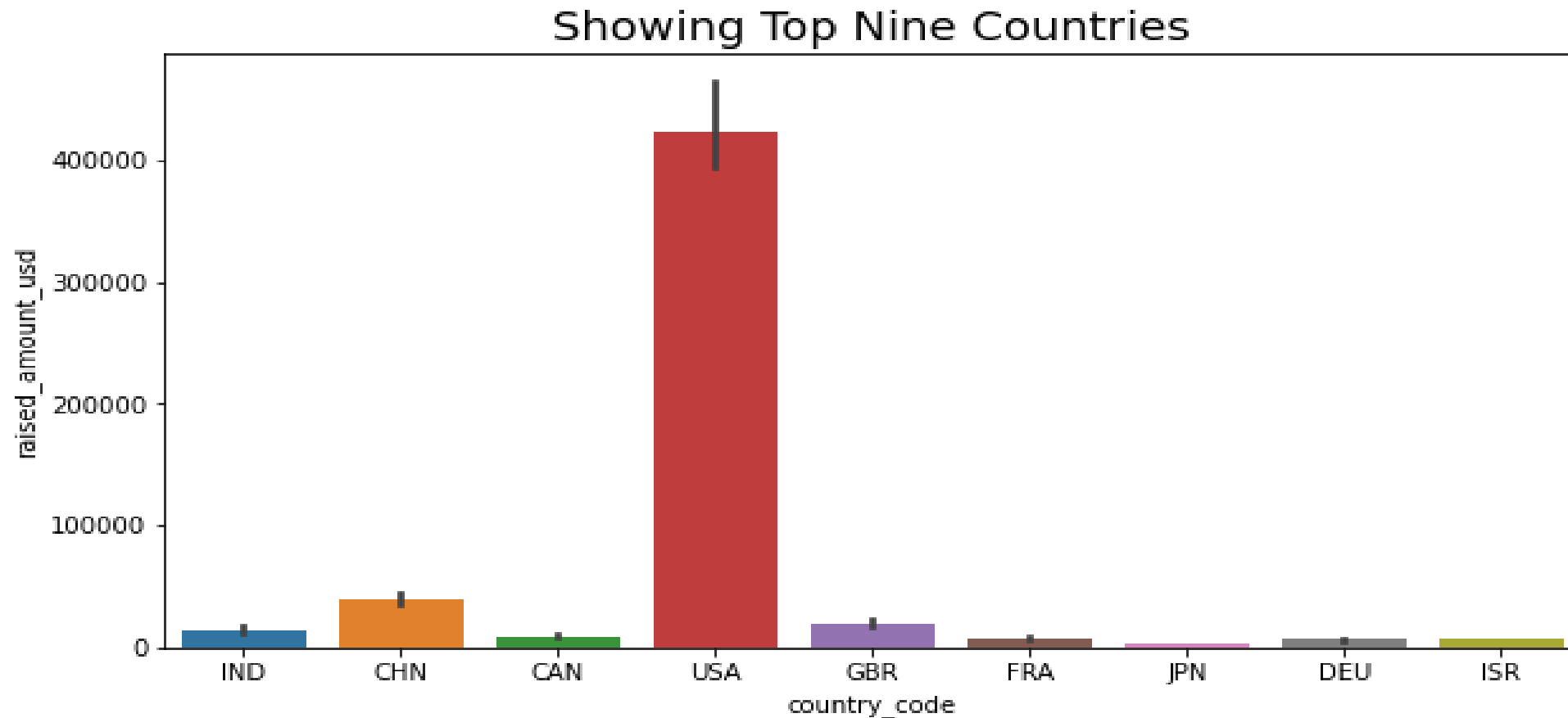
Results:
A plot showing the representative amount of investment in each funding type. This chart should make it clear that a certain funding type (FT) is best suited for Spark Funds.

Plot 1
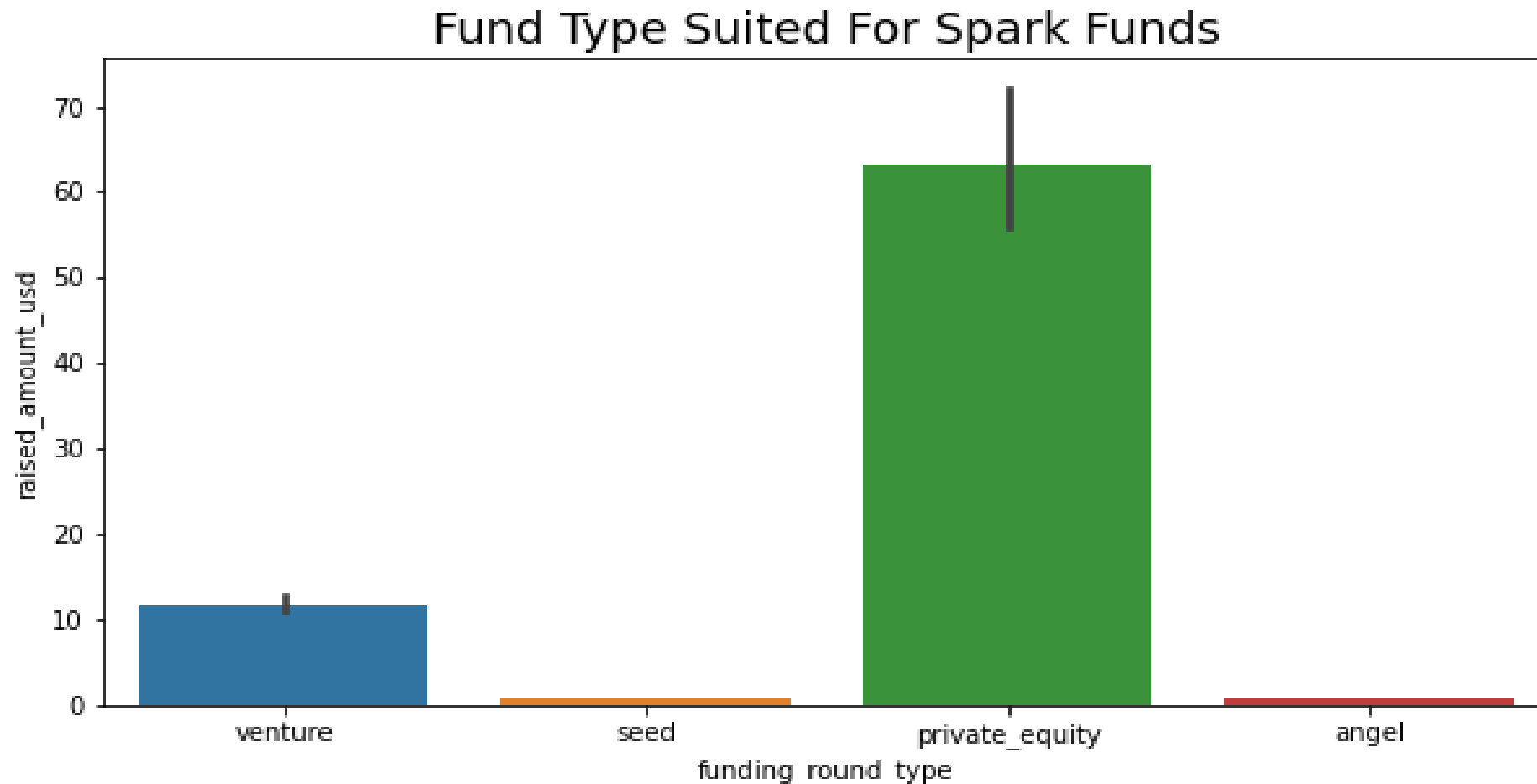
Results: A plot showing the top 9 countries against the total amount of investments of funding type FT. This should make the top 3 countries (Country 1, Country 2, and Country 3) very clear.

Plot 2



Showing Top Nine Countries

Results: A plot showing the number of investments in the top 3 sectors of the top 3 countries on one chart (for the chosen investment type FT). This plot should clearly display the top 3 sectors each in Country 1, Country 2, and Country 3.

Plot 3



Top Three Countries Investments In Top Three Sectors
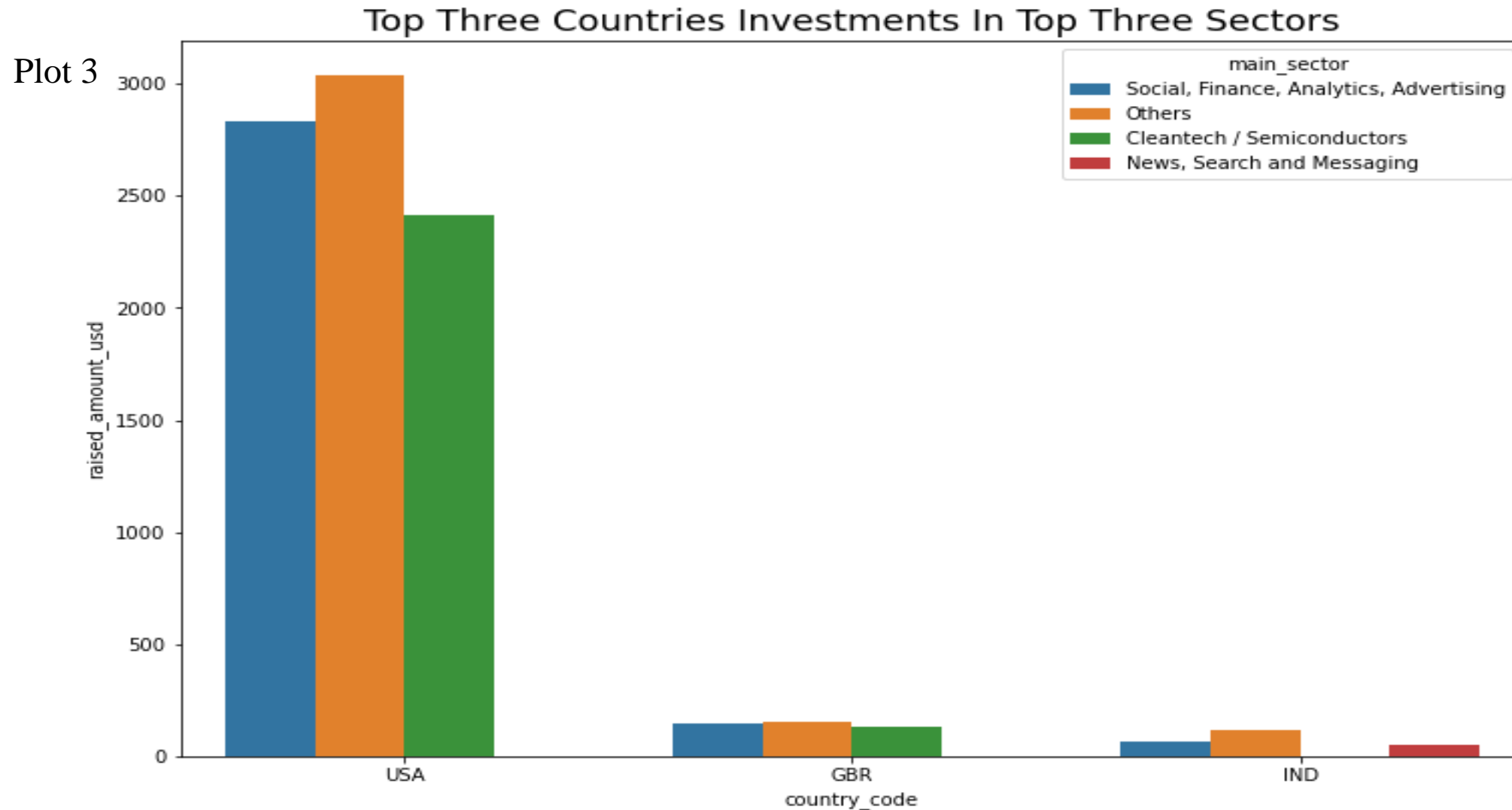
# Conclusions

| | | Sector-wise Investment Analysis | | |
|---|---|---|---|---|
| Sl.no | Questions | C1 (USA) | C2 (GBR) | C3 (IND) |
| 1 | Total number of Investments (count) | 12487 | 654 | 340 |
| 5 | Total amount of investment (USD) | 111255.58 | 5649 | 3038 |
| 3 | Top Sector name (no. of investment-wise) | Others | Others | Others |
| 4 | Second Sector name (no. of investment-wise) | Social, Finance, Analytics, Advertising | Social, Finance, Analytics, Advertising | Social, Finance, Analytics, Advertising |
| 5 | Third Sector name (no. of investment-wise) | Cleantech / Semiconductors | Cleantech / Semiconductors | News, Search and Messaging |
| 6 | Number of investments in top sector (3) | 3040 | 153 | 114 |
| 7 | Number of investments in second sector (4) | 2829 | 143 | 64 |
| 8 | Number of investments in third sector (5) | 2411 | 131 | 53 |
| 9 | For point 3 (top sector count-wise), which company received the highest investment? | /organization/virtustream | /organization/electric-cloud | /organization/firstcry-com |
| 10 | For point 4 (second best sector count-wise), which company received the highest investment? | /organization/choicestream | /organization/celltick-technologies | /organization/manthan-systems |

Conclusions Drawn based on above analysis:

→ For USA region, priority of sectors is Others with the next to Social, Finance, Analytics, Advertising and Cleantech/Semiconductors for company on top /organization/Virtustream with next /organization/choicestream.

→ For GBR region, priority of sectors is Others with the next to Social, Finance, Analytics, Advertising and Cleantech/Semiconductors for company on top /organization/electric-cloud with next /organization/celltick-technologies.

→ For USA region, priority of sectors is Others with the next to Social, Finance, Analytics, Advertising and News, Search and Messaging for company on top /organization/firstcry-com with next /organization/manthan-systems.