INVESTMENT ASSIGNMENT

SUBMISSION

Name: Sivaramakrishnan Swaminathan

Strategy and Business Objective

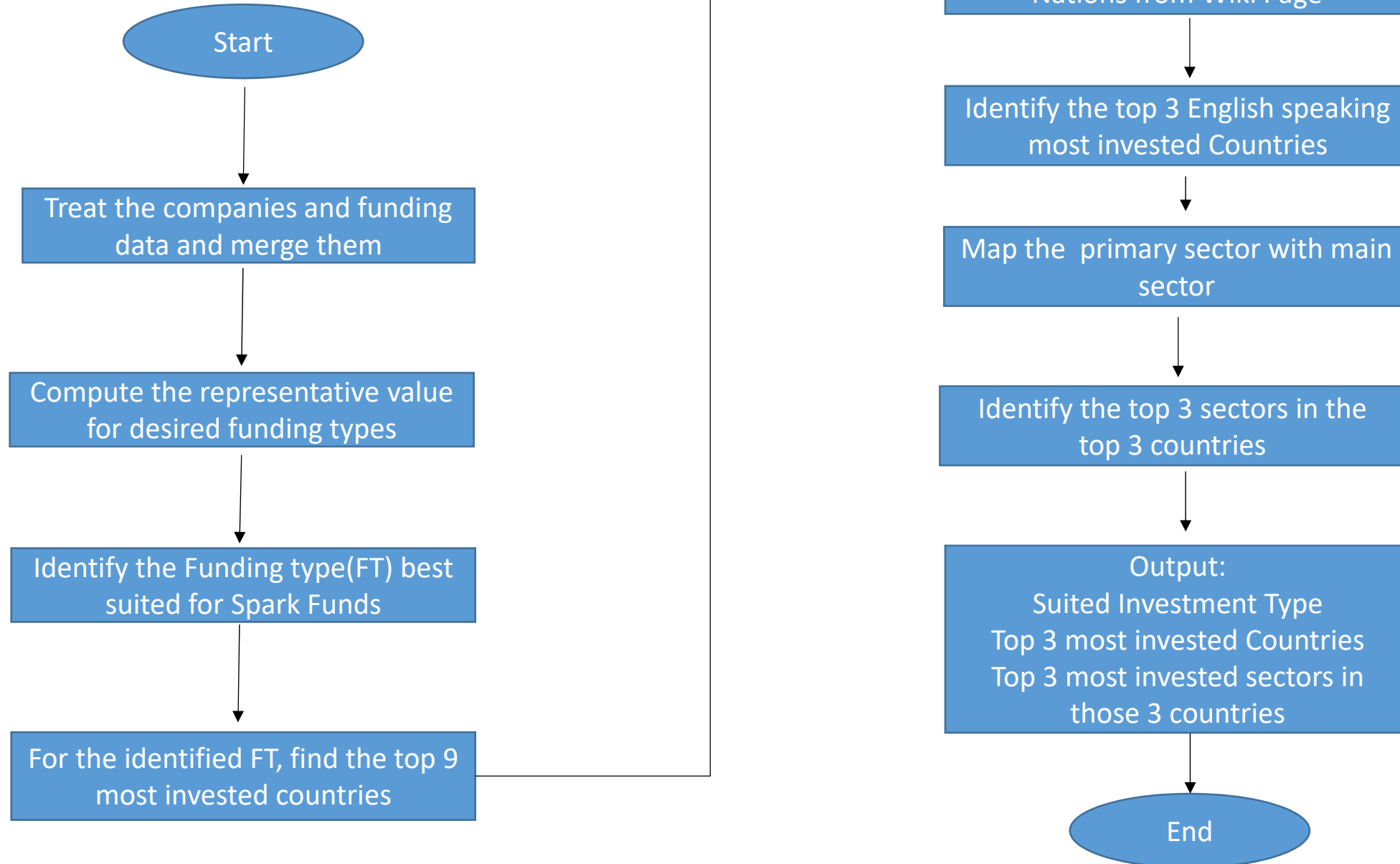| Strategy	Objective
Invest where most others are investing	Identify the best sectors, countries, and a suitable investment type for making investments for Spark Funds

Approach Used

Start

Treat the companies and funding data and merge them

Compute the representative value for desired funding types

Identify the Funding type(FT) best suited for Spark Funds

For the identified FT, find the top 9 most invested countries

Identify the English Speaking Nations from Wiki Page

Identify the top 3 English speaking most invested Countries

Map the primary sector with main sector

Identify the top 3 sectors in the top 3 countries

Output:
Suited Investment Type
Top 3 most invested Countries
Top 3 most invested sectors in those 3 countries

End

Data Analysis

- Funding data and companies data are loaded separately

- Both the data frames are treated for missing values and Outliers

- Companies data is left merged with funding data and treated again for missing values

- Most representative values have been chosen for the four desired funding types, Seed, Angel, Venture and Private Equity

- From the Mean values calculated, most suitable investment type for Spark Funds would be **"Venture Type"**

- For the chosen Fund Type, "Venture Funding Type", top countries have been identified based on total amount invested

- English speaking countries have been discovered from the Wiki source

- Top 3 English speaking countries identified based on the amount of Investment
    1. **United States of America (USA)**
    2. **Great Britain (GBR)**
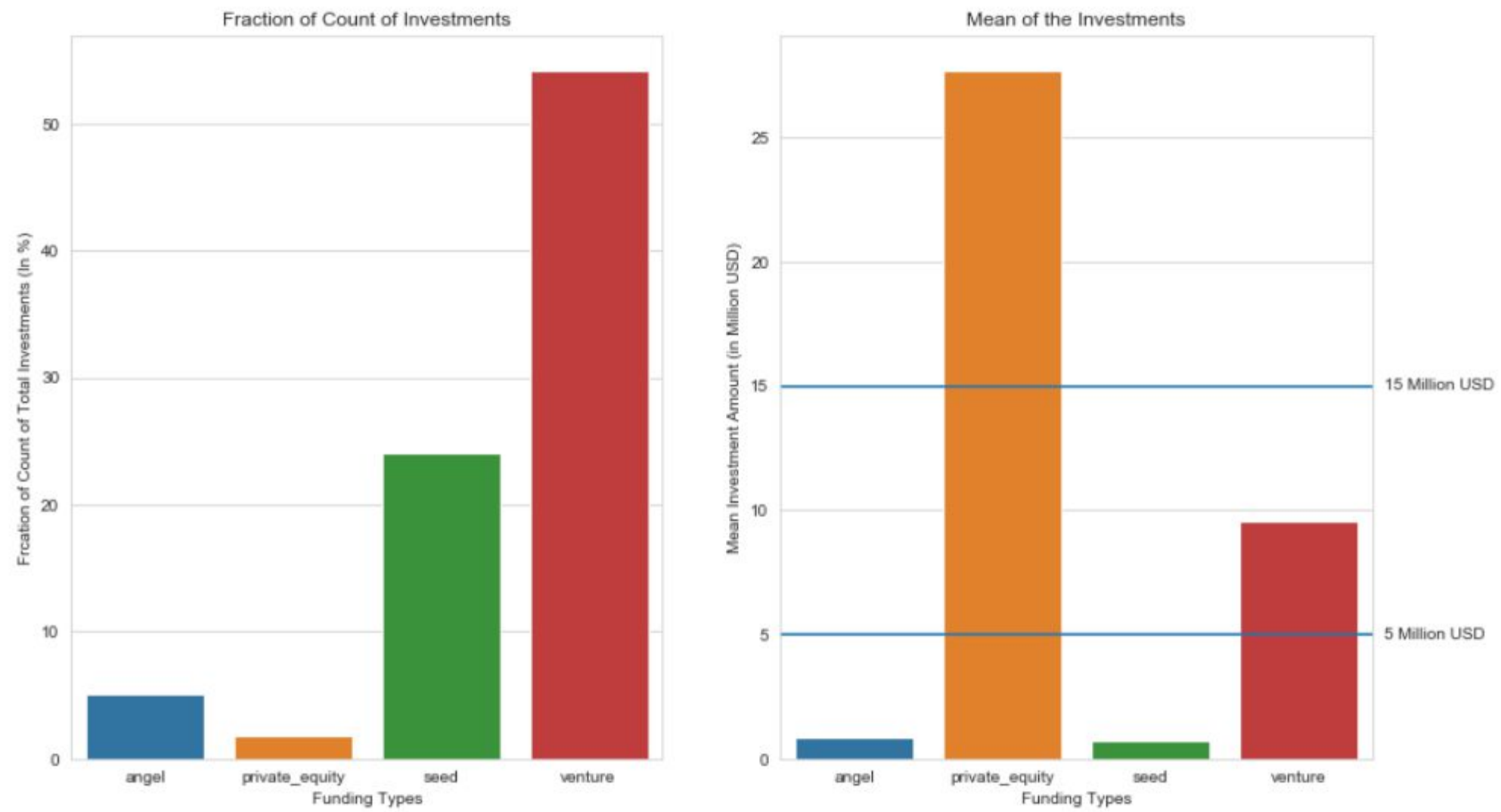   3. **India (IND)**

Data Analysis (Cont)

- From sector input data, each primary sector is mapped to a main sector

- This data is merged with master frame to have a single view of the data

- For each of the top 3 English speaking countries identified, below steps are performed
  - Data is grouped by main sector, top 3 sectors identified by count of investments and by amount of investment
  - Total amount invested across main sectors calculated
  - Most invested company in top 2 sectors identified by amount of Investment

- Following graphs are plotted with the data analyzed so far
  - Fraction of count of total investments and the mean investment amount for the desired four funding types
  - Top 9 countries based on the amount of investment
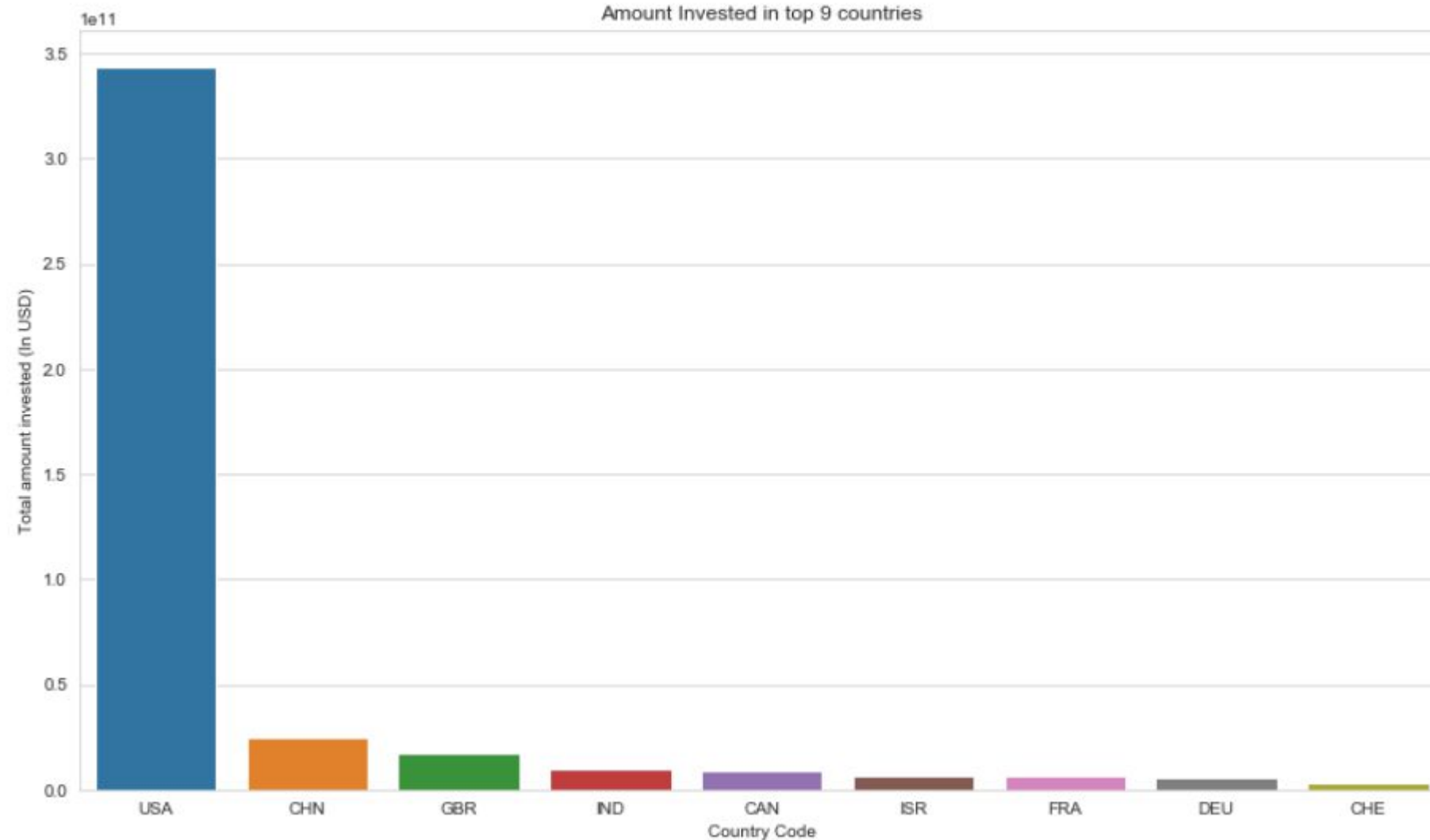 - Top 3 sectors in the top 3 English speaking countries for investment proposal

Results

Sector-wise Investment Analysis

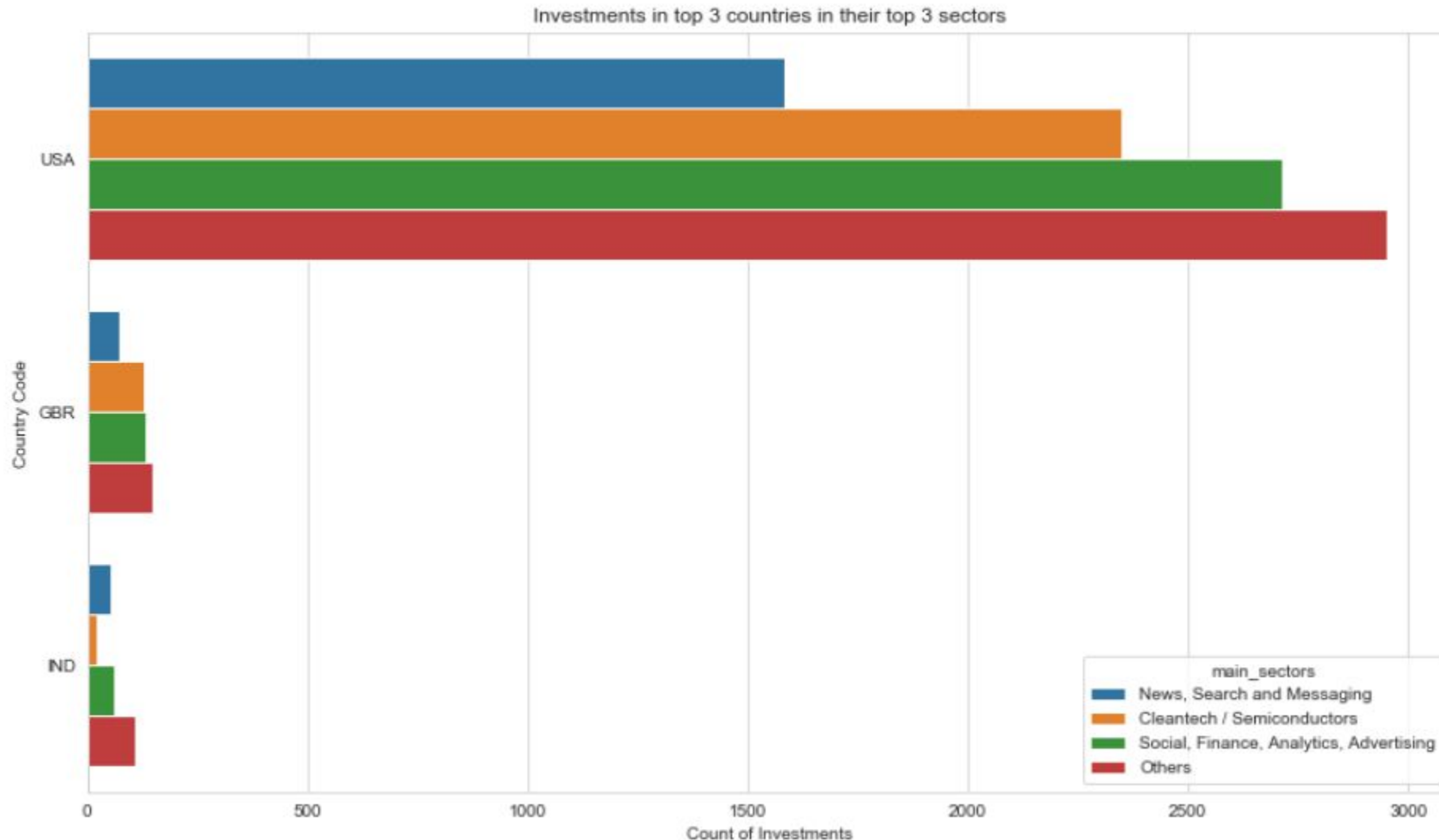| Sl.no	Questions	C1	C2	C3
1	Total number of Investments (count)	12063	621	328
2	Total amount of investment (USD)	1.07757E+11	5379078691	2949543602
3	Top Sector name (no. of investment-wise)	Others	Others	Others
4	Second Sector name (no. of investment-wise)	Social, Finance, Analytics, Advertising	Social, 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)	2950	147	110
7	Number of investments in second sector (4)	2714	133	60
8	Number of investments in third sector (5)	2350	130	52
9	For point 3 (top sector count-wise), which company received the highest investment?	Virtustream	Electric Cloud	FirstCry.com
10	For point 4 (second best sector count-wise), which company received the highest investment?	SST Inc. (Formerly ShotSpotter)	Celltick Technologies	Manthan Systems

Plots of Fraction of Count of Total Investment and Average Amount of Investment

Plot of Total Amount invested across countries

Count of investments in top 3 sectors in top 3 countries

Investments in top 3 countries in their top 3 sectors

Investment Proposal

- Plot 1 clearly defines the best suited investment type for Spark Funds, Venture Type

- Plot 2 shows the top countries suitable for Investment, USA, GBR and India

- Plot 3 shows the sectors best suited for investments

__Final Proposal for Investment for Spark funds based on the strategy would be the following__

1. *Best Investment type – **Venture***

2. *Best Countries to invest – **USA, GBR and India***

3. *Best Sectors to invest*
   - ***Others***
   - ***Social, Finance, Analytics, Advertising***
   - ***Cleantech / Semiconductors***
   - ***News, Search and Messaging***