INVESTMENT CASE STUDY

SUBMISSION

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Spark Funds Investment Problem Analysis

Spark Funds is an asset management company looking forward to making investment in a few companies. The company wants to make the decision based on analysis of global trends.

Constraints:

- Per round investment between 5 to 15 million USD.
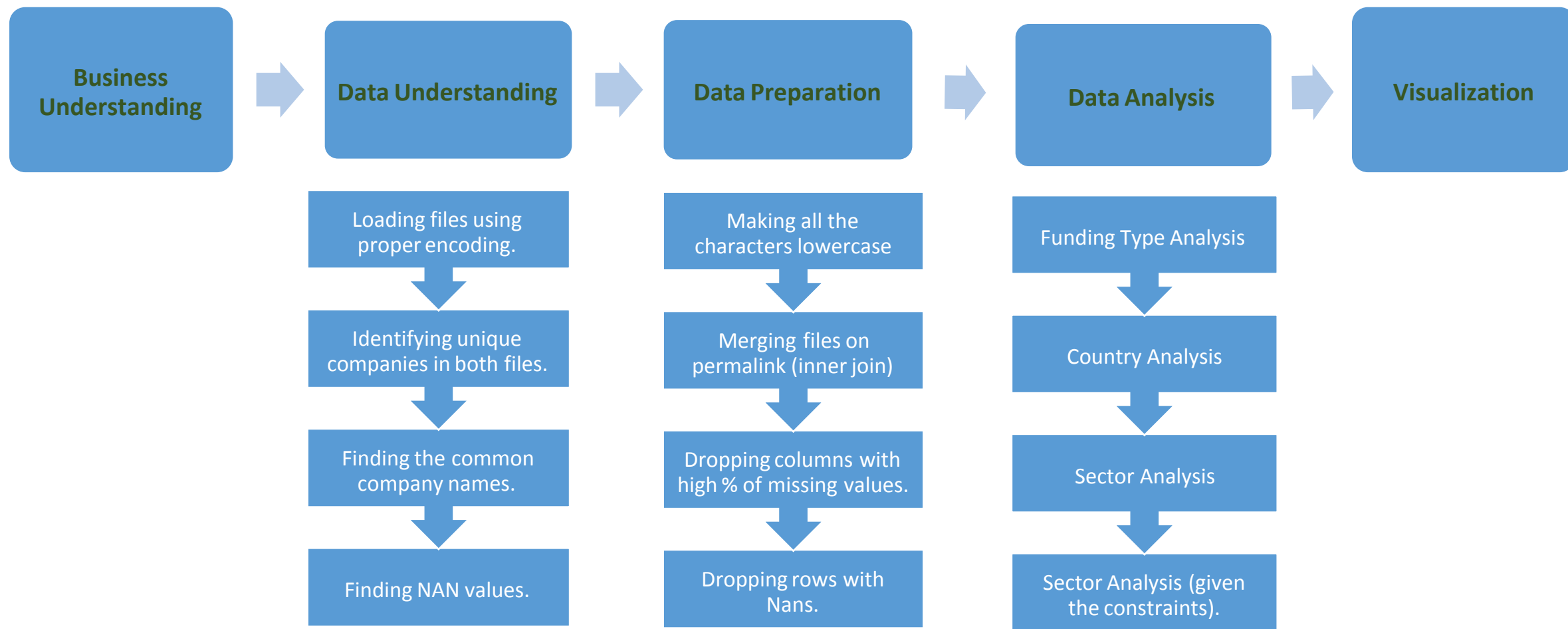- Investment in English-speaking countries only.

Business Objective :

To identify the best sectors, countries, and a suitable investment type for making investments.

Goals of Data Analysis:

- Investment type analysis: Comparing the typical investment amounts in the venture, seed, angel, private equity etc.
- Country analysis: Identifying the countries which have been the most heavily invested in the past.
- Sector analysis: Understanding the distribution of investments across the eight main sectors.

Process Pipeline

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┌──────────────┐    ┌──────────────┐    ┌──────────────┐    ┌──────────────┐    ┌──────────────┐
│   Business   │ ▸  │     Data     │ ▸  │     Data     │ ▸  │     Data     │ ▸  │Visualization │
│Understanding │    │Understanding │    │ Preparation  │    │   Analysis   │    │              │
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Data Understanding	Data Preparation	Data Analysis
Loading files using proper encoding.	Making all the characters lowercase	Funding Type Analysis
Identifying unique companies in both files.	Merging files on permalink (inner join)	Country Analysis
Finding the common company names.	Dropping columns with high % of missing values.	Sector Analysis
Finding NAN values.	Dropping rows with Nans.	Sector Analysis (given the constraints).

Funding Type Analysis

Objective:

To choose one of these four investment types for each potential investment they will make.

Investment Types: Venture, Angel, Seed, Private Equity

Method:

Step 1: Calculate the average investment amount for each of the four funding types.

Result:

Average funding amount of venture type	11748950.00
Average funding amount of angel type	958694.50
Average funding amount of seed type	719818.00
Average funding amount of private equity type	73308590.00

Step 2: Considering that Spark Funds wants to invest between 5 to 15 million USD per investment round, selection of fund type with the highest average within the investment range.

Result:

Venture Investment.

Country Analysis

Objective:

To invest in countries with the highest amount of funding for the chosen investment type.

i.e. invest where most investments are occurring.

Method:

Step 1: For the chosen investment type, make a data frame named top9 with the top nine countries (based on the total investment amount each country has received)

Result: USA, CHN, GBR, IND, CAN, FRA, ISR, DEU, JPN

Step 2: Identify the top three English-speaking countries in the data frame top.

Result:

Top English speaking country	USA
Second English speaking country	GBR
Third English speaking country	IND

Sector Analysis

Objective:

To find out the most heavily invested main sectors in each of the three countries
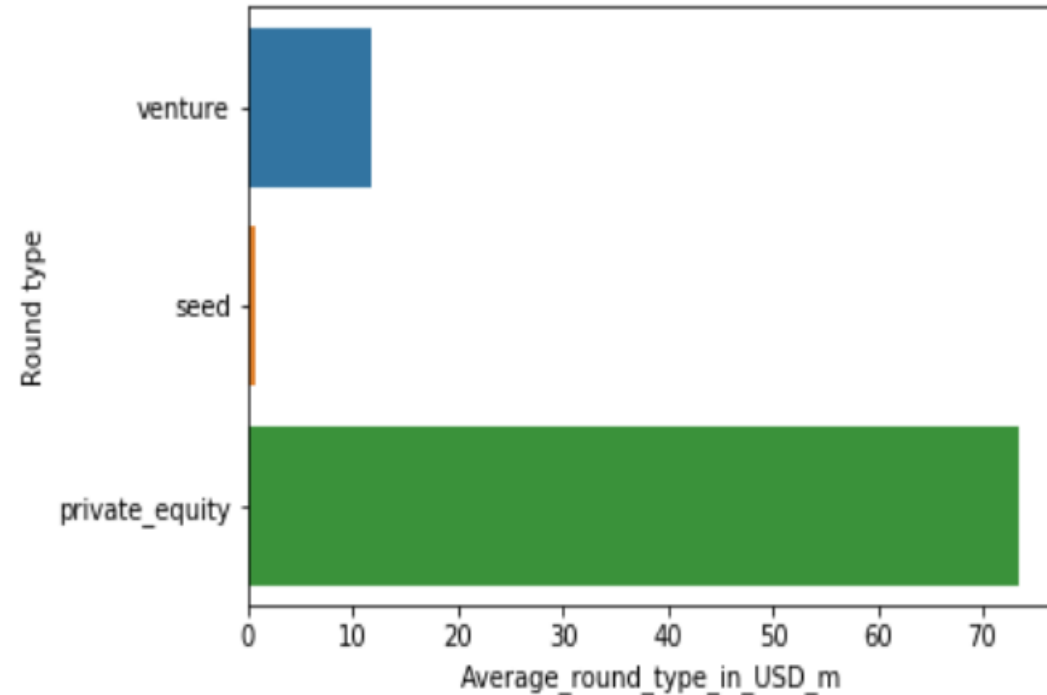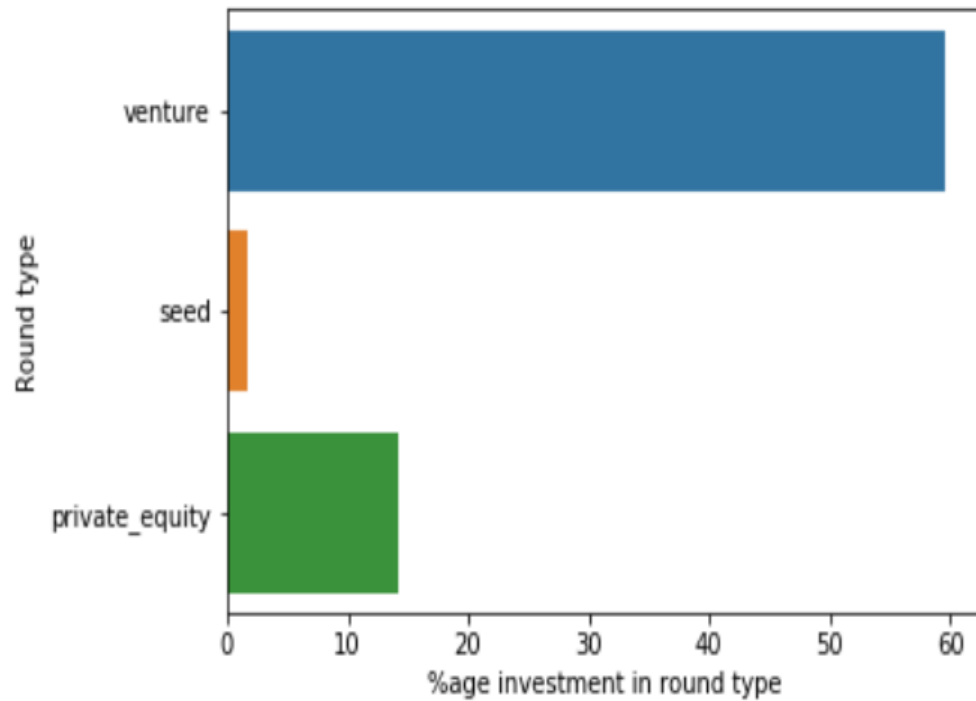
Method:

1. Short list the records that have investment amount between 5-15 Million USD.
2. Identify primary sector of each company and map it o 8 main sector categories.
   Dice the data frame for 3 countries and roll up the aggregate sum of investments for each of the 8 sectors.
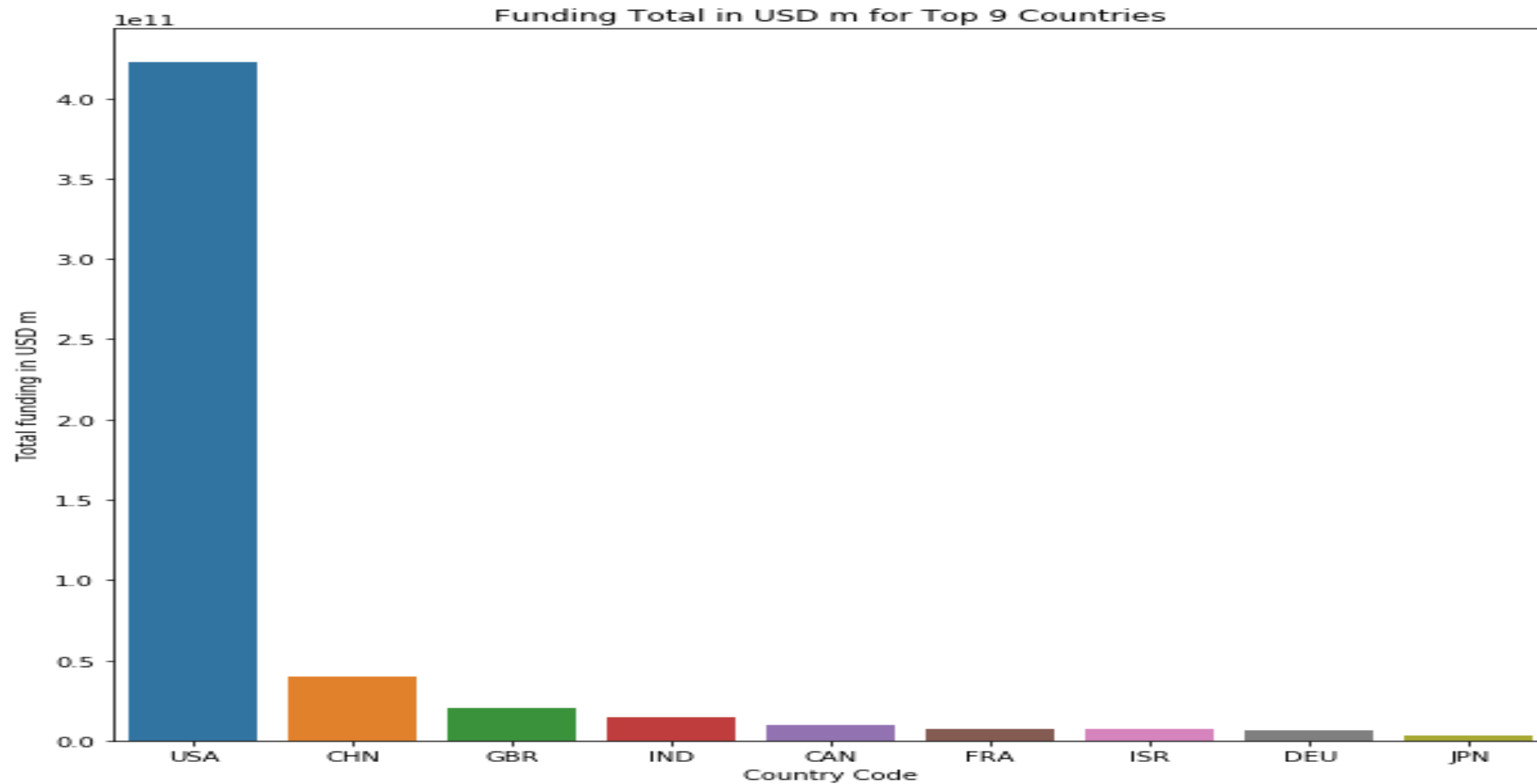
Result:

Questions	C1: USA	C2: GBR	C3: IND
Total number of Investments (count)	12063	621	328
Total amount of investment (USD)	107757097294.00	5379078691	2949543602
Top Sector name (no. of investment-wise)	Other	Other	Other
Second Sector name (no. of investment-wise)	Social, Finance, Analytics, Advertising	Social, Finance, Analytics, Advertising	Social, Finance, Analytics, Advertising
Third Sector name (no. of investment-wise)	Cleantech / Semiconductors	Cleantech / Semiconductors	News, search and messaging.

Results

Plot 1: Fraction of total investments (globally) in venture, seed, and private equity, and the average amount of investment in each funding type
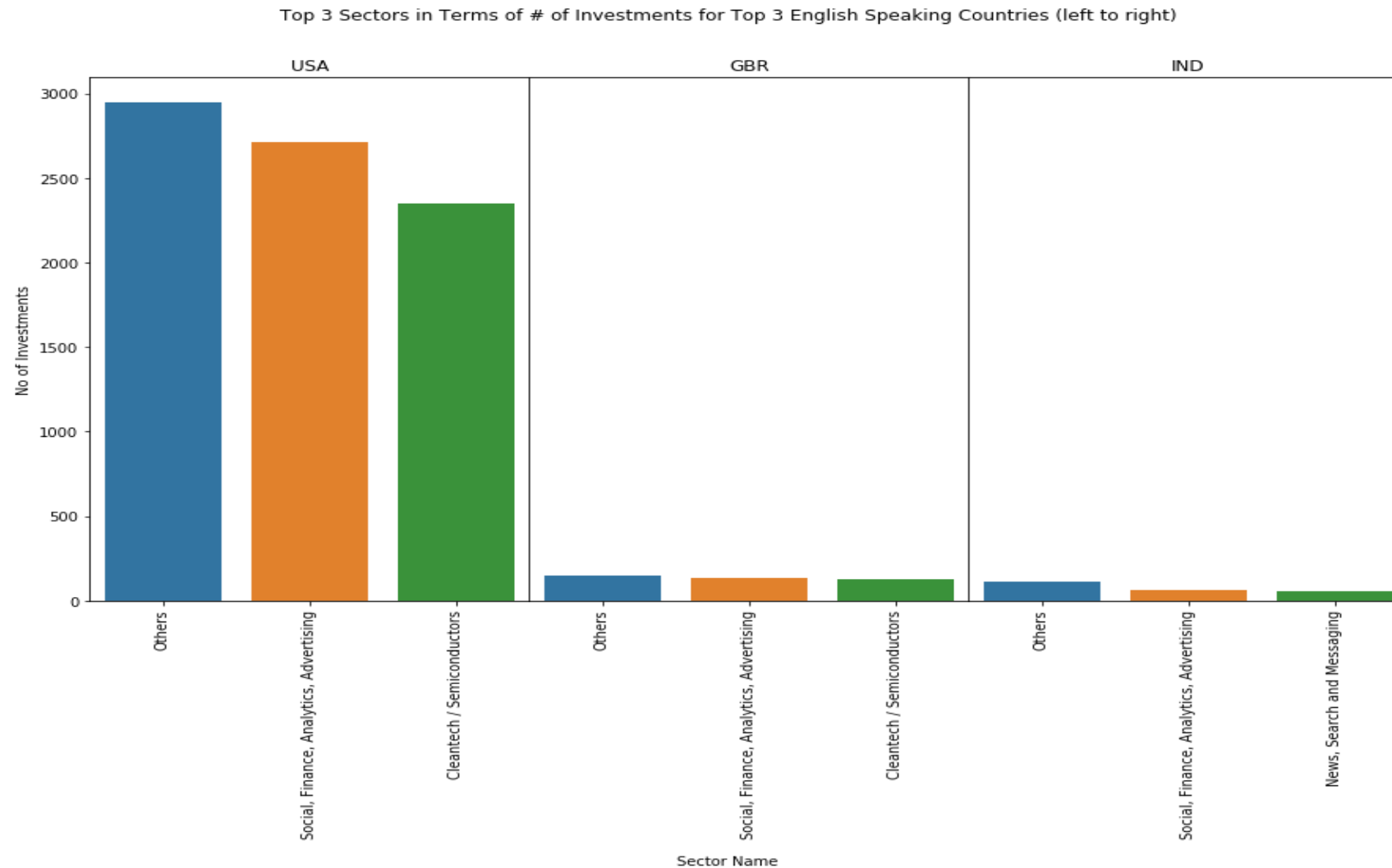
Plot 2: Top 9 countries against the total amount of investments of funding type FT.

Plot 3 : Number of investments in the top 3 sectors of the top 3 countries on one chart

Top 3 Sectors in Terms of # of Investments for Top 3 English Speaking Countries (left to right)

Conclusions

- From the Sparks Funds Investment Problem Analysis, following conclusions can be drawn.

1. The chief country to invest in is USA followed by Great Britain and India respectively.

2. From the analysis , the mode of investment best suited for Sparks fund, given their business objective and constraints, is Venture fund.

3. Top 2 main sectors which should be invested in are same for USA, Great Britain and India i.e. Others, Sociology finance Analytics and Advertising.

4. In each top most sector of a country, the company with the highest investment counts are Virtustream, Electric Cloud and Firstcry.com for USA, Great Britain and India respectively.