

# INVESTMENT ASSIGNMENT SUBMISSION

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# Investment Analysis

Analyzing for **Spark Funds**, on global trends in investments so that they can take the investment decisions effectively.

**The Two Minor Constraints of Spark Funds are,**

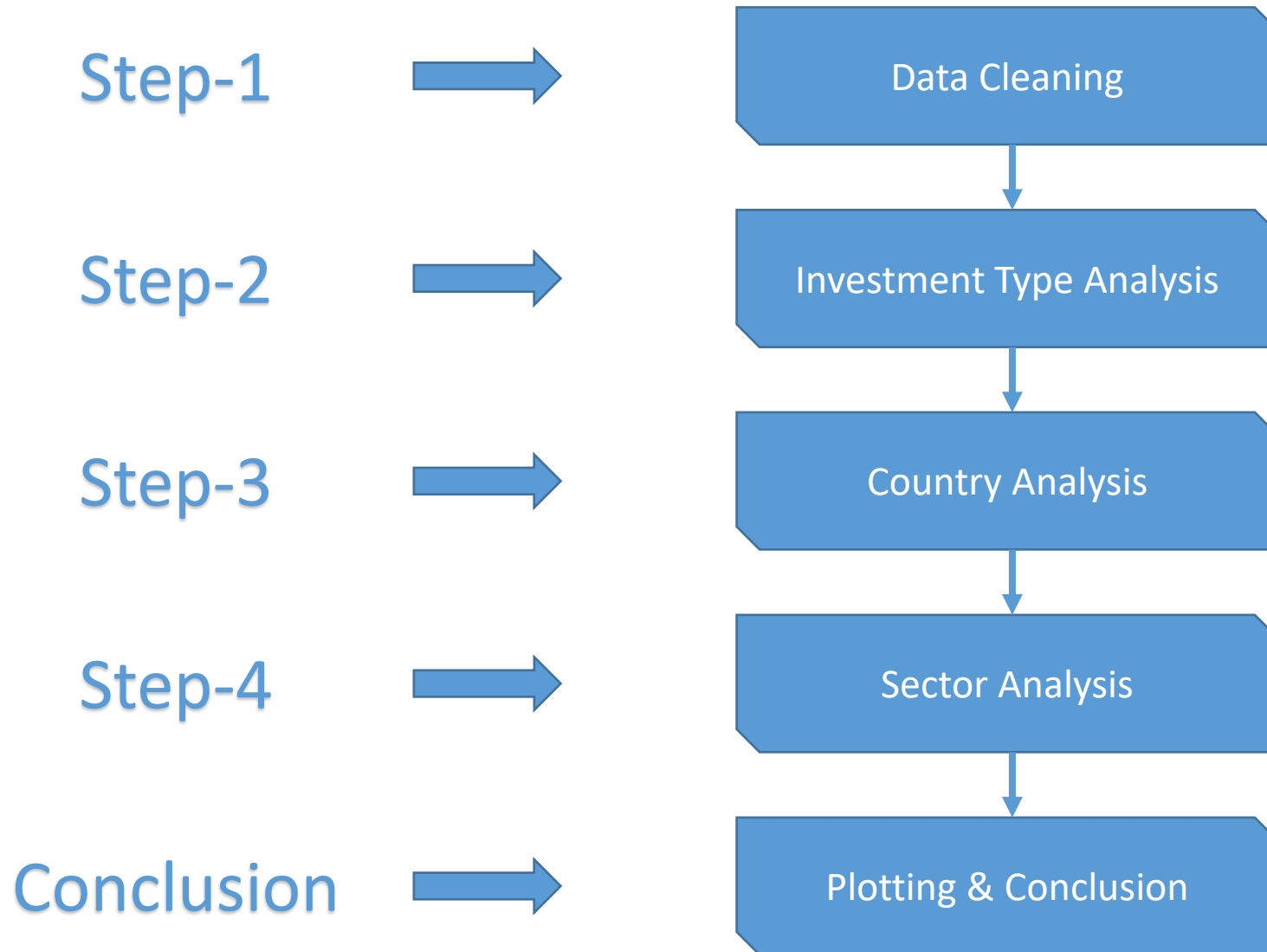
- Invest between 5 to 15 million USD per round of investment.
- Invest only in English-speaking countries because of the ease of communication with the companies it would invest in.

**Business objective:** The objective is to identify the best sectors, countries, and a suitable investment type for making investments.

**Our goal was divided into three sub goals:**

- 1) Investment type analysis,
- 2) Country analysis &
- 3) Sector analysis.

## Investment Analysis flow chart



## Explaining the flow of the analysis

### Data Cleaning:

- ❖ Loaded Companies and Rounds2 data.
- ❖ Removed unwanted and redundant columns.
- ❖ Removed Companies without Name.
- ❖ Haven't imputed or removed the nulls and not removed outliers for funding raised USD. Because, In our data analysis,
  - ✓ We are filtering data based on count of funding type
  - ✓ Filtering data by adding the investments across countries
  - ✓ Filtering data by counting investments across sectors.

So if we remove, we may lose some data and go into different funding type & if we impute it may create a biased one across country or sectors. So not doing either of it and proceeding as it is.

- ❖ With the above observation, Done the same for remaining columns as well.
- ❖ Merged both the Companies and Rounds2 Data Frame into one Master Data Frame.

## Investment Type Analysis:

- ❖ Filtering data into four funding types - Venture, Angel, Seed, and Private Equity.
- ❖ With the most representative value of the investment amount for each of the four funding types, choosing which funding type is best suited.
  - ✓ Chosen **Median** as our representative value.
  - ✓ Considering that Spark Funds wants to invest between **5 to 15 million USD**
  - ✓ By calculating Median of investment amount for each of them.
- ❖ **Venture** was decided as best suited funding type. Since it had 5M has Median and others had either <5M or >15M.

## Country Analysis:

- ❖ For the chosen investment type – **Venture**.
- ❖ Created a top9 data frame with Top Nine Countries based on the total investment amount each country has received.
- ❖ The top 9 countries are: **IND, USA, CHN, CAN, GBR, FRA, JPN, DEU, ISR**.
- ❖ Identified the top three English-speaking countries in the data frame top9 and they are: **USA, GBR, CAN**.

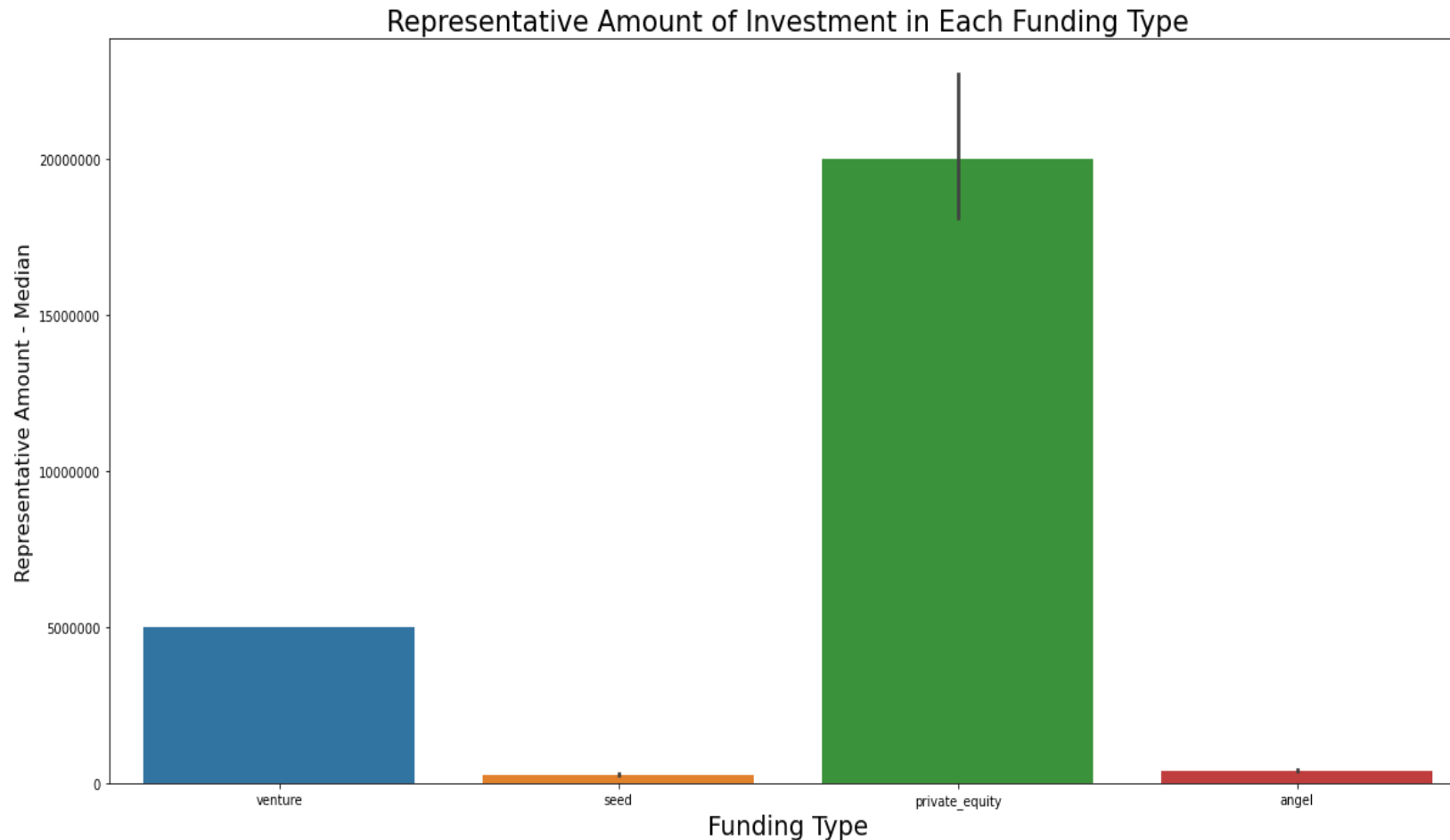
## Sector Analysis:

- ❖ Created three separate data frames D1, D2 and D3 for each of the three countries containing the observations of funding type FT falling within the 5-15 million USD range.
  - ❑ D1 - Country C1 - USA
  - ❑ D2 - Country C2 - GBR
  - ❑ D3 - Country C3 - CAN
  - ❑ FT - Funding Type – Venture
- ❖ Removed companies with raised amount USD = Zero. Since we are adding up raised amount USD to get the final desired result, zero values doesn't matter. So removed it.
- ❖ To finalize the top three sectors of each of the countries we should invest in.
  - ❑ Taken sector-wise count of investments and selected top 3 sectors for each countries.
  - ❑ We have come up with three sectors which are same for all the three countries, they are
    - ❑ Others
    - ❑ Cleantech / Semiconductors
    - ❑ Social, Finance, Analytics, Advertising

Given some plots to understand the idea of the analysis even more better...

Plot 1 – Showing the representative amount of investment in each funding type.

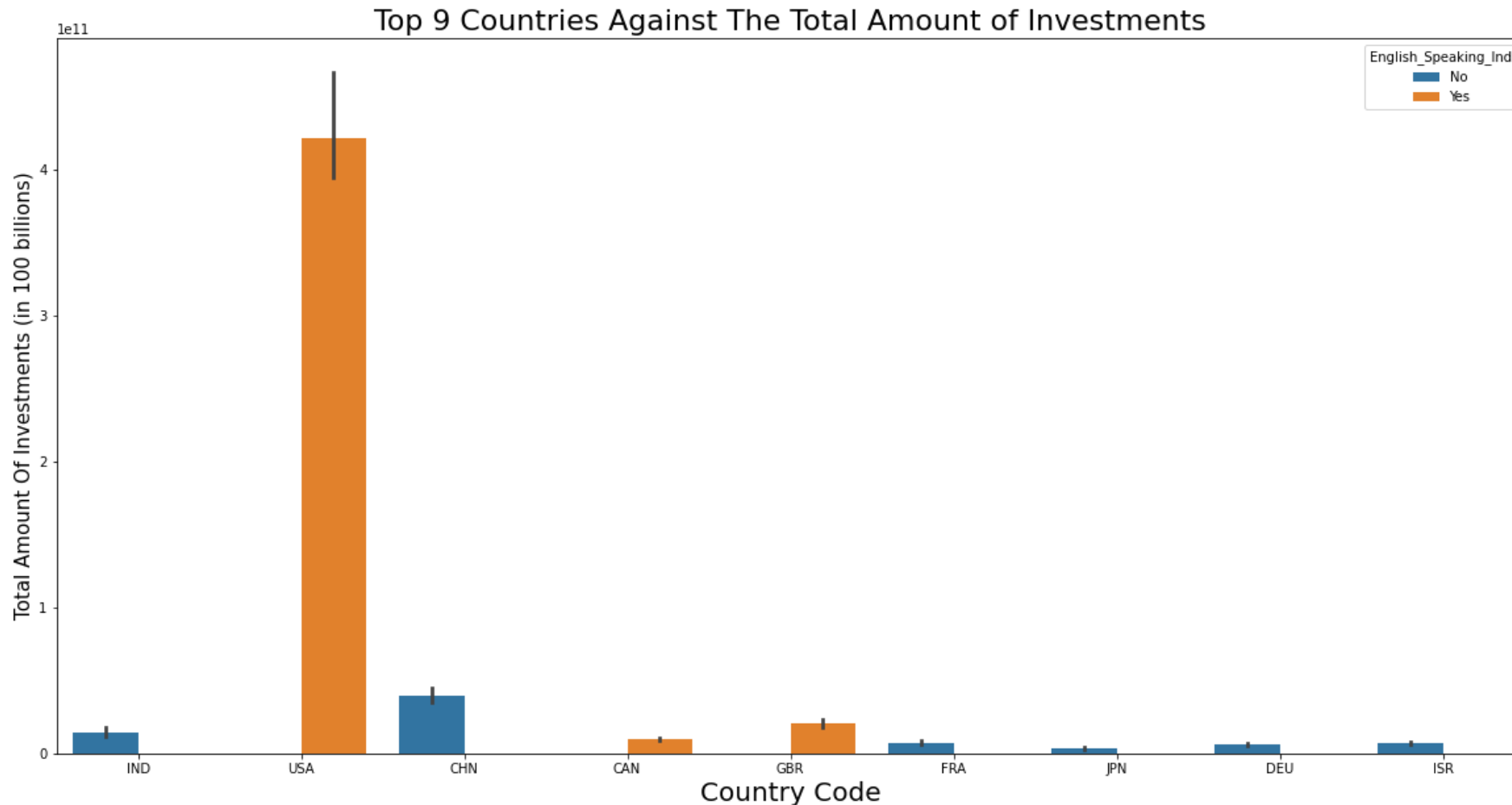
- ☐ Representative Amount = Median
- ☐ Funding Types = Venture, Angel, Private Equity and Seed



As the range of funding preferred is 5 to 15 million USD. From the plot, we can see that **Median** for **Venture** is **5M**, And all the **Others** are **<5M or >15M**. So I have chosen venture as our target funding type and processed with it.

Plot 2 – Showing the top 9 countries against the total amount of investments of funding type FT.  
Which clearly shows the top 3 countries.

- Top 9 Countries = IND, USA, CHN, CAN, GBR, FRA, JPN, DEU, ISR
- Funding Type = Venture



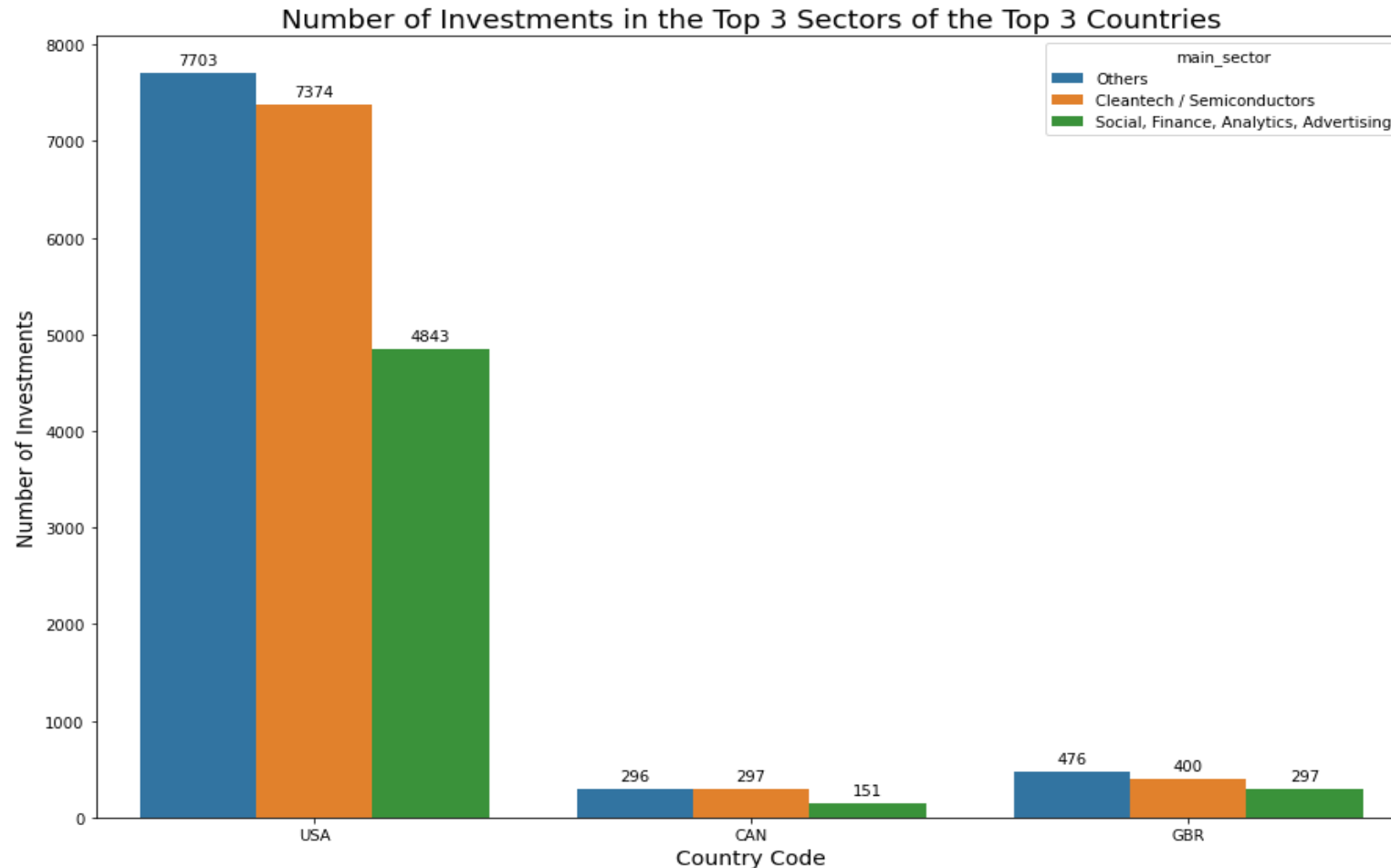
From the bar plot, we can clearly see that **USA is dominating**, And also the English Speaking Ind shows that we have only three of the countries speak English. So we can conclude by choosing, **GBR as second**. And **CAN as third**.

- ❖ First – USA(United States)
- ❖ Second – GBR (United kingdom)
- ❖ Third – CAN (Canada)



Plot 3 – Showing the number of investments in the top 3 sectors of the top 3 countries on one chart  
(for the chosen investment type FT)

- ❑ Top 3 Countries = USA, GBR, CAN
- ❑ Funding Type = Venture



From the plot, we can clearly see the top three sectors for all the three countries are same.

USA

- ❖ Others - 7703
- ❖ Cleantech / Semiconductors - 7374
- ❖ Social, Finance,. – 4843

CAN

- ❖ Cleantech / Semiconductors - 297
- ❖ Others - 296
- ❖ Social, Finance,. – 151

GBR

- ❖ Others - 476
- ❖ Cleantech / Semiconductors - 400
- ❖ Social, Finance,. - 297

## Conclusions:

- Funding Type falling within the 5-15 million USD range – Venture (based on representative value: Median).
- Top Three English Speaking Most Invested Countries:
  - First - USA,
  - Second - GBR,
  - Third - CAN
- Top Three Sectors of the Top Three Countries: All the three countries have the same three sectors as most invested among them. Given a table of, Number of investments:

Sectors\Countries	USA	GBR	CAN
Others	7703	476	297
Cleantech / Semiconductors	7374	400	296
Social, Finance, Analytics, Advertising	4843	297	151

- Highest Investment Received Company for Top Two Sectors.

Sector-wise best company\Countries	USA	GBR	CAN
Others	SoFi	OneWeb	Ram Power
Cleantech / Semiconductors	Freescale Semiconductor	Immunocore	D2L