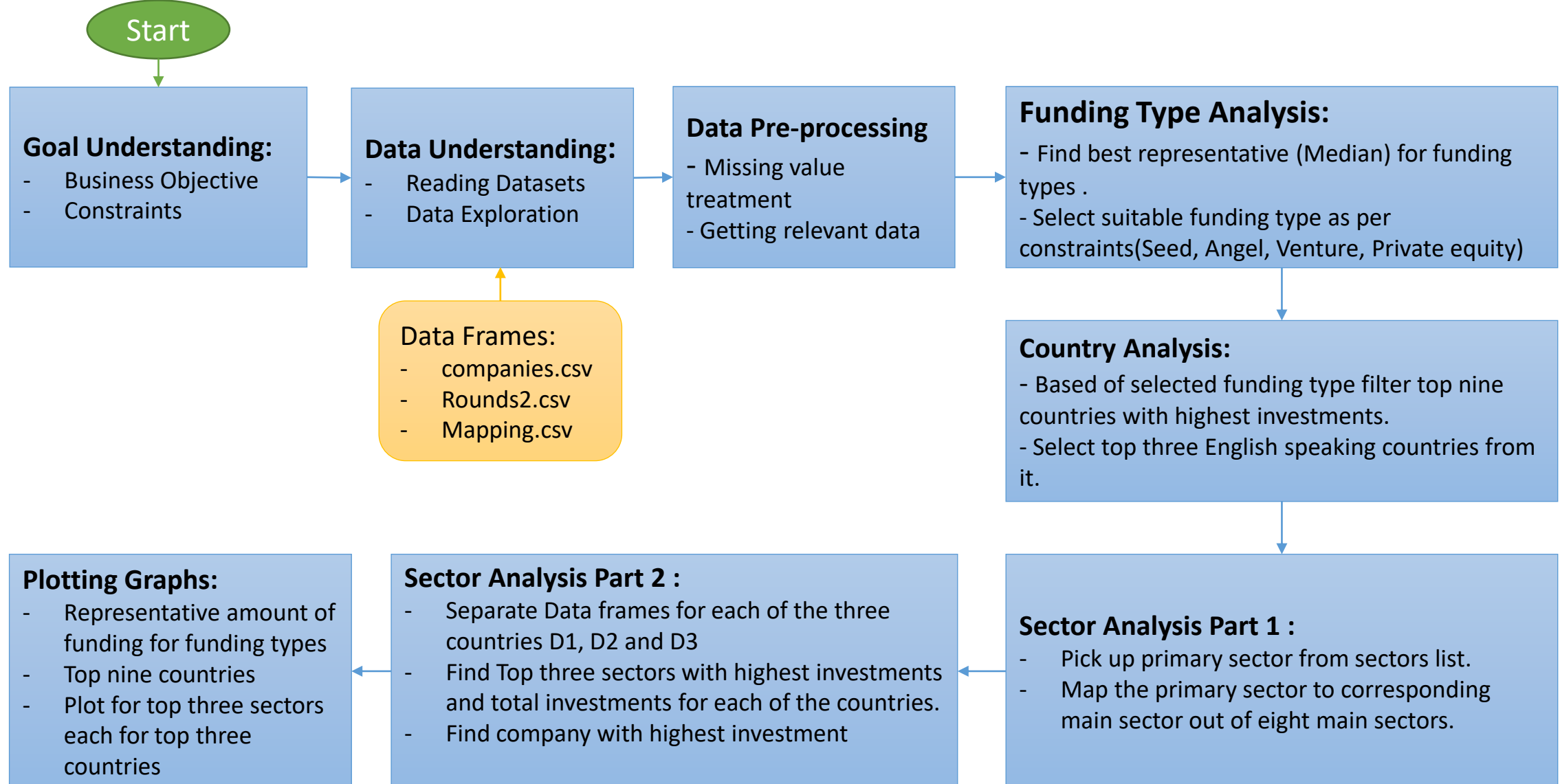# INVESTMENT ASSIGNMENT

SUBMISSION

Name:

Abstract:

- Spark Funds wants to make investments in a few companies.
- Spark Funds wants to understand the global trends in investments so that it can take the investment decisions effectively.

Business and Data Understanding:

Spark Funds has two minor constraints for investments:

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

Problem solving methodology:

Start

Goal Understanding:
- Business Objective
- Constraints

Data Understanding:
- Reading Datasets
- Data Exploration

Data Frames:
- companies.csv
- Rounds2.csv
- Mapping.csv

Data Pre-processing
- Missing value treatment
- Getting relevant data

Funding Type Analysis:
- Find best representative (Median) for funding types .
- Select suitable funding type as per constraints(Seed, Angel, Venture, Private equity)

Country Analysis:
- Based of selected funding type filter top nine countries with highest investments.
- Select top three English speaking countries from it.

Sector Analysis Part 1 :
- Pick up primary sector from sectors list.
- Map the primary sector to corresponding main sector out of eight main sectors.

Sector Analysis Part 2 :
- Separate Data frames for each of the three countries D1, D2 and D3
- Find Top three sectors with highest investments and total investments for each of the countries.
- Find company with highest investment

Plotting Graphs:
- Representative amount of funding for funding types
- Top nine countries
- Plot for top three sectors each for top three countries

Funding Type Analysis

- Investment Amount as per Spark Funds constraint : 5 to 15 Millions USD

- Funding Type Sparks Funds looking for : Seed, Angel, Venture, Private equity

- As per analysis of data our result using Median as representative type :

Representative funding amount of venture type	5000000
Representative funding amount of angel type	414906
Representative funding amount of seed type	300000
Representative funding amount of private equity type	20000000

- By considering 5 to 15 Millions range best suitable funding type : Venture

Country Analysis

- Selecting Investment type as Venture we filtered out data for top nine countries.
- Top nine countries : USA, CHN, GBR, IND, CAN, FRA, ISR, DEU, JPN
- As per Sparks Funds requirements, selected top three English speaking countries :

1. TOP : **United States of America (USA)**

2. SECOND TOP : **United Kingdom (GBR)**

3. THIRD TOP : **India (IND)**

Sector Analysis

- Extract primary sectors from sector list.

- Map primary sector column to its corresponding main sectors out of eight main sector.

- By doing the further required analysis :

| Points	C1 - USA	C2 - GBR	C3 - IND
Total number of Investments (count)	11149	577	299
Total amount of investment (USD)	99661524549	5028704358	2683537552
Top Sector name (no. of investment-wise)	Others	Others	Others
Second Sector name (no. of investment-wise)	Cleantech / Semiconductors	Cleantech / Semiconductors	News, Search and Messaging
Third Sector name (no. of investment-wise)	Social, Finance, Analytics, Advertising	Social, Finance, Analytics, Advertising	Entertainment
Number of investments in top sector (3)	2923	143	109
Number of investments in second sector (4)	2297	127	52
Number of investments in third sector (5)	1912	98	33
For point 3 (top sector count-wise), which company received the highest investment?	ORGANIZATION/VIRTUSTREAM	/ORGANIZATION/ELECTRIC-CLOUD	/ORGANIZATION/FIRSTCRY-COM
For point 4 (second best sector count-wise), which company received the highest investment?	ORGANIZATION/BIODESIX	/ORGANIZATION/EUSA-PHARMA	/ORGANIZATION/GUPSHUP-TECHNOLOGY-INDIA-PVT-LTD

Representative Amount for funding types
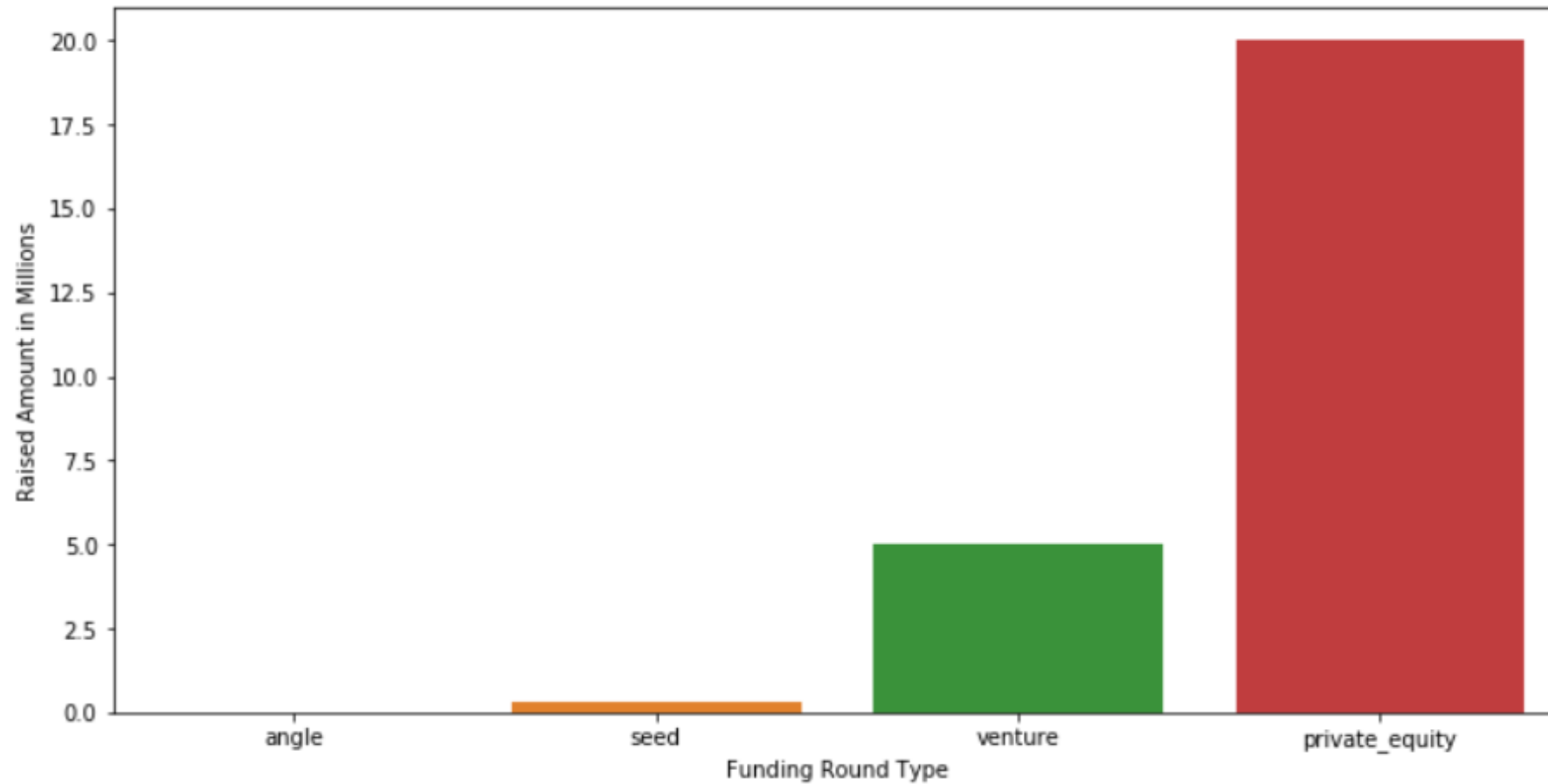
A plot showing the top 9 countries against the total amount of investments of funding type FT
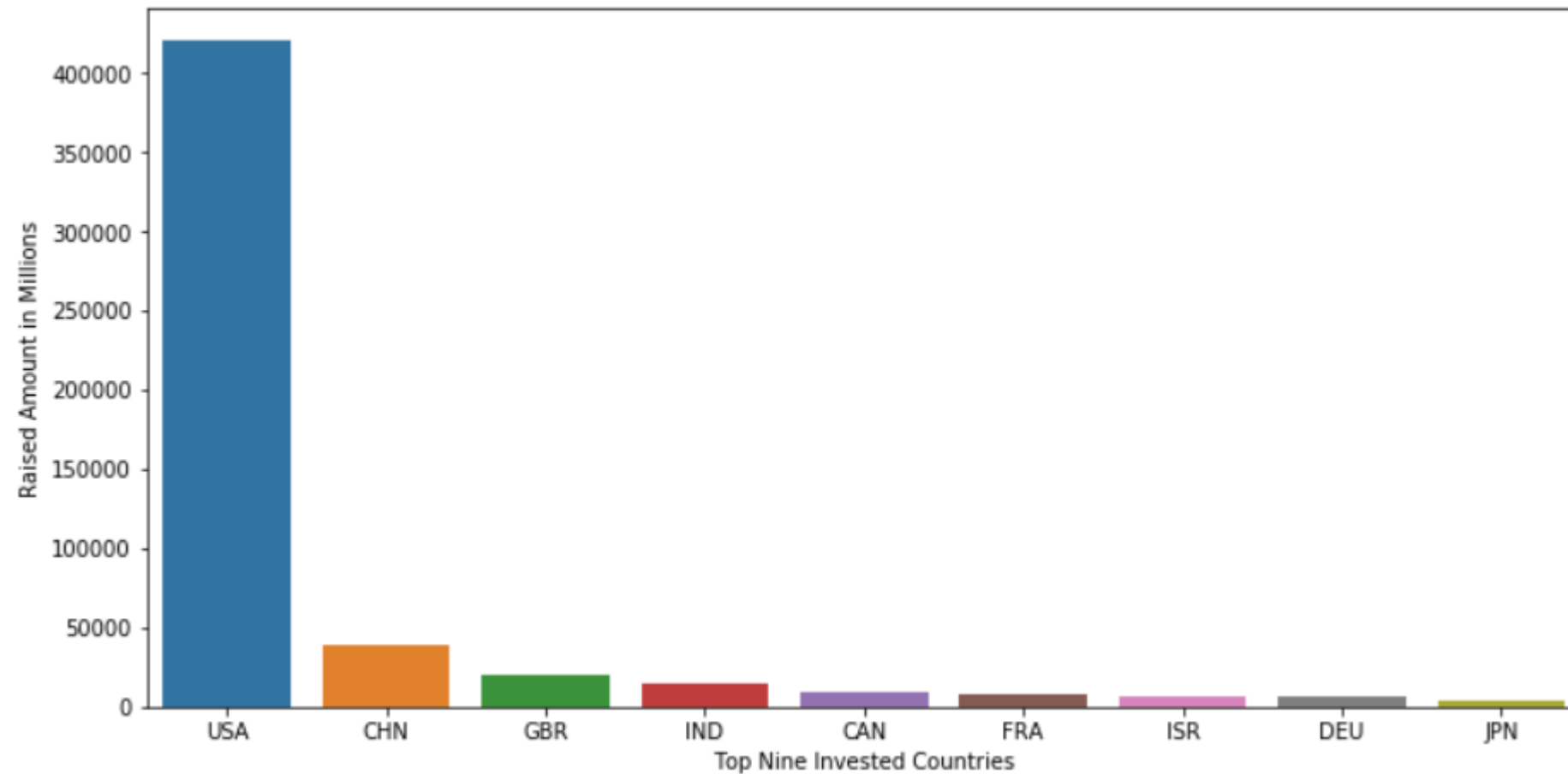
Plot showing the number of investments in the top 3 sectors of the top 3 countries on one chart (for the chosen investment type FT).
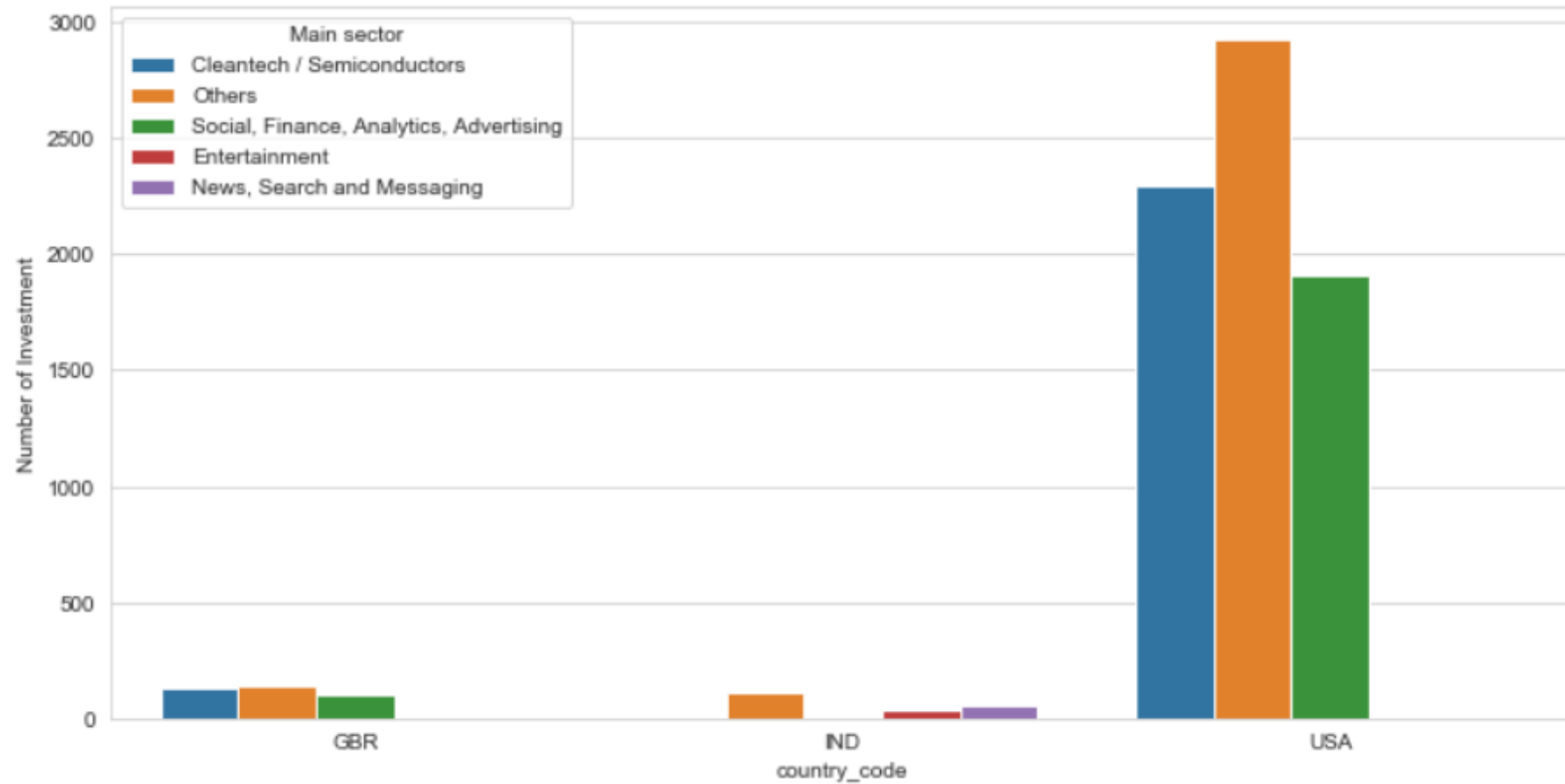
Conclusion :

1. Sparks Funds should consider funding type Venture as it has highest amount of investments within Spark Funds constraints.

2. Spark Funds first choice should be USA for it investment country. But to avoid risk factor Spark Funds should also consider GBR and IND for investments.

3. "Others" is the best choice for sector for Spark Funds to invest in.

4. Other than "Others" Spark Funds should go for following sectors :

*   USA : Cleantech / Semiconductors, Social, Finance, Analytics, Advertising

*   GBR : Cleantech / Semiconductors, Social, Finance, Analytics, Advertising

*   IND : News, Search and Messaging, Entertainment