INVESTMENT ASSIGNMENT

SUBMISSION

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Abstract of Analysis of Investment

Business case :

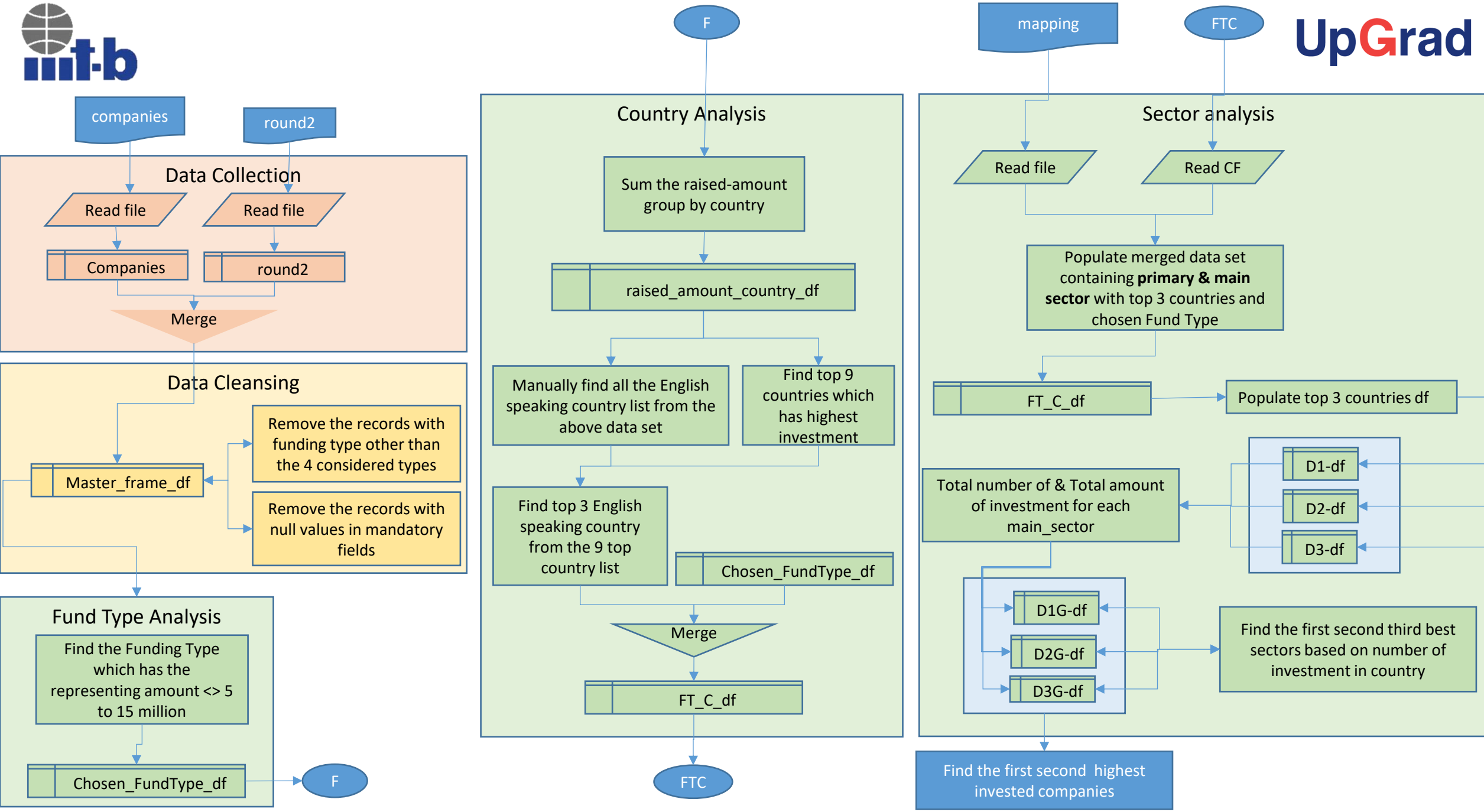
The CEO of Spark Funds wants to understand the global trends in investments so that she can take the investment decisions effectively.

Requirement:

- It wants to make the investment in few companies.
- It wants to invest between **5 to 15 million USD** per round of investment
- It wants to invest with the investment Type in any one of : **Seed, Angel, Venture, Private Equity**
- It wants to invest only in **English-speaking countries.**
- Considering only the Primary sector

Results Expected:

- Choose one of the four Investment Type which is suitable for the investment amount
- Choose Top 3 English speaking Country based on the higher investment amount.
- Choose Top 3 sectors based on the highest number of investment
- Choose one company which got highest investment, for the Top sector
- Choose one company which got highest investment, for the Second best sector


companies
round2
Data Collection
Read file
Read file
Companies
round2
Merge
Data Cleansing
Master_frame_df
Remove the records with funding type other than the 4 considered types
Remove the records with null values in mandatory fields
Fund Type Analysis
Find the Funding Type which has the representing amount <> 5 to 15 million
Chosen_FundType_df
F
F
Country Analysis
Sum the raised-amount group by country
raised_amount_country_df
Manually find all the English speaking country list from the above data set
Find top 9 countries which has highest investment
Find top 3 English speaking country from the 9 top country list
Chosen_FundType_df
Merge
FT_C_df
FTC
mapping
FTC
Sector analysis
Read file
Read CF
Populate merged data set containing primary & main sector with top 3 countries and chosen Fund Type
FT_C_df
Populate top 3 countries df
D1-df
D2-df
D3-df
Total number of & Total amount of investment for each main_sector
D1G-df
D2G-df
D3G-df
Find the first second third best sectors based on number of investment in country
Find the first second highest invested companies

Fund Type Analysis:

- Data is read from Companies.csv and rounds2.csv with the proper encoding and decoding format.
- The unique key value is verified in both the tables.
- Both the tables are merged using permalink after converting the permalink to lowercase.
- Data Cleaning
  - removing the redundant columns
  - Removing the records which has null values in the Country_code field since data without the country code might not be of help in analysing.
  - Removing the records which has null values in the raised_amount_usd field since it contains data for different funding type. Also substituting median value for those null values might exaggerate the data set.
  - Removing the data which is not in the four Funding Type we need for analysis
- Finding the best Representative funding amount for each of the Funding Type.
- Finding the Funding Type which lies in the required range of 5 to 15 million dollar per round investment
- After performing all the Data Cleaning and Analysis for the Fund Type, The Fund Type recommendation is ‘Venture’

Country Analysis

- ‘Consider the Dataset which has only ‘Venture’ Funding Type.
  - Create a data set called “Country” which list all the countries and its summedup “raised_amount_usd” in descending order .
    - Manually picking few English speaking countries from the above data set.
    - Select Top 9 country with the high amount of investment
      - From Top 9 records, choose the top 3 English speaking countries

Below are the top 3 countries chosen for the 'Venture’ Funding type .

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

Data cleaning:

Remove all the records which has country-code other than USA, GBR, IND

Sector Analysis

- Considering only those records which has 'Venture‘ as FundingType and the Countries as 'USA','GBR','IND'.
  - Extract the first value from the “|(pipe)” delimited string from the category list column and add that value in the new column called “primary_sector”
  - Data cleaning on Mapping.csv file.
    - Verifying the null values and redundant columns and removing those records
    - Data correction done for the improper data (e.g replace 0 with ‘na’ wherever applicable)
    - Using pd.melt() converted wide format to long format.
    - Consider only those records which has Primary sector and Main sector, and remove the other records.
  - Merge the Mapping data with “venture country dataframe”
  - Consider only those records which had investment amount in the range of 5 to 15 million
  - Split the data for each country and find the top 3 sector in each country based on the number of investment.
  - For the Top and second best sector, find the company which got highest investment.

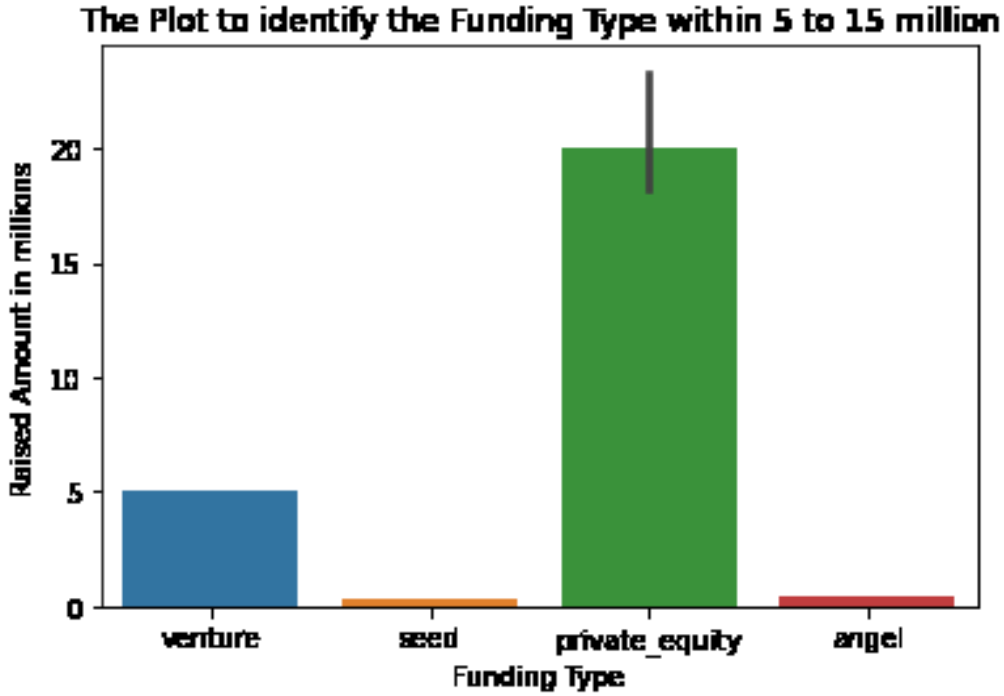
  - Data cleaning
    - Consider only those records having
      - Venture as FundType &
      - Countries as 'USA','GBR','IND’ &
      - investment range between 5 to 15 million

Results – Plot 1 Funding Type vs Raised Amount

Plot 1

Plot 1 shows the best representative amount for each of the four Funding Type. X-axis as Funding Type. Y-axis as ‘Raised Amount’ in millions.

The Funding Type ‘Venture’ lies between the investment range of 5 to 15 millions.

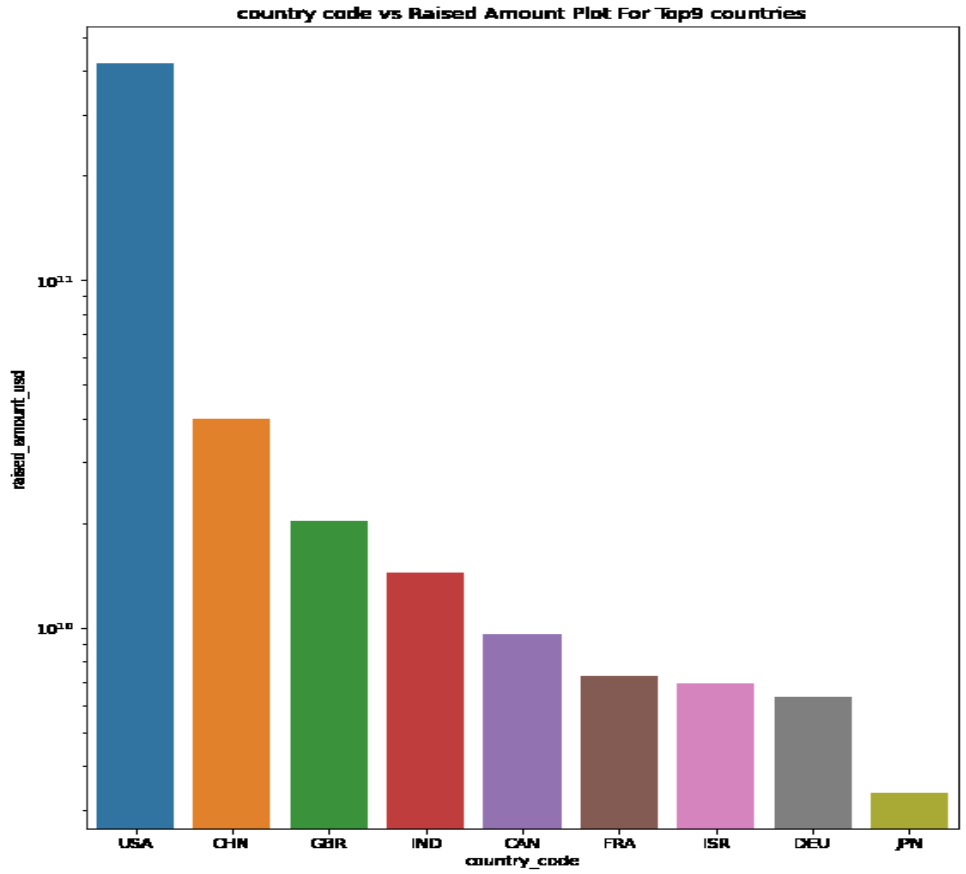


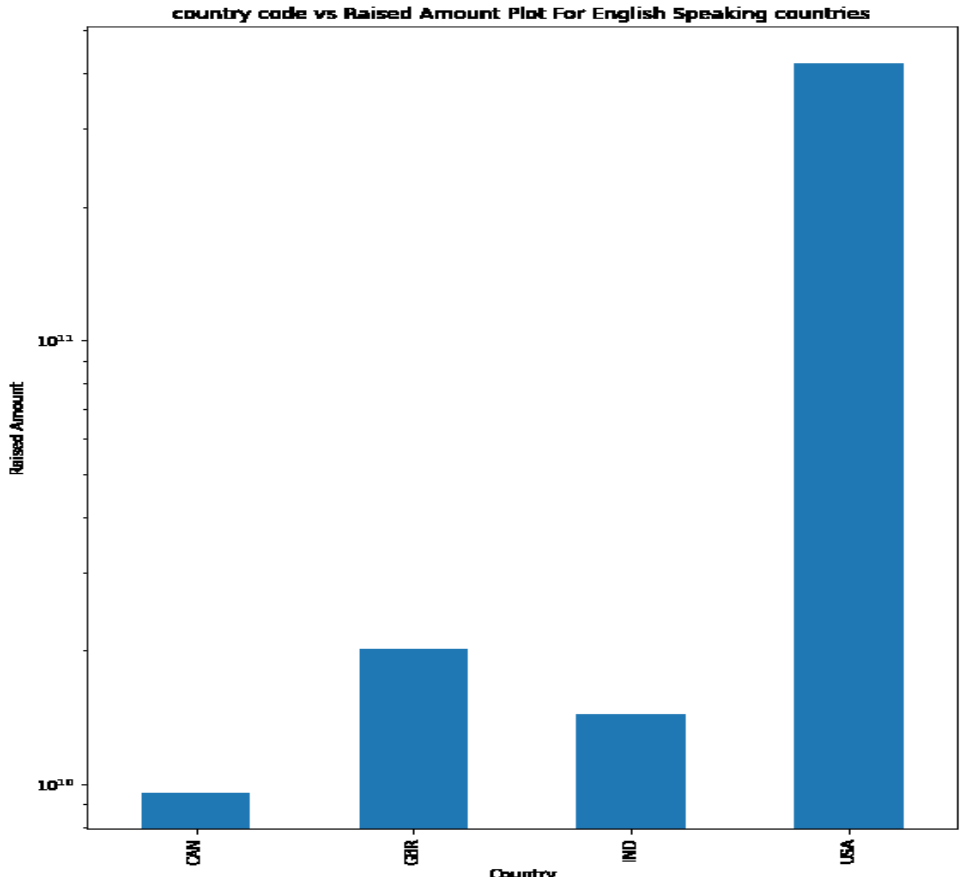
Results – Plot 2 Top 9 vs Raised amount. Top3 to be plotted Clear

Plot 2

The First plot showing the top 9 countries against the total amount of investments for Venture funding type.

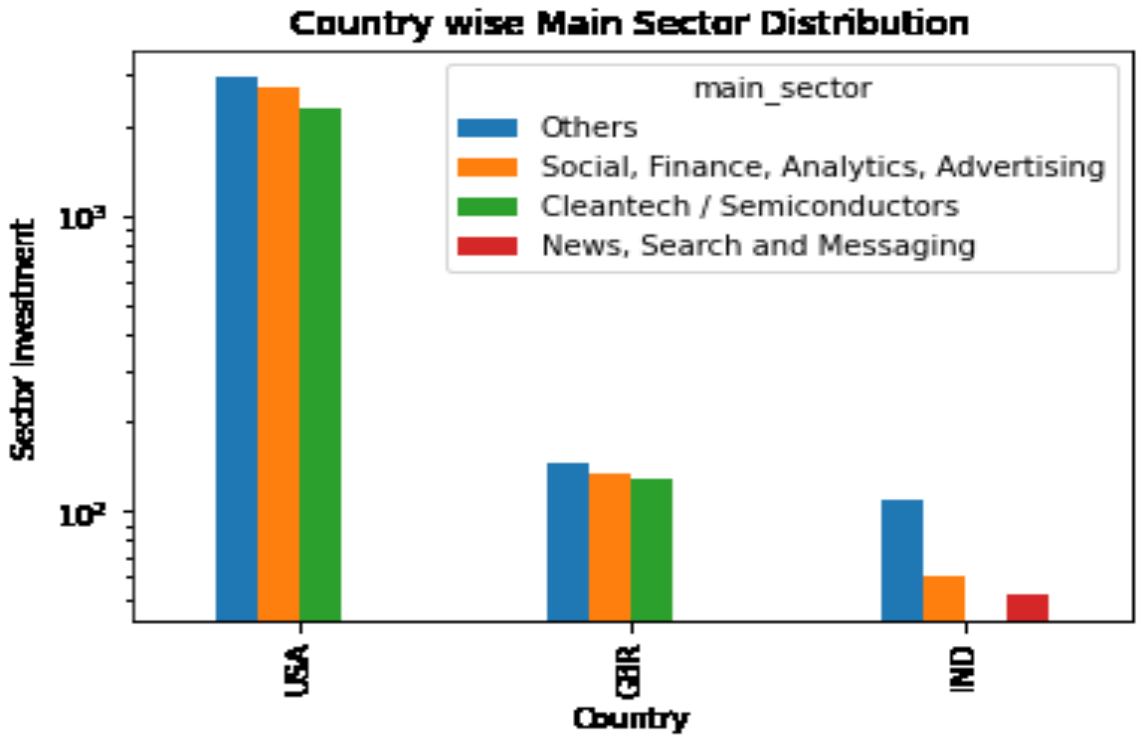
The Second Plot showing the top 3 English speaking countries against the highest investment amount.





Results – Plot 3 Top 3 sectors each in Country 1, Country 2, and Country 3.

Plot 3 to shows the Top 3 sectors in Top 3 countries as single chart for “Venture” Funding Type



Recommendation from the Analysis

- The Funding Type is ‘Venture’
  - The best representative of the four Funding Types (Seed, Angel, Venture and Private Equity) is taken. The ‘venture’ Funding Type has the best representative amount which lies within the Spark Funds investment range of 5 to 15 millions per round of investment.
- The Top 3 English Speaking Countries are ‘USA’,’GBR’,’IND’
  - The Top9 countries based on the highest investment amount is considered. Its verified with the English speaking country and top 3 is taken
- Top 3 Sector and Best Companies:

Country	Sector	Companies
USA	Others	Virtustream
	Social, Finance, Analytics, Advertising	SST Inc. (Formerly ShotSpotter)
	Cleantech / Semiconductors	

Country	Sector	Companies
GBR	Others	Electric Cloud
	Social, Finance, Analytics, Advertising	Celltick Technologies
	Cleantech / Semiconductors	

Country	Sector	Companies
IND	Others	FirstCry.com
	Social, Finance, Analytics, Advertising	Manthan Systems
	News, Search and Messaging	