SPARK FUNDS
AN ASSET MANAGEMENT COMPANY
INVESTMENT ASSIGNMENT

SUBMISSION

Name: CHANDAN KUMAR

Abstract

Objective

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

Strategy

To invest where others are investing, implying that the best sectors and countries are the ones where most investments are happening.
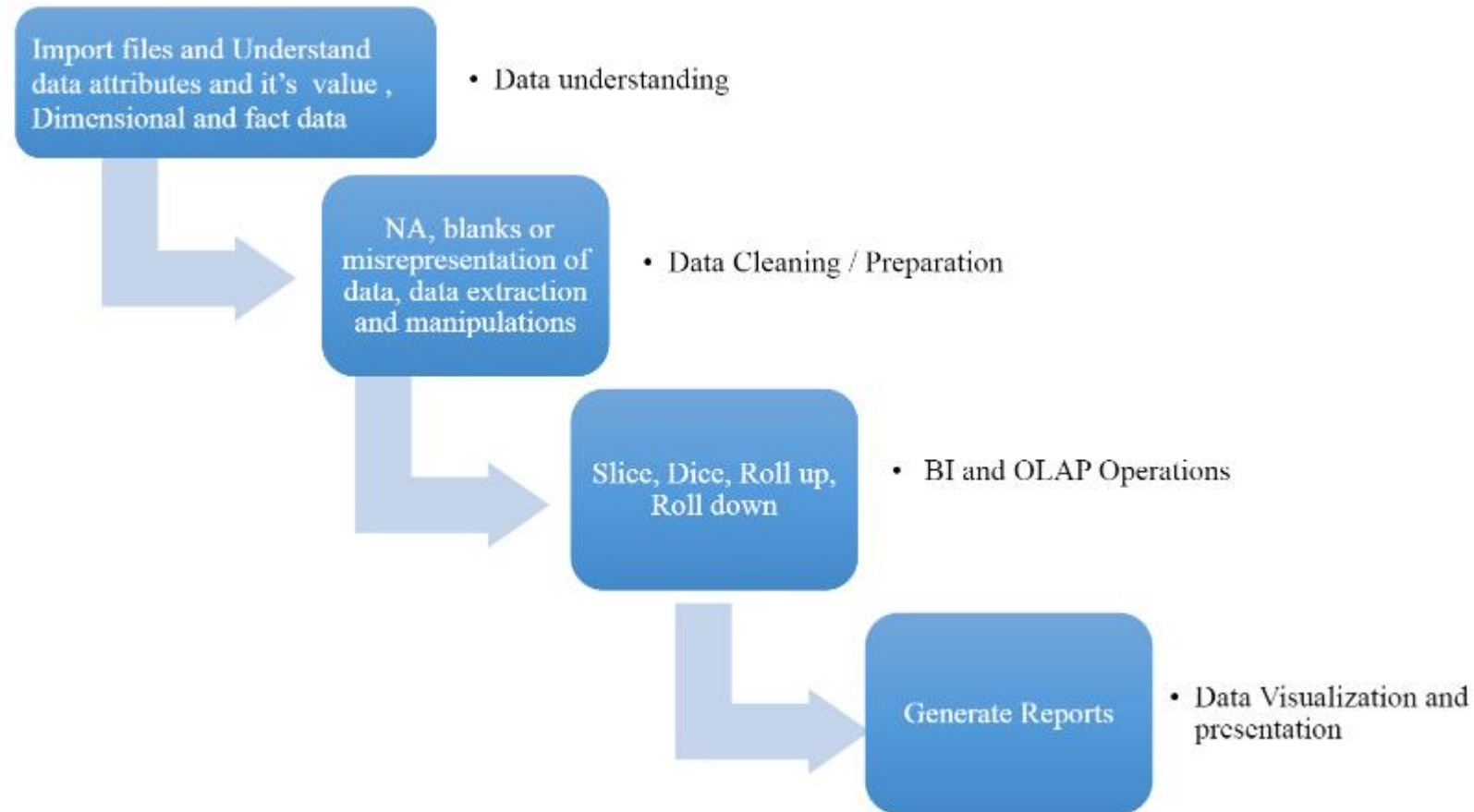
Goals of Data Analysis

- **Investment Type Analysis** Analyse investments (globally) in venture, seed, and private equity.
- **Country Analysis** Analyse which country received more investment in the past.
- **Sector Analysis** Analyse top sectors of top three countries for investment.

Constraints

- Funding preferred by Spark Funds is **5 to 15 million USD** per round.
- Preferred country will be **English** speaking

Problem Solving Methodology

Investment Type Analysis

Assumption

✓ There are 19,990 missing/Null values for funding amount in rounds2 dataset.

✓ Considered 6238(~10% of company's dataset) CLOSED companies as well in Companies data frame, as nowhere its mention to eliminate those cases

✓ NA values are subsequently ignored in this case analysis.

Results

✓ Calculated the average investment amount for each funding type.

✓ Considering that Spark Funds wants to invest between **5 to 15 million USD** per investment round, "**Venture**" investment type is most suitable type for investment.

Country Analysis

Goal

✓ For the "Venture" investment type, identify the countries where most investments are occurring.

Strategy

✓ Identified the top nine countries (based on the total investment amount each country has received)

✓ USA, CHN, GBR, IND, CAN, FRA, ISR, DEU, RUS

✓ Web Scraping is used to fetch all English-speaking countries from the provided Wiki Link.

✓ Top9 data frame and Country list from wiki link are joined to derive top 3 countries based on highest funds received .

Result

Most Investment friendly English-Speaking countries for Spark Fund are **USA, GBR and IND**

country_code	raised_amount_usd
USA	422510842796.00000
CHN	39835418773.00000
GBR	20245627416.00000
IND	14391858718.00000
CAN	9583332317.00000
FRA	7259536732.00000
ISR	6907514579.00000
DEU	6346959822.00000
JPN	3363676611.00000

Country	Alpha-3 code
Antigua and Barbuda[2]	ATG
Australia	AUS
Burundi[5]	BDI
Bahamas[2]	BHS
Belize[4]	BLZ
Barbados[3]	BRB
Botswana[4]	BWA
Canada[2]	CAN
Cameroon[2]	CMR
Cook Islands[2]14	COK

Alpha-3 code	raised_amount_usd
USA	422510842796.00000
GBR	20245627416.00000
IND	14391858718.00000

Sector Analysis

	investment_count	Ranking
Main_Sector		
Others	2950	1
Social, Finance, Analytics, Advertising	2714	2
Cleantech / Semiconductors	2350	3

	investment_count	Ranking
Main_Sector		
Others	147	1
Social, Finance, Analytics, Advertising	133	2
Cleantech / Semiconductors	130	3

	investment_count	Ranking
Main_Sector		
Others	110	1
Social, Finance, Analytics, Advertising	60	2
News, Search and Messaging	52	3

Goal

Top 3 sectors for investment, top and second-best companies for investment in each of top 3 sectors.

Strategy:

✓ Extracted the primary sector of each category from the category_list (column of master_frame).

✓ Used the mapping file 'mapping.csv' to map each primary sector to one of the eight main sectors by considering business rule that the first string before the vertical bar will be considered the primary sector
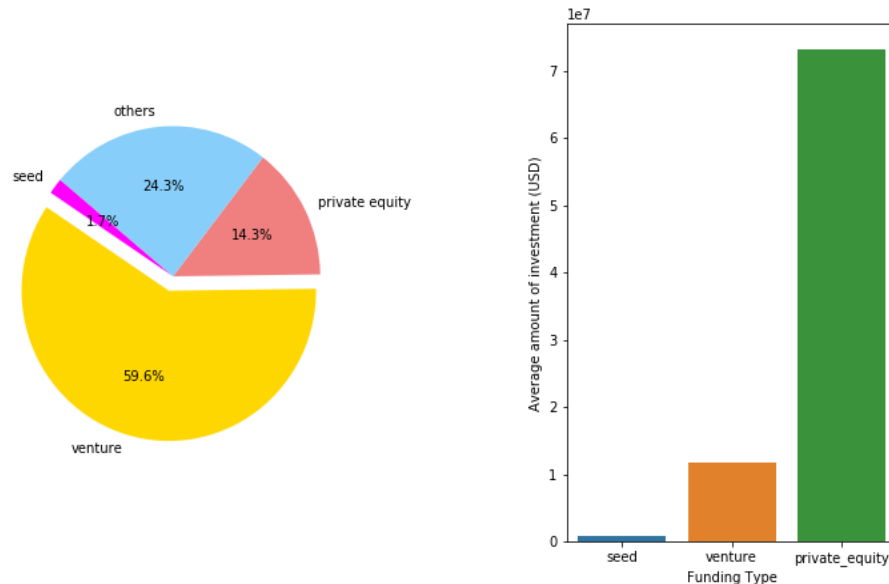
Assumption :

✓ Category_list column of mapping has discrepancy, as in many values "na" is replaced with "0". For e.g. "Analytics" is written as "A0lytics".

✓ Replaced "0" with "na".

Result

✓ Identified the most heavily invested main sectors in each of the three countries – USA, GBR, IND (for funding type "Venture" and investments range of 5-15 M USD).

Showing the fraction of total investments (globally) in venture, seed, and private equity, and the average amount of investment in each funding type.
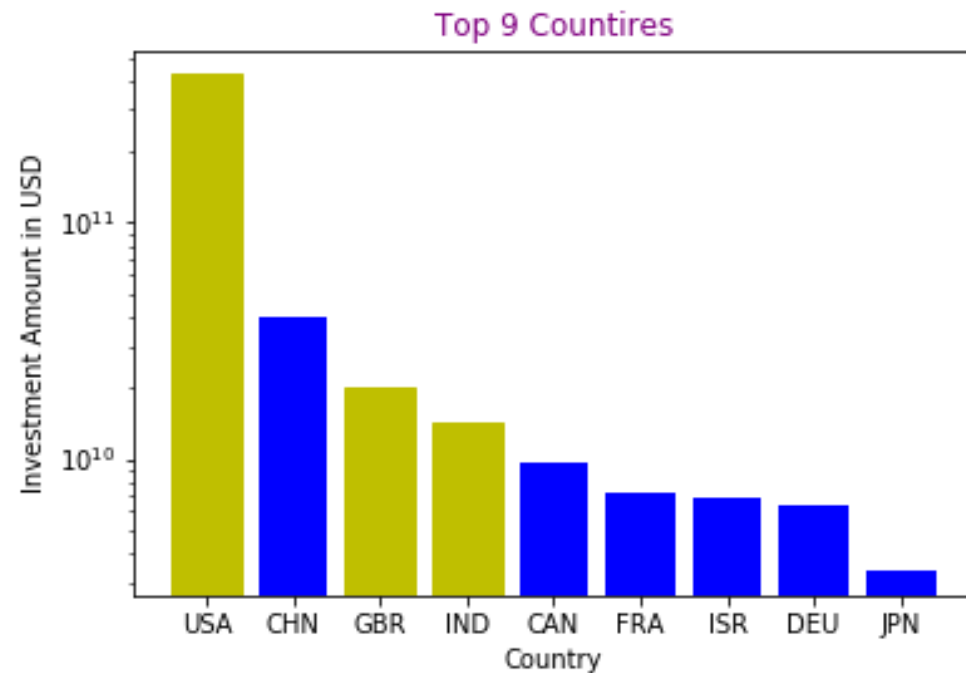
Plot 1

Description

✓ Fraction of Total Investment globally in venture, seed and private equity is plotted in percentage.

✓ Mean of Investment in each funding type is plotted using Bar Chart.

✓ Only Funding Type Average value falls between the range of 5-15M is venture.

✓ From the plot is clearly visible that best suited funding type for Spark fund is "Venture".

Result

✓ Best suited funding type: **Venture**

Showing the top 9 countries against the total amount of investments of funding type - Venture and the top 3 countries with English as primary language.

Plot 2

Description

✓ Top 9 countries with highest raised amount sum in USD (Blue Bar)

✓ Top 3 English Speaking countries as per highest raised amount sum in USD (Yellow Bar)

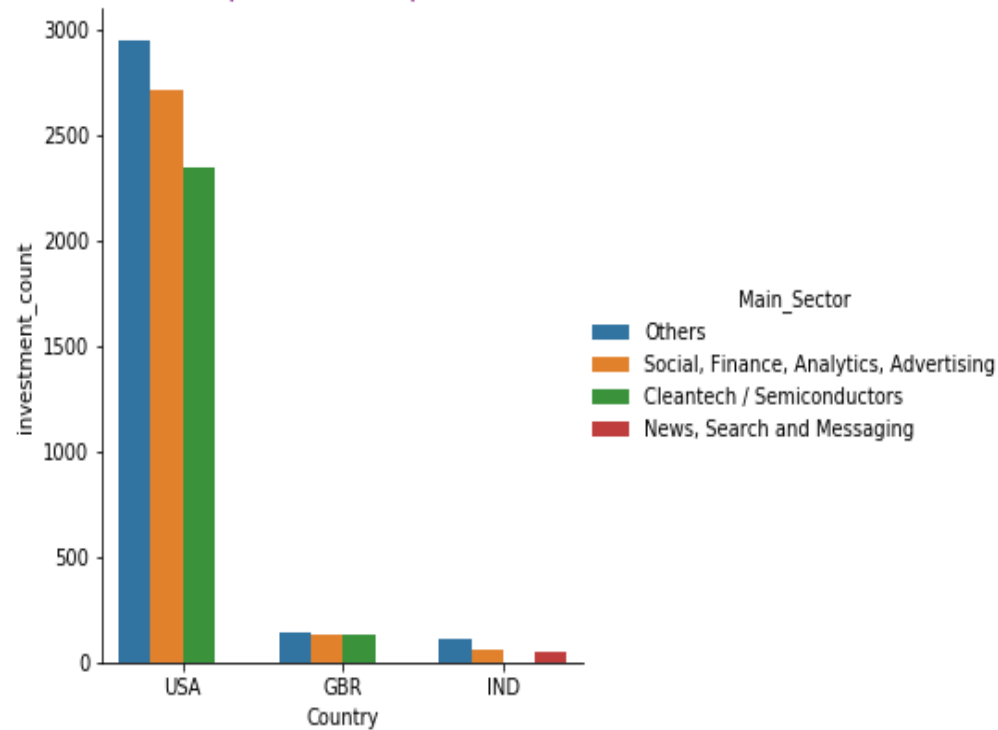✓ China is eliminated from top 3 because English is not one of their official language

Result

✓ **USA(United States of America), GBR(Great Britain), IND (India)** are top 3 countries for investment.

Showing the number of investments in the top 3 sectors of top 3 countries for the Venture investment Funding Type.

Plot 3

No. of Investments in top 3 sectors of top 3 countries for Venture FT

Description

✓ In USA, the difference between the second and the third largest sector in terms of the number of investments they received is more than double the difference between the largest and the second largest sectors.

✓ In GBR, all the top three sectors have received similar number of investments and are almost equally favorable options for investment for Spark Funds.

✓ In IND, the second and the third largest sectors have received almost the same number of investments. However, the top sector in IND has received nearly 85% more investments than the second largest sector.

Conclusions

As per analysis report

➢ Identified the best sectors, countries, and a suitable investment type for making investments.

➢ These are subject to the assumptions made in the provided data set and the business rules decisions.

To summarize

➢ **Venture** – most suitable investment type

➢ **USA, GBR, IND** – most suitable countries for investment

➢ **Others** – most suitable sector for investment in USA, GBR and IND