

# INVESTMENT CASE STUDY

## SUBMISSION

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# Abstract

The case study was aimed at helping out an asset management company, named Spark Funds, to make investments in a few companies. With this case study, the company wants to understand the global trends in investment and take the decisions based on the same.

The main objectives for the Spark Funds investment include:

- Support Spark Funds in investment ranging from 5 million USD to 15 million USD per investment round.
- Identify the best investment types like venture, seed, private equity etc. suitable for Spark Funds.
- Identify best suitable investment in English Speaking countries.
- Provide best sector investment for top 3 English speaking countries.

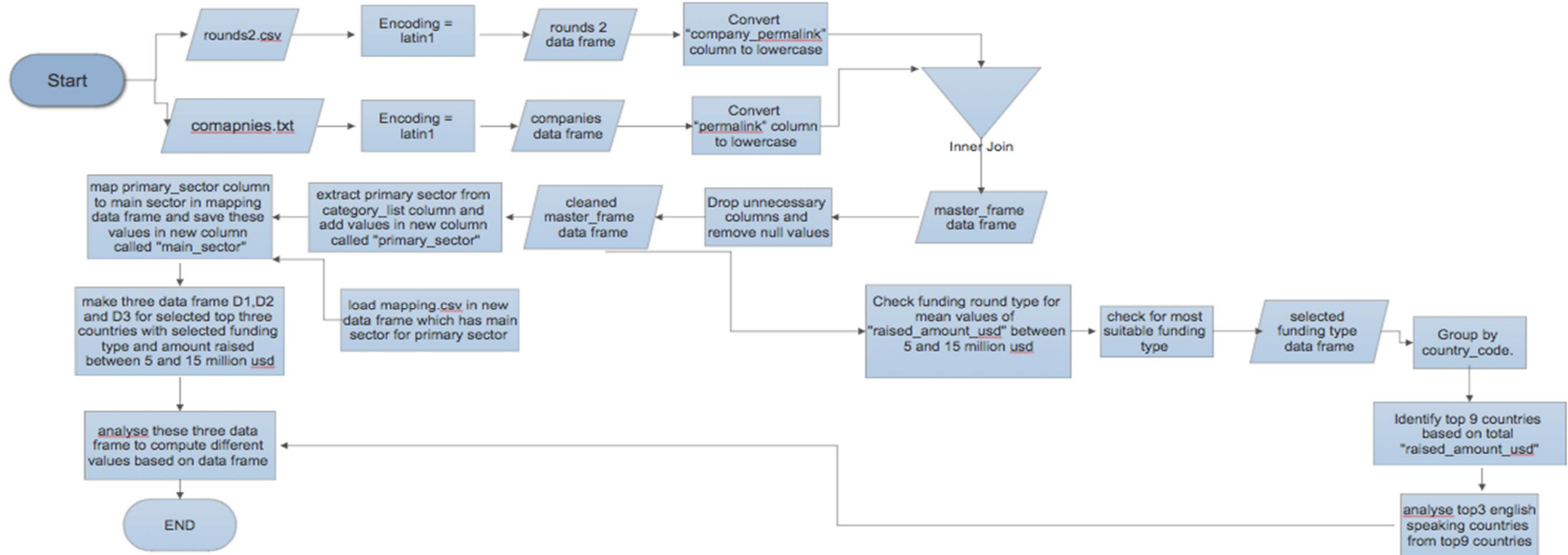
With above objectives in place, the case-study is divided into three different analyses:

Ø Investment-Type Analysis

Ø Country Analysis

Ø Sector Analysis

# Problem Solving Methodology



# Investment Type Analysis

The goal of the investment type analysis was to come up with the type of investment that suits the Spark funds investment.

As part of this analysis, the master data that included the investment details for different rounds along with company details, was aggregated based on the investment types to determine the mean investment across each investment type that had happened in past.

Since the Spark funds wants to invest between 5 to 15 million USD per round, based on the data for previous rounds investments, investment type “**venture**” was found most suitable for the investment. Within, venture investment type, the average investment was falling between 5 million USD to 15 million USD (mean previous investment in venture investment type was 11.724 million USD).

	raised_amount_usd	raised_amount_million_usd
funding_round_type		
angel	9.715739e+05	0.971575
convertible_note	1.337187e+06	1.337184
debt_financing	1.716765e+07	17.167651
equity_crowdfunding	5.098980e+05	0.509903
grant	4.512698e+06	4.512693
non_equity_assistance	4.807534e+05	0.480767
post_ipo_debt	1.694518e+08	169.451801
post_ipo_equity	6.607706e+07	66.077052
private_equity	7.393849e+07	73.938484
product_crowdfunding	1.353227e+06	1.353221
secondary_market	8.443853e+07	84.438536
seed	7.477937e+05	0.747793
undisclosed	1.589166e+07	15.891662
venture	1.172422e+07	11.724223

# Country Analysis

After determining the investment type as “venture”, the next part was to determine the most suitable English speaking countries for investment.

For this the data for the venture investment was filtered out and the analysis was performed on this data. On checking the aggregated data for venture investments, in different countries, the top nine countries with highest occurring investments were evaluated.

Out of these nine countries, top three **English speaking countries** were determined manually. The top three English speaking countries that came out with highest occurring venture investments are : United States, United Kingdom and India.

country_code	raised_amount_usd	raised_amount_million_usd
USA	4.200680e+11	420068.059
CHN	3.933892e+10	39338.918
GBR	2.007281e+10	20072.815
IND	1.426151e+10	14261.509
CAN	9.482218e+09	9482.208
FRA	7.226851e+09	7226.847
ISR	6.854350e+09	6854.350
DEU	6.306922e+09	6306.922
JPN	3.167647e+09	3167.647

# Sector Analysis

As part of this analysis, first the primary sector of the company was determined and then the corresponding main sector was evaluated (based on the mapping provided) and merged with master data.

Thereafter, from the original data was filtered for each of the top English speaking country and the venture investment type and round investment ranging between 5 to 15 million USD. This data was shared in separate data frames for three different countries. The total value of investment in each country was determined from each data frame.

The data in each country data frame was aggregated differently for main sectors and added to get total counts and investment sum on main sector types and highest sectors based on the number of investments across them were determined. Based on results received across three countries, for each country companies for highest and second-highest main sector investments, the company with highest investment in that sector were determined.

## • Total number of investments

```
# Total number of row entries in D1 dataframe is the total number of investments in United States
D1.shape[0]
```

12092

## • Total amount of investment

```
# Total sum of raised amount in D1 dataframe is the total amount of investments in United States
D1['raised_amount_usd'].sum()
```

108002096957.0

## • Top 3 main sectors (based on count of investments) and investment in these sectors

```
# Sum Value across main sectors is already present in dataframe.
# It is however duplicated across multiple entries.
# To get the top three sectors and their sum values, we have to select only the
# columns main_sector and count_main_sector_usd
exp_resultset_D1 = D1[['main_sector', 'count_main_sector_usd']].drop_duplicates()
exp_resultset_D1.sort_values(by='count_main_sector_usd', ascending=False).head(3)
```

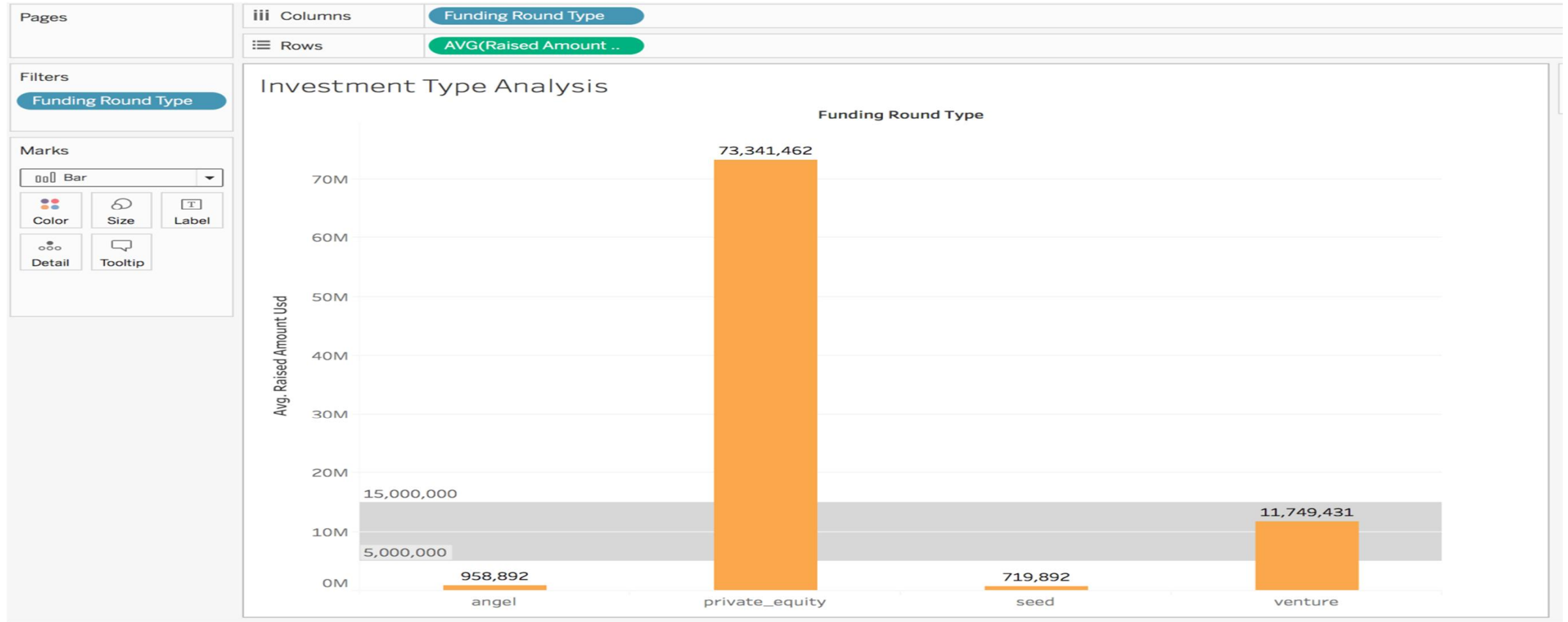
	main_sector	count_main_sector_usd
7251	Others	2957
4533	Social, Finance, Analytics, Advertising	2718
2178	Cleantech / Semiconductors	2355

## • Company that received highest investment with main\_sector as "Others"

```
topSecCompGrp_D1 = D1[D1.main_sector=='Others'].groupby('name')
topSecCompGrp_D1['raised_amount_usd'].sum().sort_values(ascending=False).head()
```

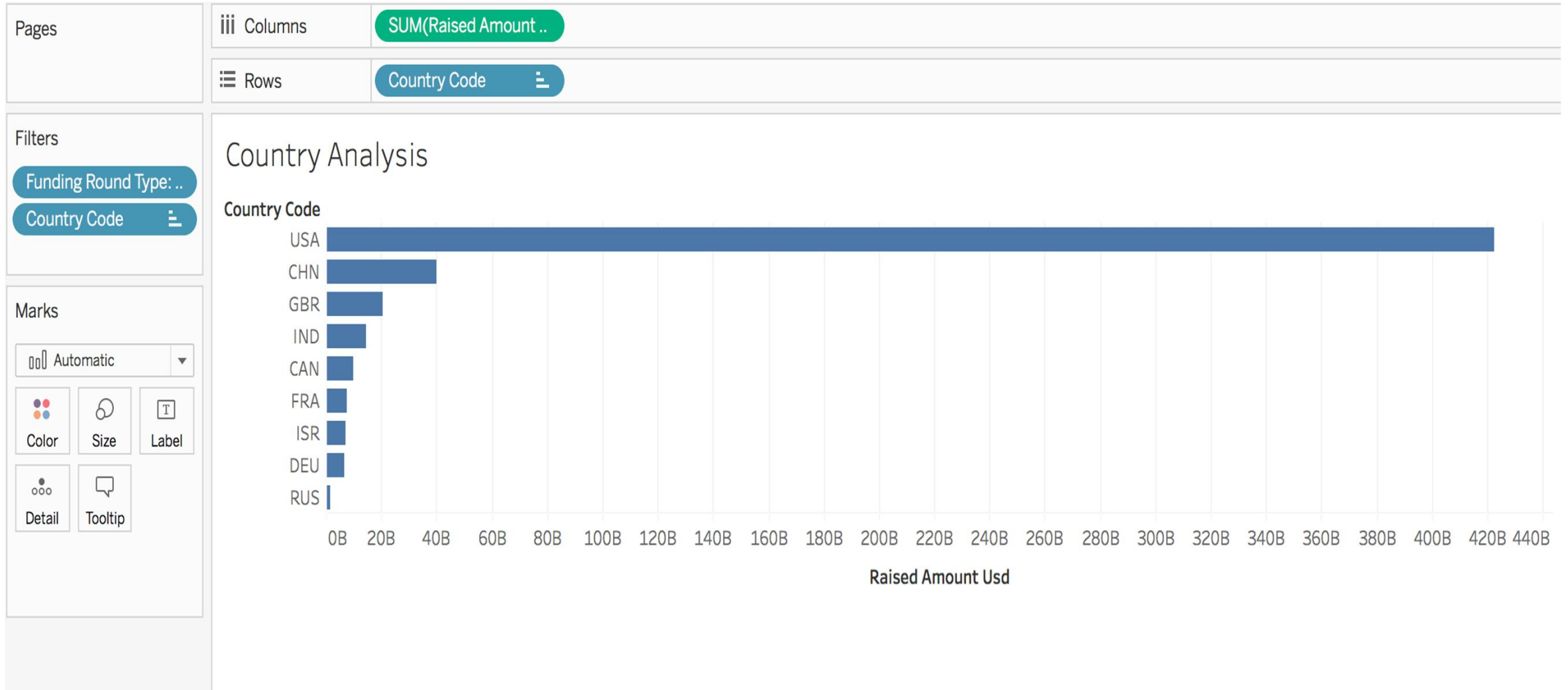
name	
Virtustream	64300000.0

# Tableau Plot for Investment Type Analysis





# Tableau Plot for Country Analysis





# Tableau Plot for Sector Analysis



# Conclusions

- Ø **Analysis - Investment Type** : The Suitable option for Spark Fund is with the Range of 5M to 15M will be in Venture Funding.
- Ø **Analysis – Country** : The Top 3 English speaking countries suitable for Venture investment are United States, United Kingdom & India.
- Ø **Analysis – Sector** : Top 3 main sectors applicable for investment in top 3 countries for Venture investments are as below :

Position	United States	United Kingdom	India
First	Others	Others	Others
Second	Social, Finance, Analytics, Advertising	Social, Finance, Analytics, Advertising	Social, Finance, Analytics, Advertising
Third	Cleantech / Semiconductors	Cleantech / Semiconductors	News, Search and Messaging