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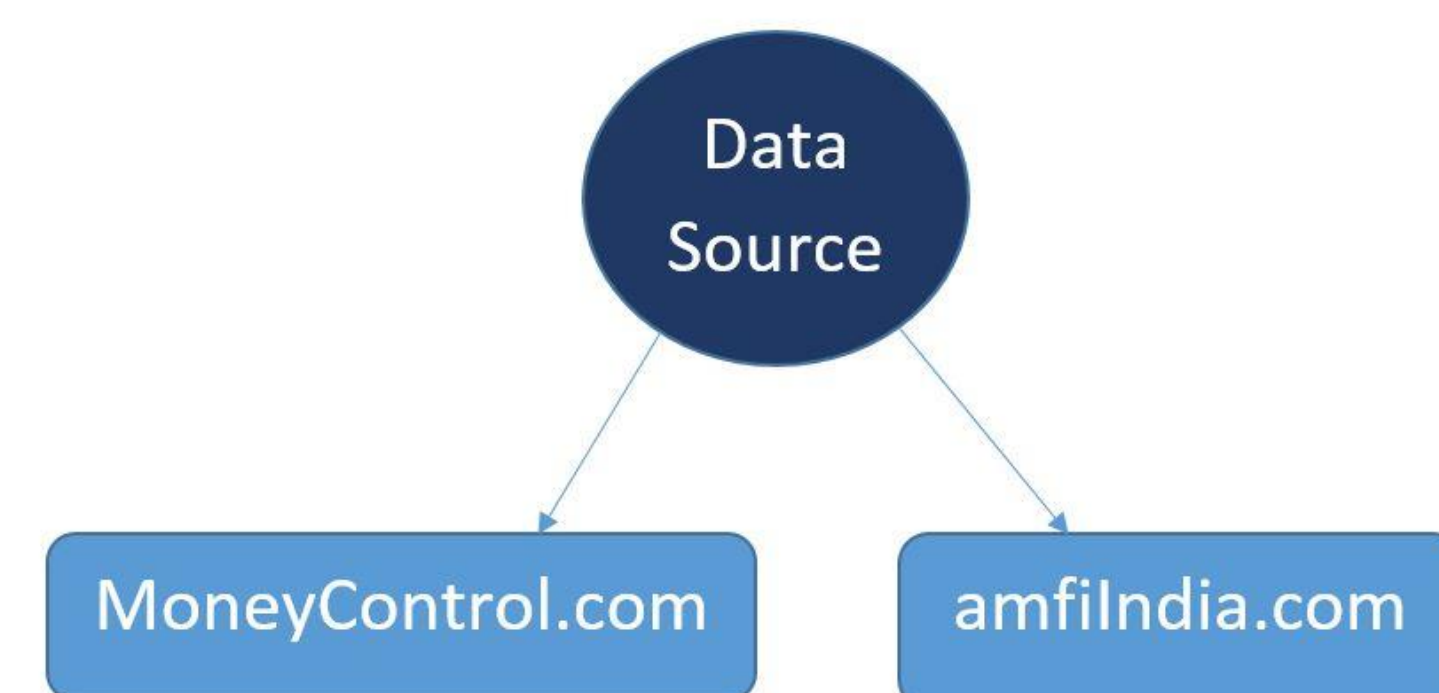
Motivation

Despite India being one of the most diverse and biggest financial market of the world, less than 10% of Indian households have invested in mutual funds due to their perceived high risk and lack of information on how mutual fund work. Our project tries to mitigate this problem by trying to predict the performance of mutual funds for short term and long term investments, thereby reducing the risk of bad investment.

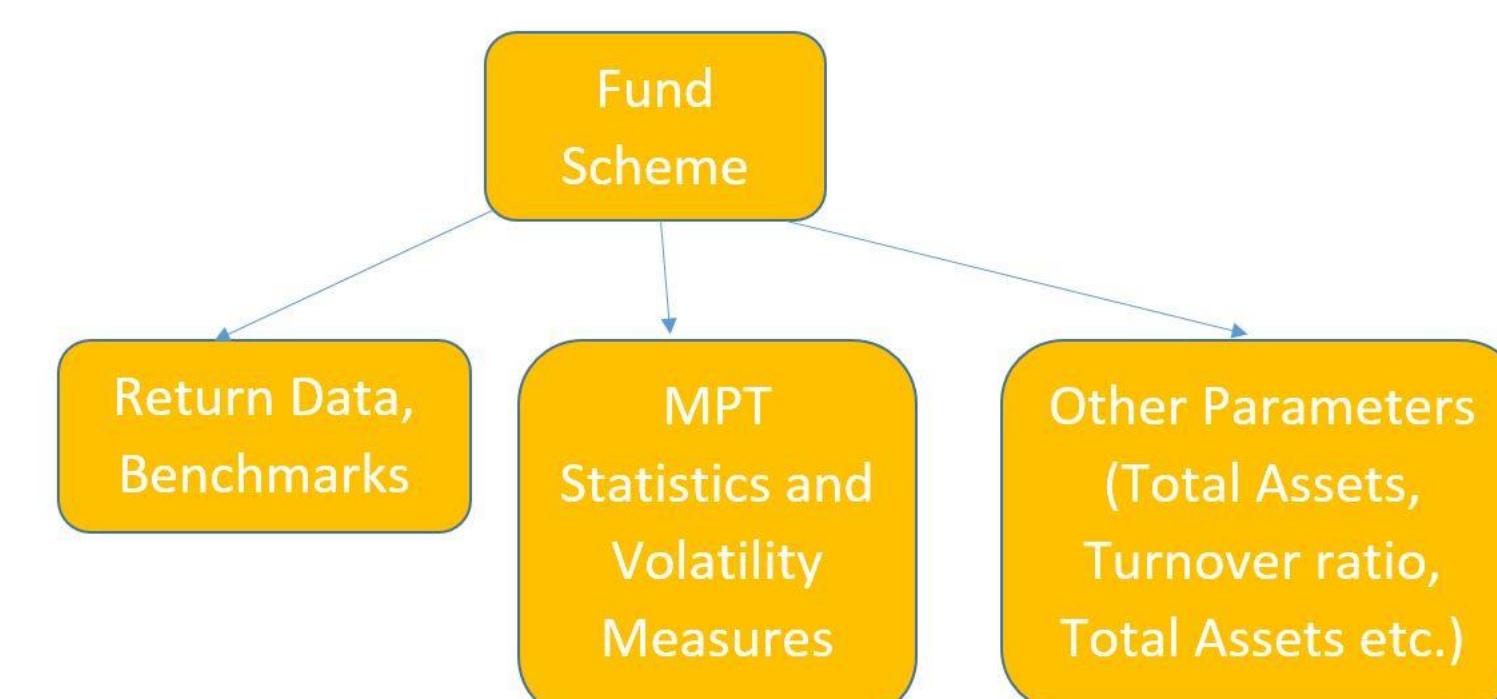
Goals

- Classify funds as good performing and bad performing for short term and long term investment
- Prevent clients and users from investing in funds that may perform poorly in future
- Maximize profits

Data Collection and Transformation



- As there's no publicly available dataset for Indian mutual funds we had to collect the data through web scraping the above sources.
- Selected top 10 Fund Families based on largest Asset Under Management (AUM). In total, these fund families consisted of 1296 funds, spanning different categories like Large, MidCap, Blend, Value etc.
- The following are the important information collected for each scheme under a given fund family:



Top 10 Mutual Funds Families

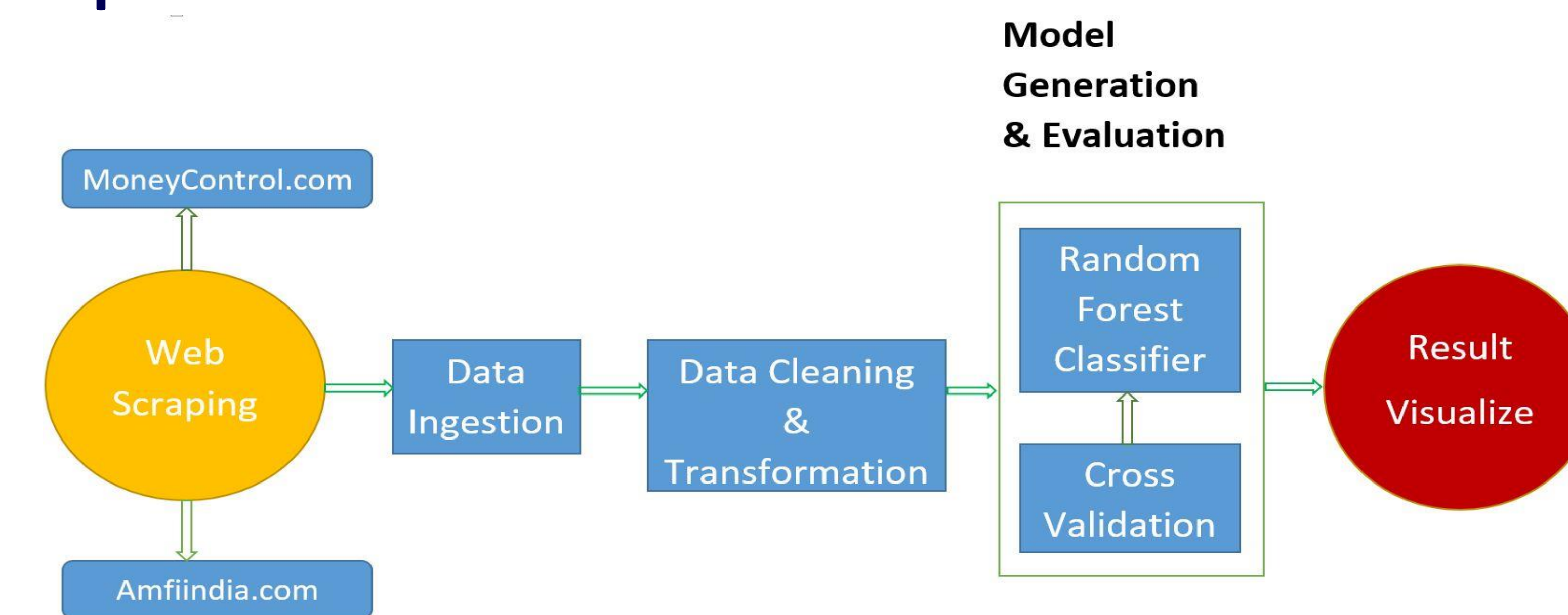


Mutual Fund Performance Prediction

Derived Metrics

- Risk Ratings based on MPT Statistics
- Fund performance relative to category performance
- Worst to Best Performance ratio

Pipeline

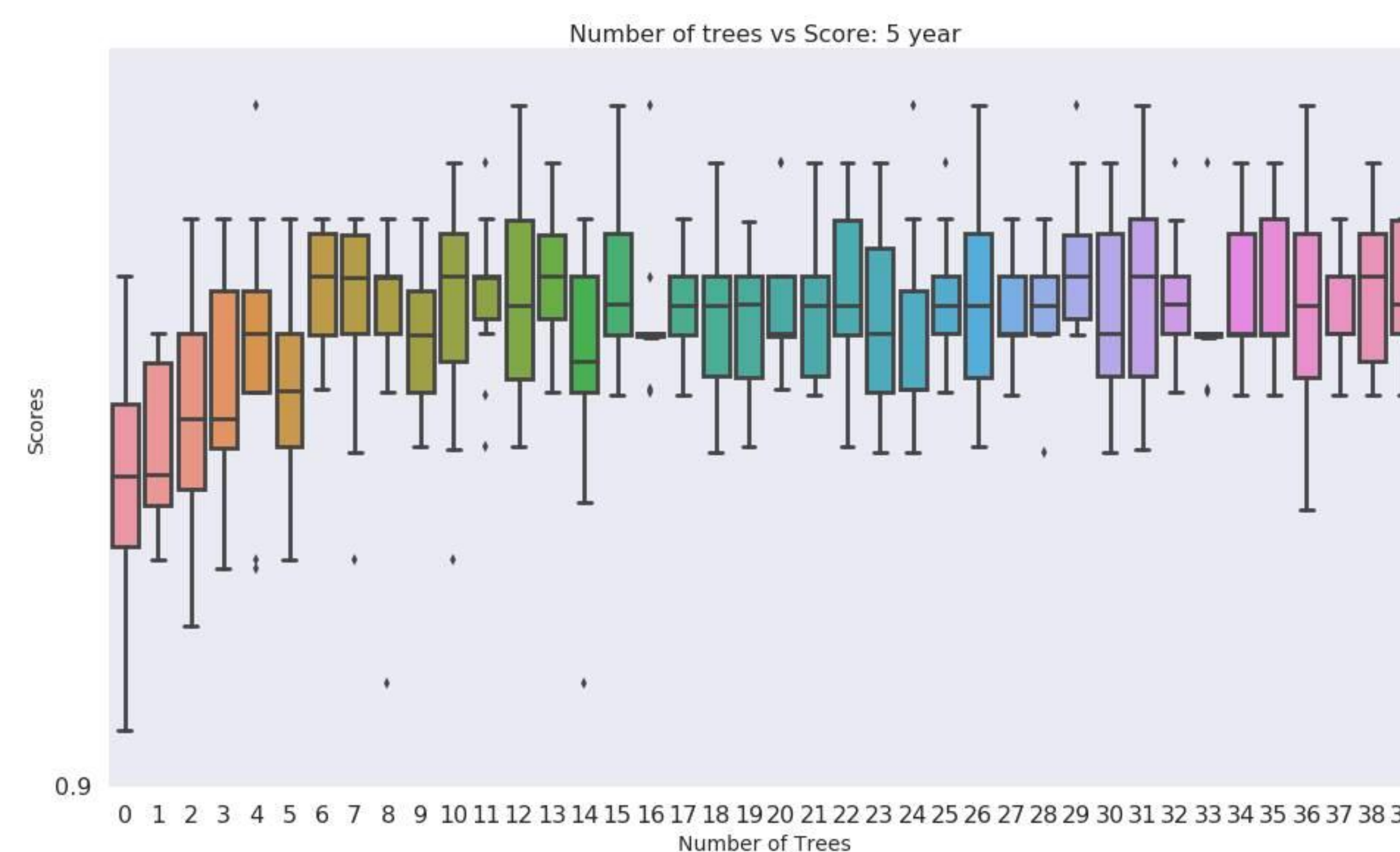


Model Generation

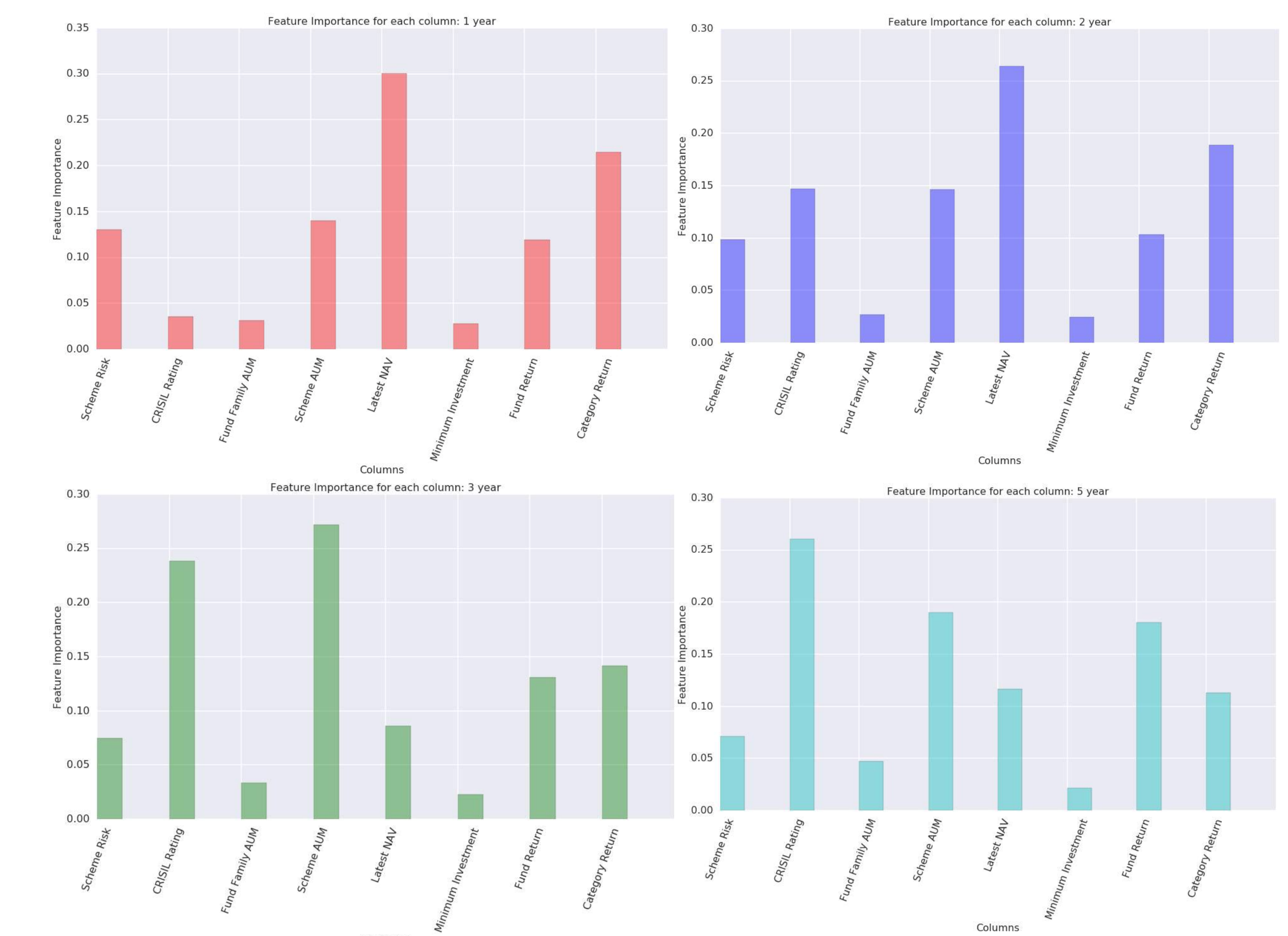
- We trained a RandomForest Classifier to classify the funds into the category of good funds and bad funds
- Classification done for funds in 1 years, 3 years, and 5 year buckets
- Cross Validation performed to determine the best value for number of estimators

Model Evaluation and Results

1. Scores of 10-folds cross validation (for 5 year investment)



3. Feature Importance



4. Classification Score

	1 year	3 year	5 year
Score	0.98	0.94	0.95

5. Good Performing Funds

Good Performing Funds for 1 year				
Mutual Fund Scheme	6m	1y	3y	5y
SBI Savings Fund - Direct (G)	4.2	8.8	9.4	-
Franklin (I) Savings Plus - IP (G)	3.9	8.7	9.0	9.0
Franklin (I) Savings Plus - DP (G)	4.2	8.6	9.3	-
Reliance Liquid - Cash -Direct (G)	4.1	8.4	8.9	9.0
Reliance Medium Term Fund (G)	3.9	8.4	8.8	-
Good Performing Funds for 3 years				
Mutual Fund Scheme	6m	1y	3y	5y
Birla SL Pure Value Fund (G)	-1.8	-2.0	30.0	17.6
Reliance Mid & Small Cap Fund (G)	-8.7	-9.7	26.0	14.5
DSP-BR Small & Mid Cap -RP (G)	-2.1	-4.1	25.6	14.7
Birla Sun Life Midcap Fund (G)	-6.4	-4.9	23.8	13.9
IDFC Premier Equity - Regular (G)	-5.2	-9.0	22.5	16.3
Good Performing Funds for 5 years				
Mutual Fund Scheme	6m	1y	3y	5y
Birla SL Pure Value Fund (G)	-1.8	-2.0	30.0	17.6
SBI Emerging Busi (G)	0.1	-2.5	18.6	17.0
Reliance Mid & Small Cap Fund (G)	-8.7	-9.7	26.0	14.5
Birla Sun Life Midcap Fund (G)	-6.4	-4.9	23.8	13.9
ICICI Pru Balanced Adv (G)	-2.1	0.2	15.2	12.8

Code:

<https://ec2-52-34-246-232.us-west-2.compute.amazonaws.com:8888/notebooks/MoneyControl.ipynb>