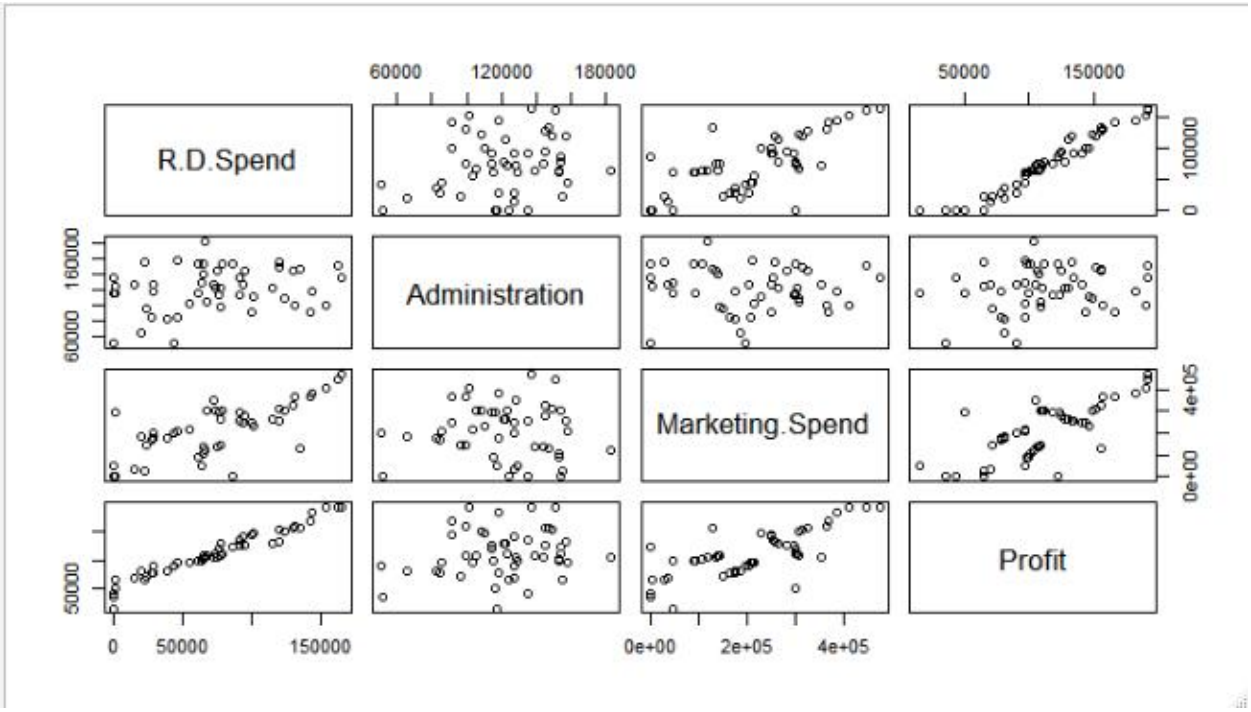
Neural Network

Example-50 startups dataset

```
'data.frame':   50 obs. of  5 variables:
 $ R.D.Spend      : num  165349 162598 153442 144372 142107 ...
 $ Administration : num  136898 151378 101146 118672 91392 ...
 $ Marketing.Spend: num  471784 443899 407935 383200 366168 ...
 $ State          : Factor w/ 3 levels "California","Florida",..: 3 1 2 3 2 3
1 2 3 1 ...
 $ Profit         : num  192262 191792 191050 182902 166188 ...
```

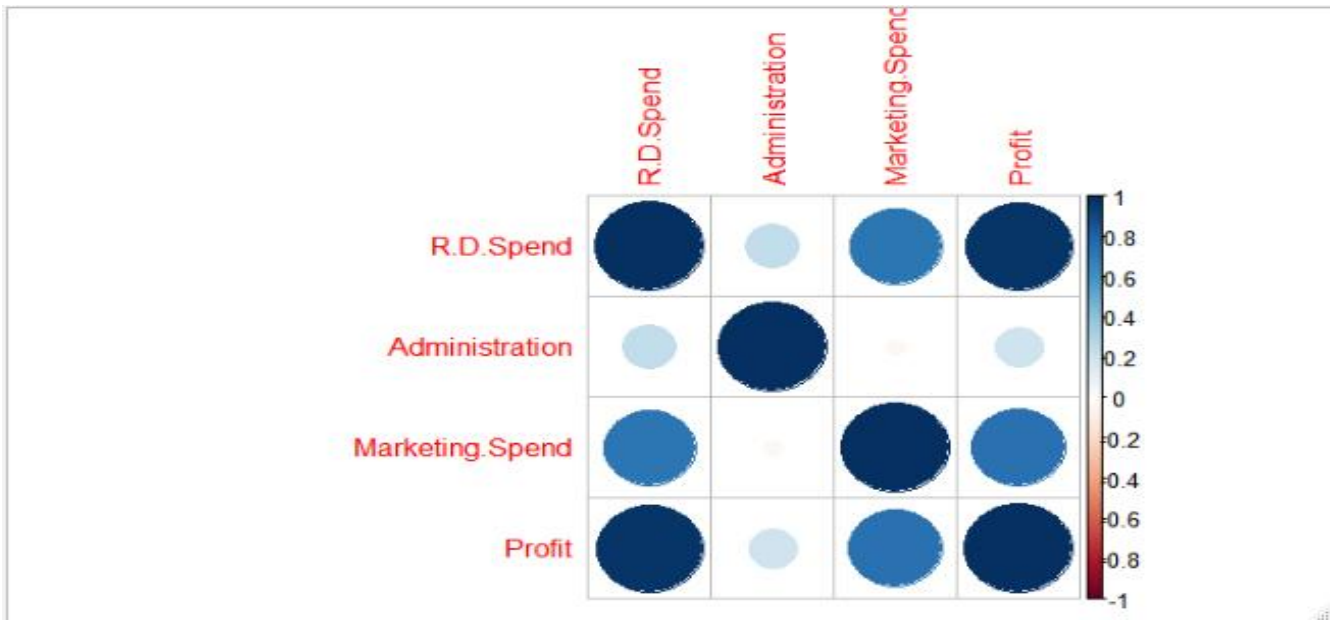
One variable is factor and remaining all are numeric and our target variable is Profit which is numeric and continues in nature.

Pairs Plot ➔



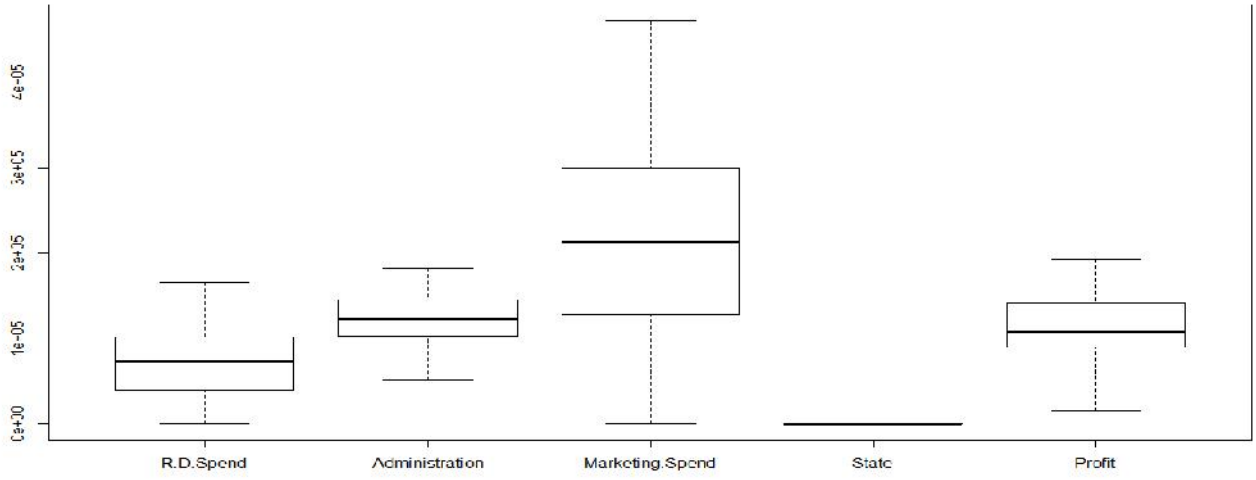
From the above plot, R.D.Spend and Marketing.Spend are positively correlated with Profit and rest are showing week correlation among themselves with each other.

Correlation Plot ➔



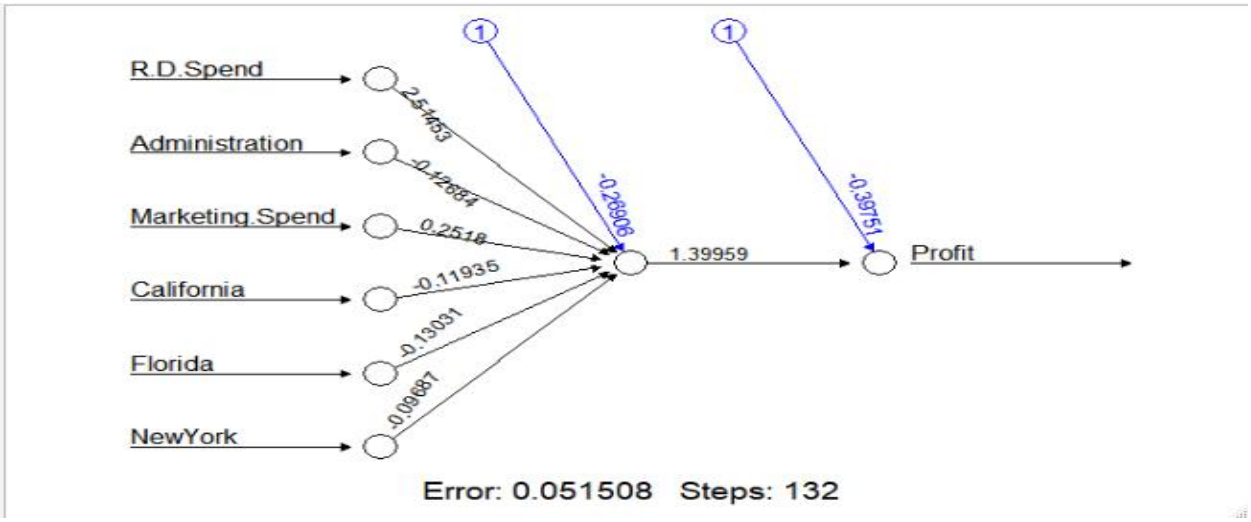
Ignoring diagonal elements.

Box Plot ➔



From the above boxplot, there are no outliers in dataset.

Model-1 ➔

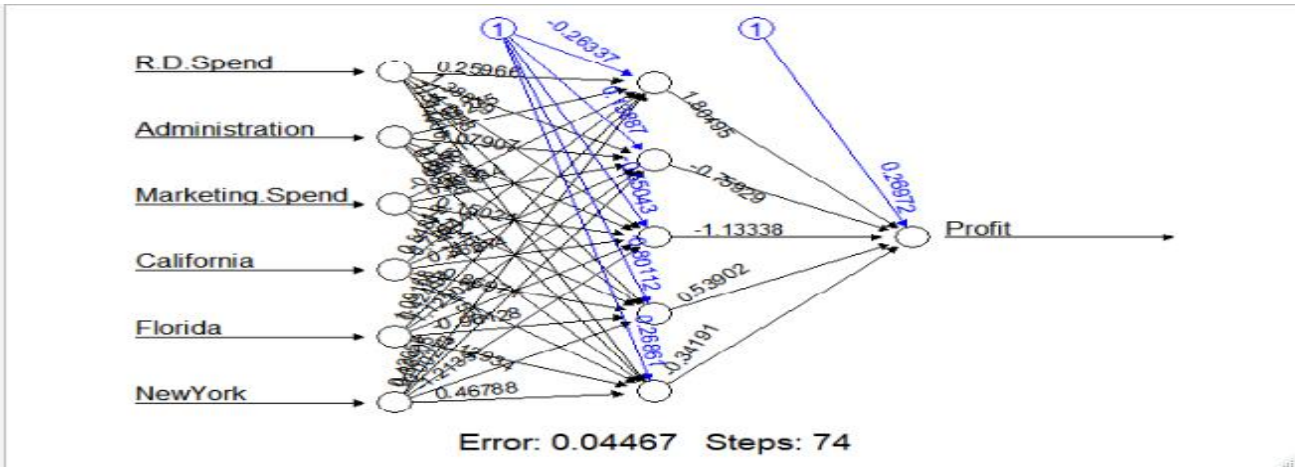


In model-1 there are no hidden layer.

Accuracy ➔0.9563

Accuracy is high due R.D.Spend because it is highly correlated with the profit.

Model-2 ➔



In this model considered 5 hidden layers and accuracy improved slightly to 0.96

So, we will consider Model-2 as our final model because in this job is done only in 74 steps while in Model-1 it takes 132 so my computational speed will decrease.