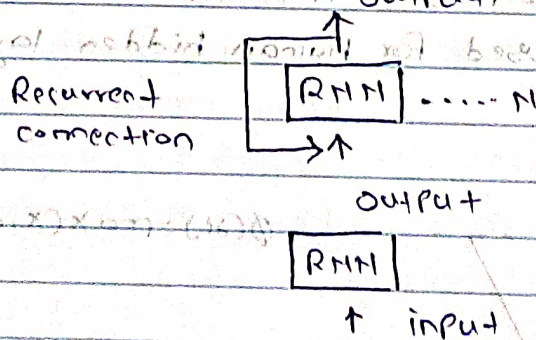Assignment 4.

Title :- use the google Stock Price dataset & design a time series analysis and Predictn System using RNN

Objective :- Student should be able to classify the google stock Price dataset & should be able to design time series analysis with help of RNN.
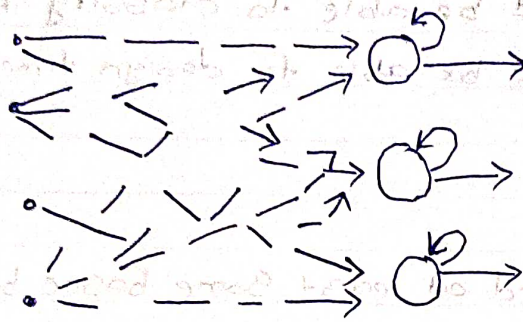
Theory :

- It helpful to understand at least some basic before getting implementatn. At high level a RNN Process sequence whether daily stock Price sentences or Sensors measurement

• one element at time while retaining a memory (called Stack) what has come Previously Sequence

• Recurrent mean o/p at current time step become i/p next step

• model consider not current i/p but what remember about Procedding element

output

Recurrent
connection
```
       ↑
   [RNN] ..... N
     →↑
```
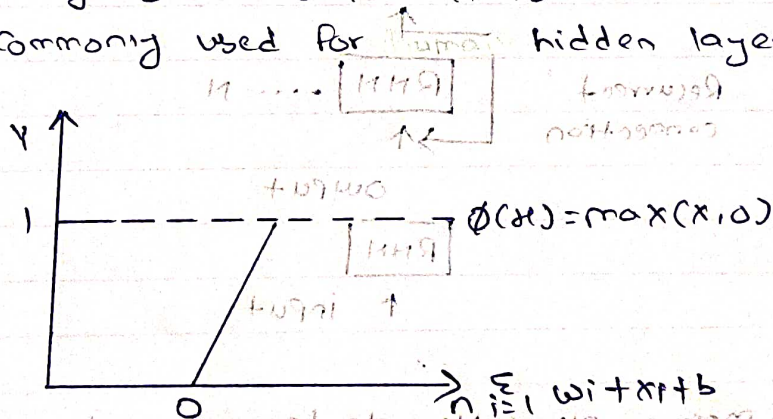
output

```
   [RNN]
    ↑  input
```

• This memory allow Hlw to learn long-term dependencies Sequence which mean can have context account when making Prediction

• A RNN designed mimic human ways of Processing sequence we consider entire Sea while forming a response instead of words by themselves.

∘ However RNN can model collection of records (i.e time collect")
So that each Pattern can be assumed to dependent on
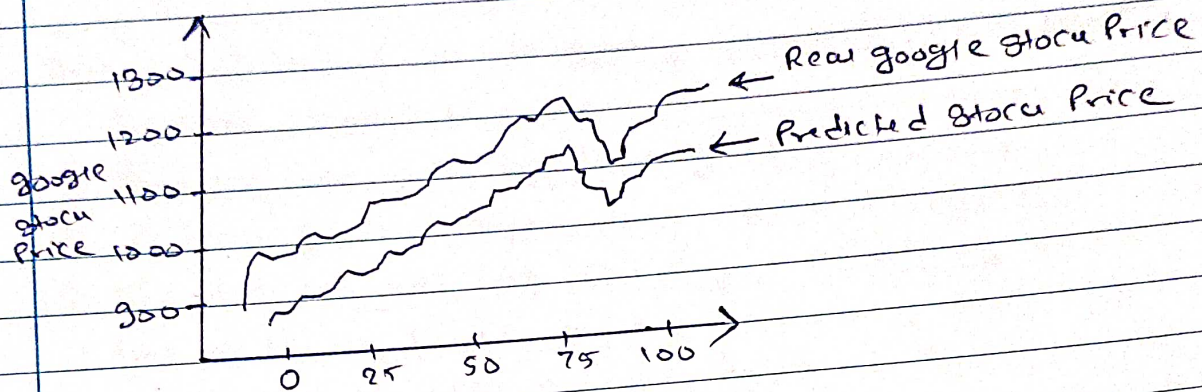Previous one

Recurrent neuroll Nlw

- The RNN are often used for Sentiment analysis text
  mining & image captioning. Recurrent Neural Nlw also
- Neural Nlw address statistic Problem - live Predicting
  cost of Stock during month or quarter.
∘ With the help of Relu is most generally used activation
  function. It gives o/P of x if x is Positive & zero otherwise
  RELU is commonly used for hidden layer

$$\phi(x) = max(x, 0)$$

$$\sum_{i=1}^{n} w_i + x_i + b$$

- The globe of Past auga Sequential data used by Apple's Siri &
  google's voice Search first augo. That remember it i/P due to
  Internal memory
- Due to internal memory which makes it Perfectly Suited for ML
  rearning Problem involvs Sequential data
- Therefore they are type of artificial neural Nlw which Sequential

data or time series data.

- However difference b/r, CNH & RNM ability Process temforal informat).

Google Stock Price Prediction

• Since RNM has advantage of being able to process time series data it is very suitable forcasting Stock.

• Therfore we use RNM Nlw & use google Stock Price Past ten yo data set Predict experiments show Predictn Predict experiments show that Predictn accuracy over 95% & the Roll close to 0.1% only

- The google trends investor sentiment index append to Predict customer sector outperformance also with help of graph

Conclusions-

Therfore with help of RNM Nlw theory & Practical analysis usin google Stock Price datoget the time series analysis is implon as well as Predicted using RNM methedology

ⓒ

Symody