

x

y

not interested at



this time

will let you know if it changes



in the future

≡ Google Translate

[Text](#) [Documents](#)

ENGLISH - DETECTED

ENGLISH

SPANISH

FRENCH



HINDI

ENGLISH

SPANISH



did you



क्या तुमने किया ✓



7 / 5000



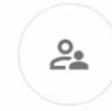
kya tumane kiya

[Send feedback](#)

History



Saved



Contribute

x Rudolph Smith bought 1000 shares of tesla Inc. in March 2020

y Person Rudolph Smith Company bought 1000 shares of Company tesla Inc. in time March 2020

NER: Named Entity Recognition



X

y

auto complete

not interested at



this time

translation

how are you?



क्या हाल है?

NER

Rudolph Smith bought 1000 shares of tesla Inc. in March 2020



Rudolph Smith bought 1000 shares of tesla Inc. in March 2020

Person

Company

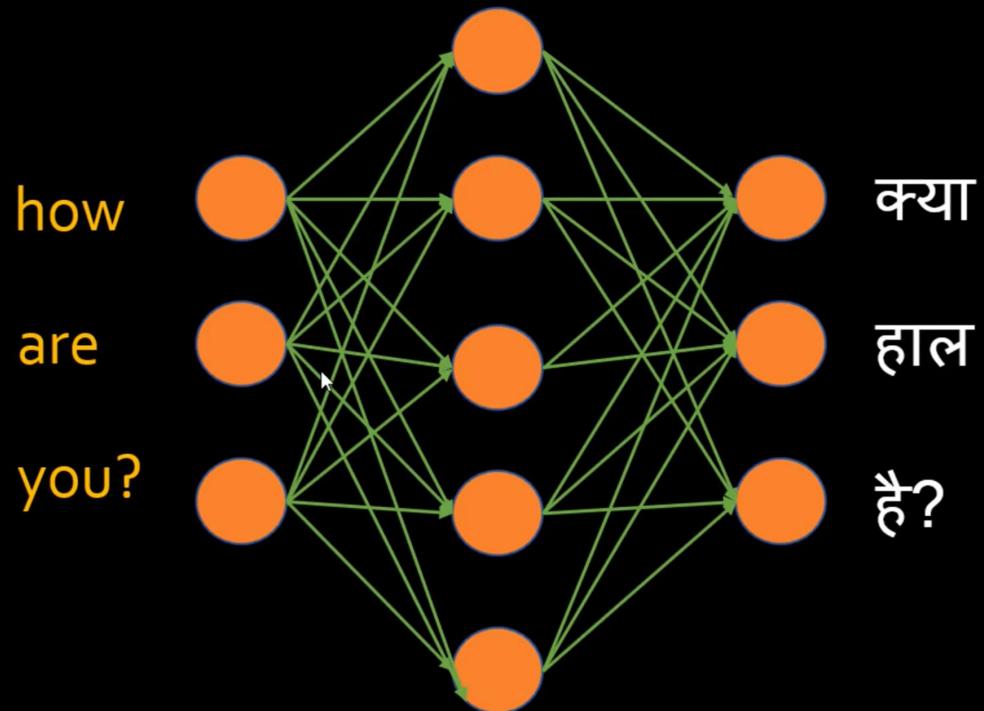
time

Sentiment
Analysis

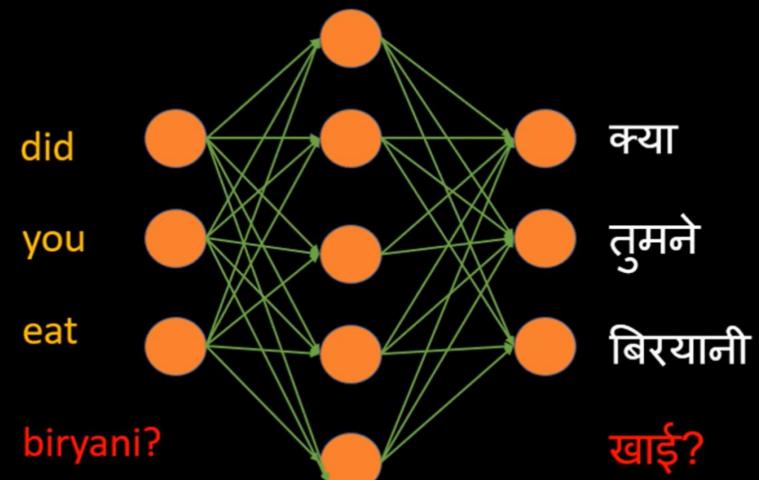
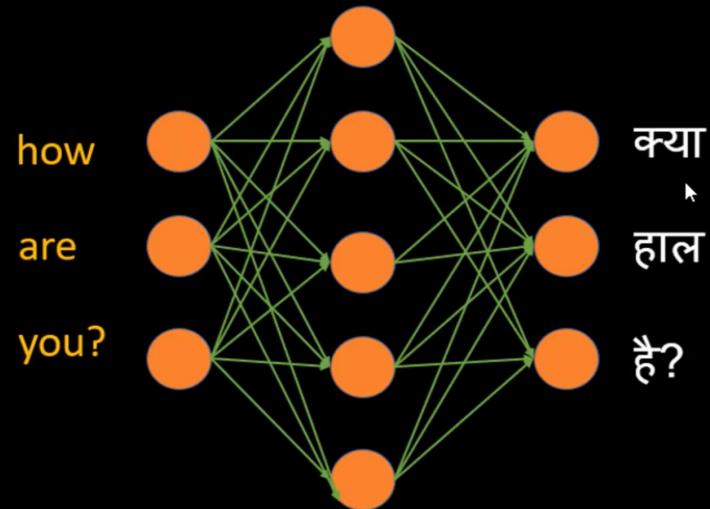
Not only the fan was expensive,
but it was broken when it
arrived.



Simple Artificial Neural Network?



Issue # 1: No fixed size of neurons in a layer



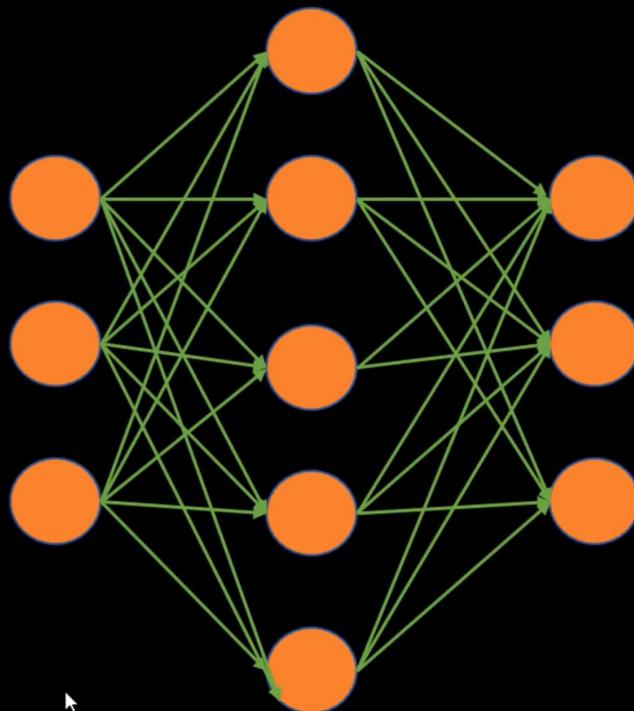
Issue # 2: Too much computation

25000 words in vocabulary

how → [0,0,0,...,1,0,0,...,0]

are → [0, 1,0,0,0,..0,0,...,0]

you? → [0, 0,0,0,..0,0,1,0,0]



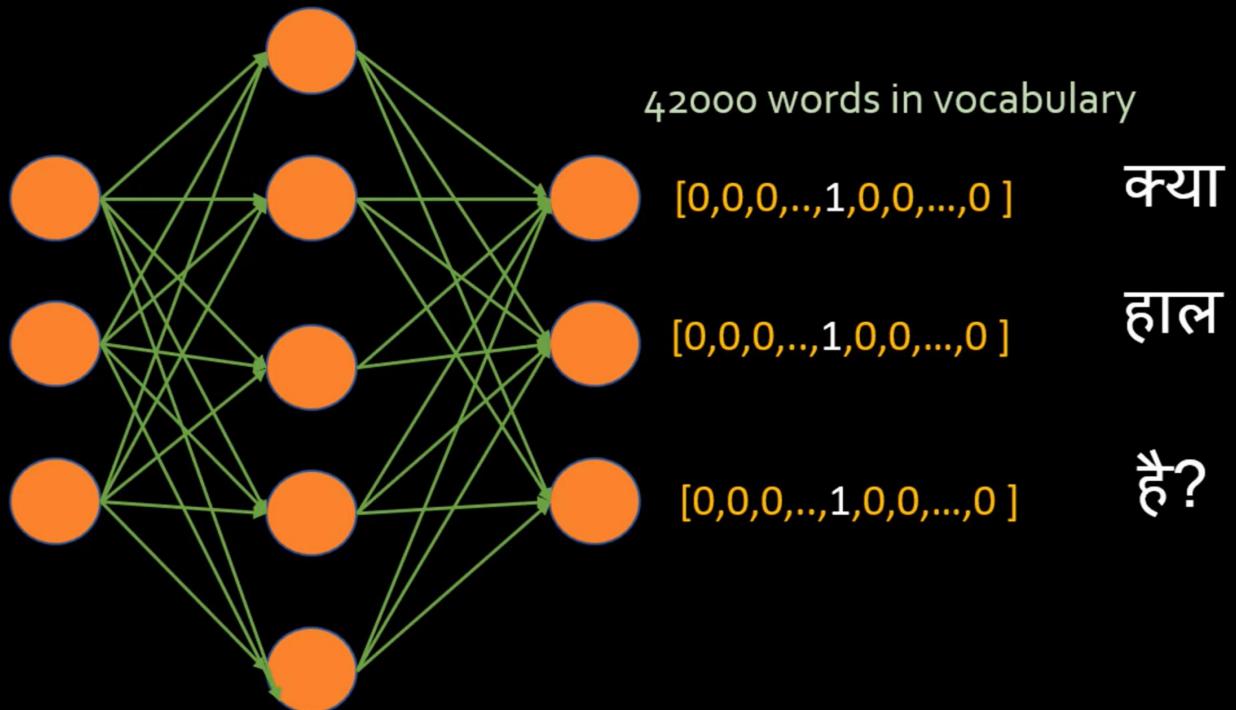
Issue # 2: Too much computation

25000 words in vocabulary

how → [0,0,0,..,1,0,0,...,0]

are → [0, 1,0,0,0,..0,0,...,0]

you? → [0, 0,0,0,..0,0,1,0,0]

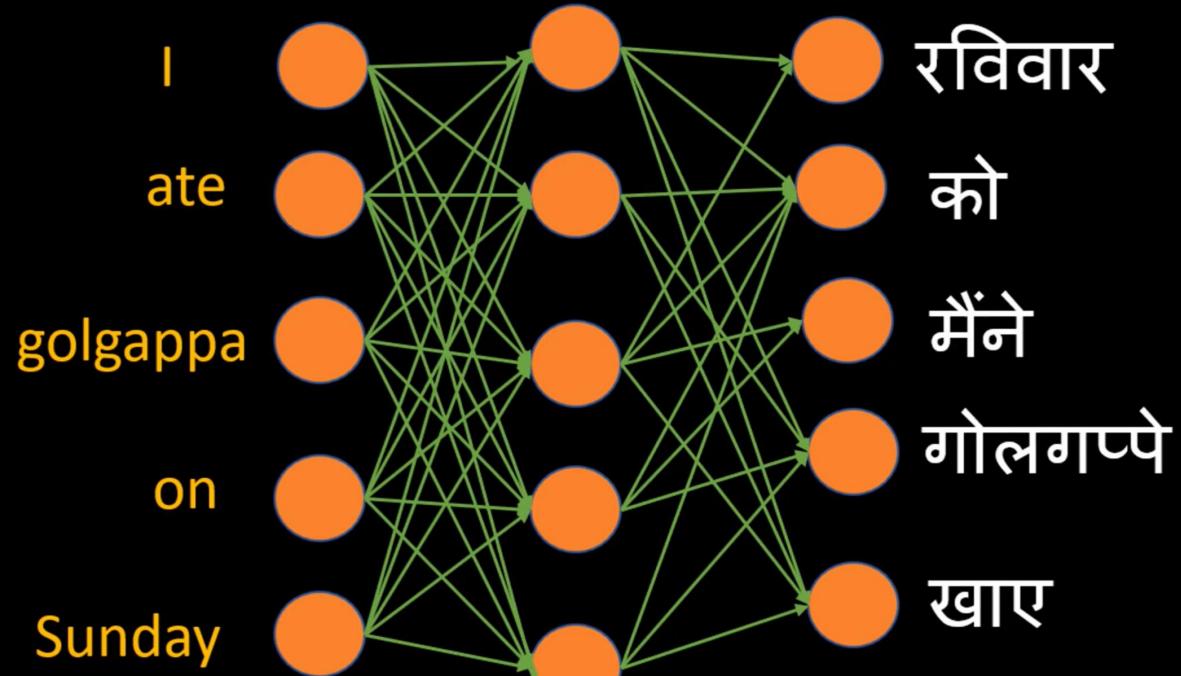




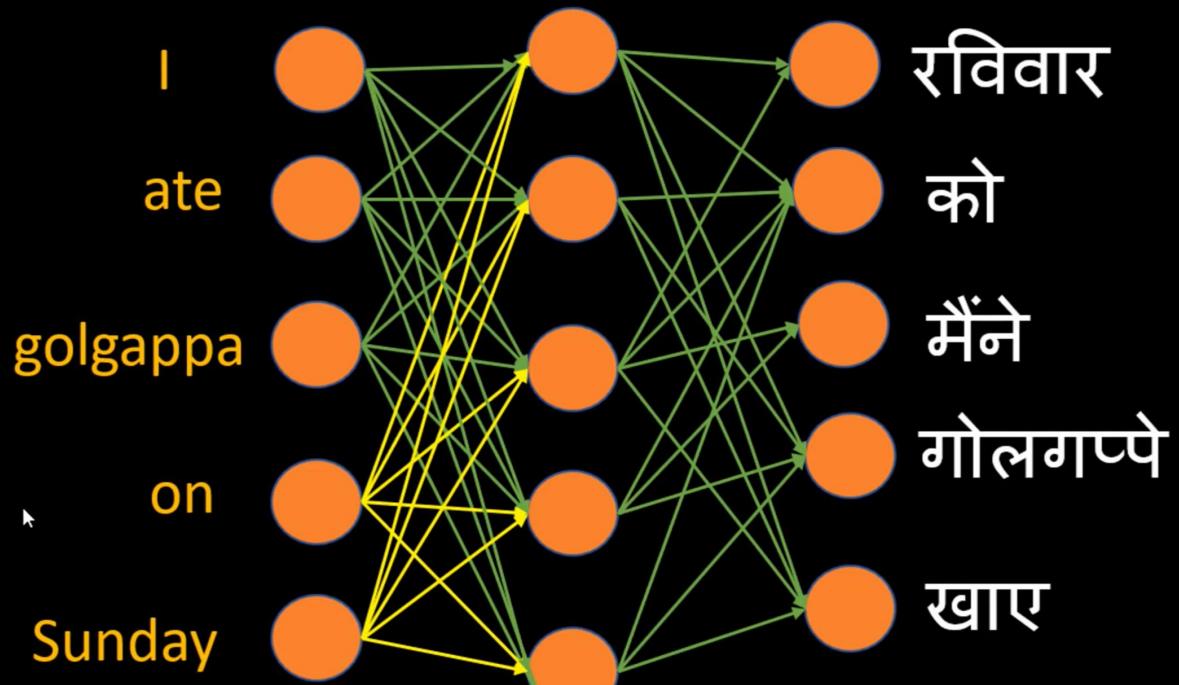
On sunday I ate golgappa

I ate golgappa on Sunday

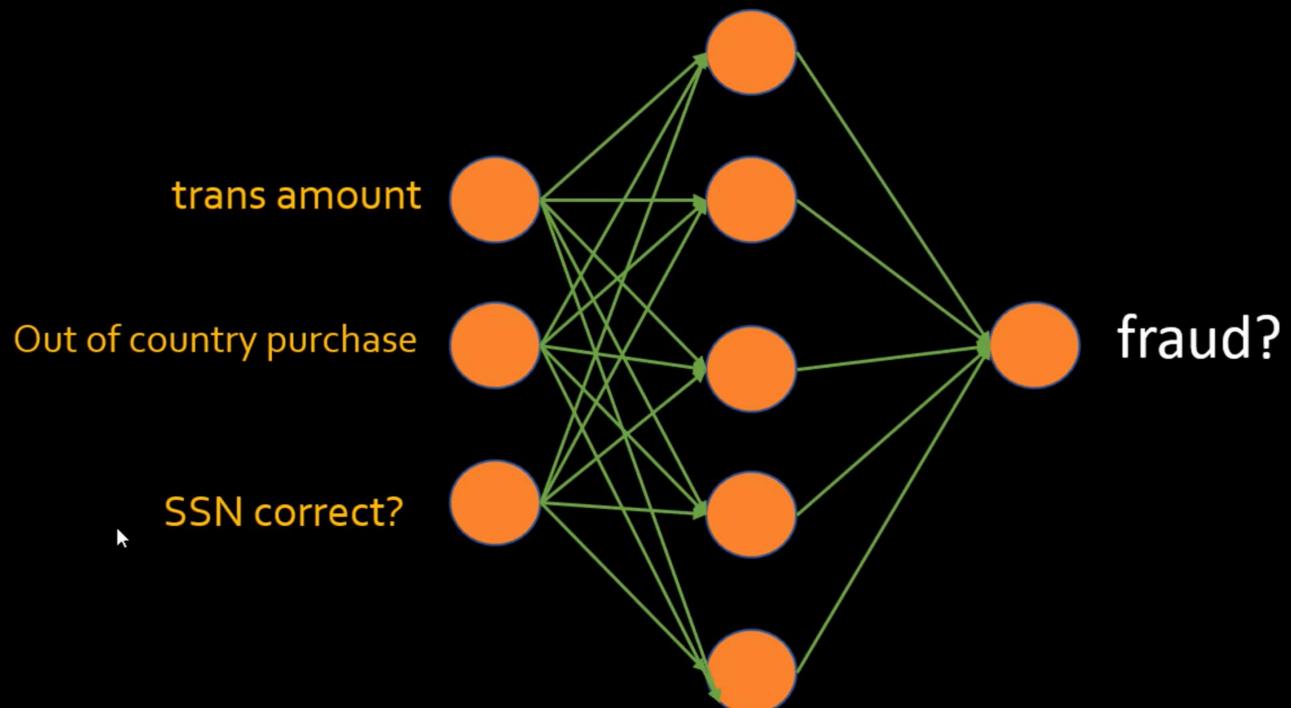
रविवार को मैंने गोलगप्पे खाए



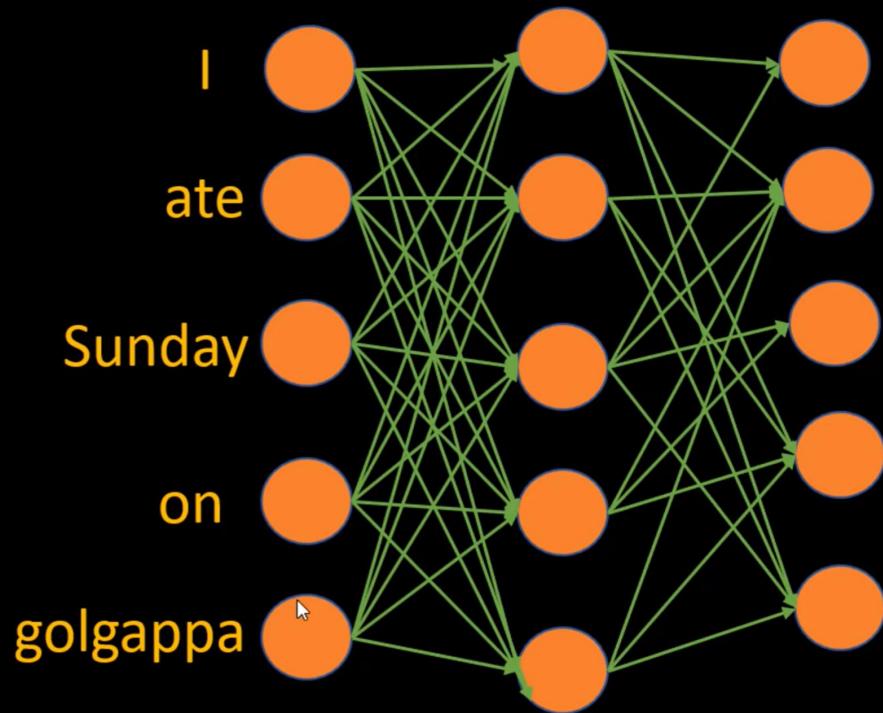
Issue # 3: Parameters are not shared



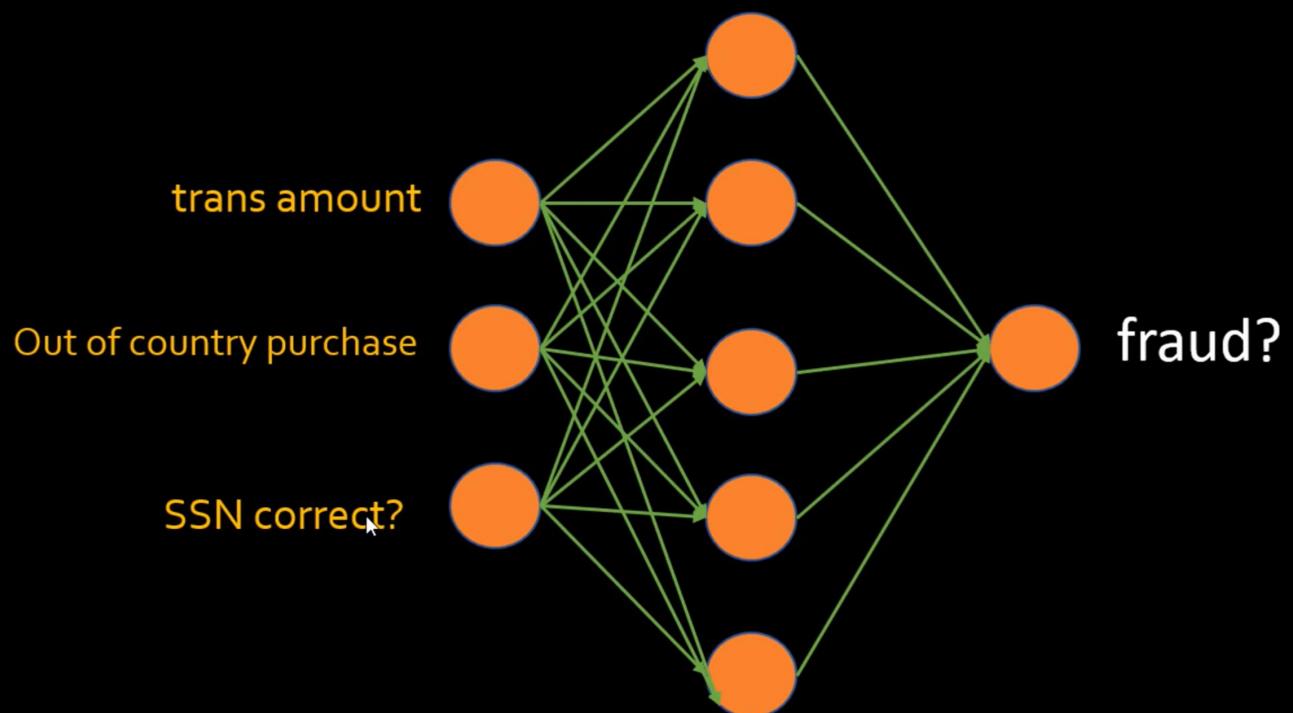
Is transaction fraud ?



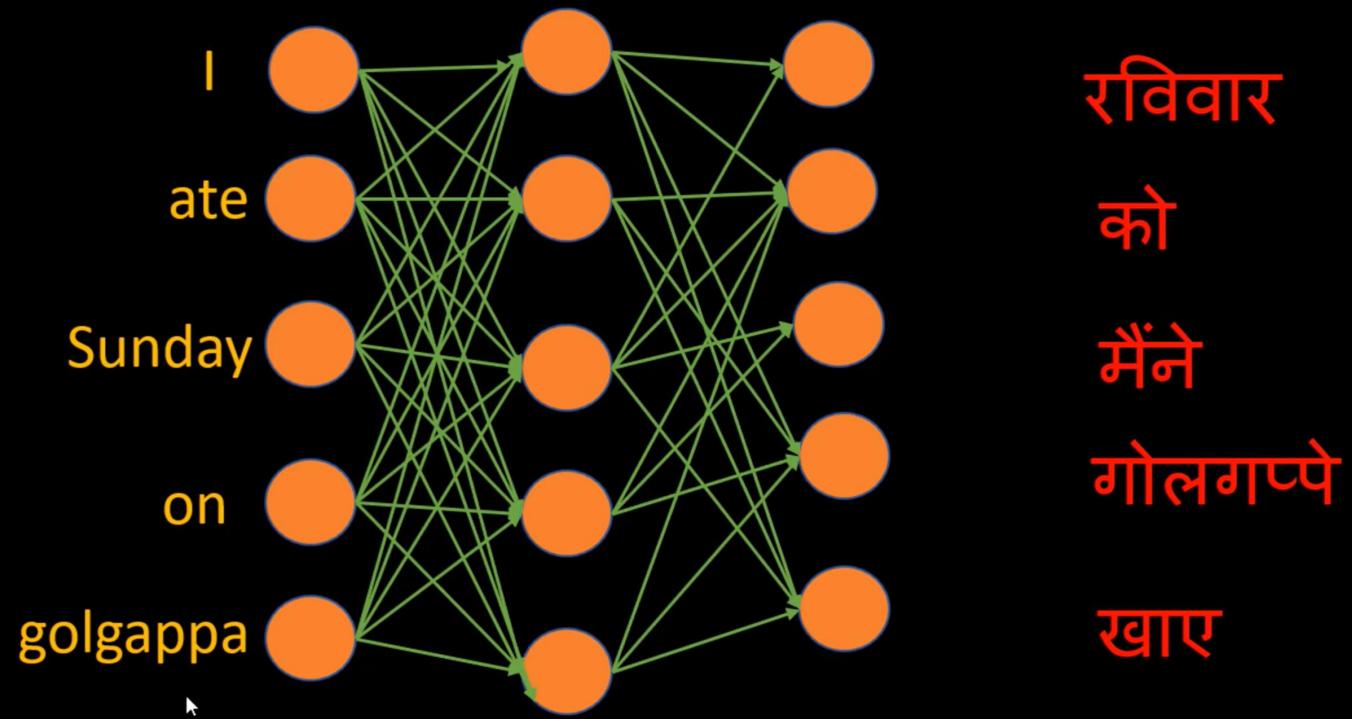
रविवार
को
मैंने
गोलगप्पे
खाए



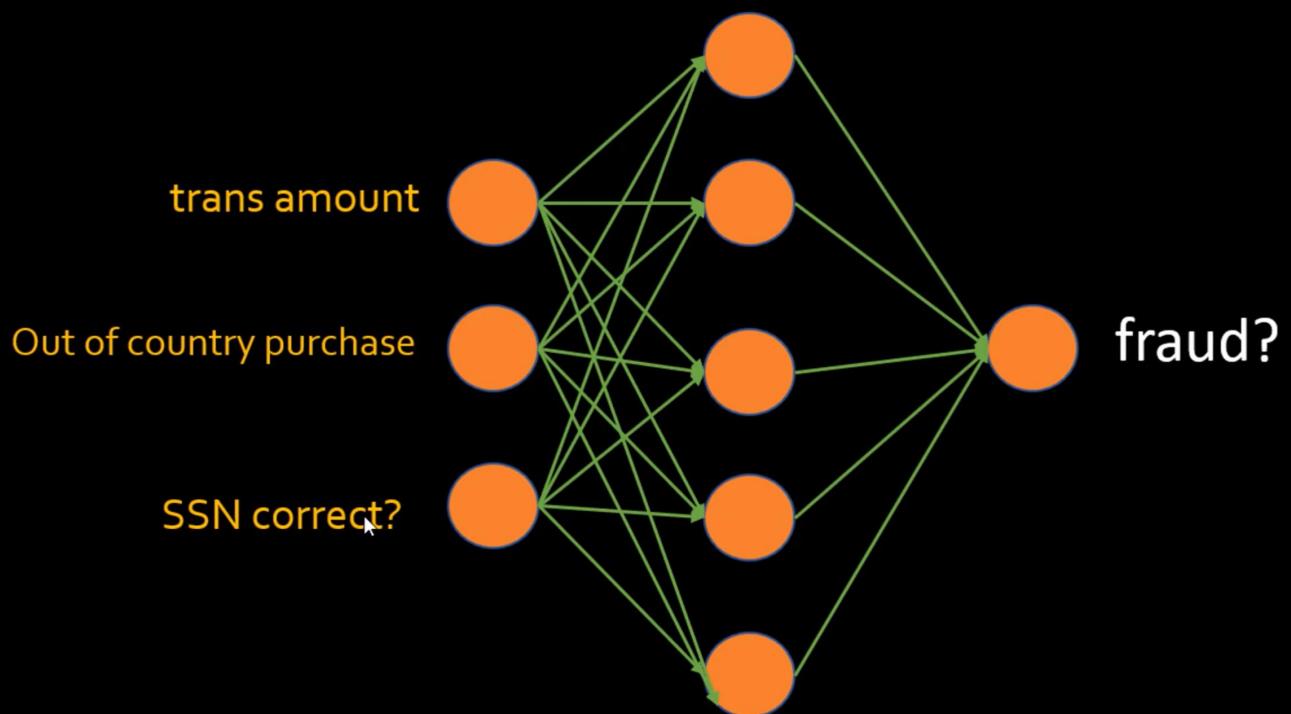
Is transaction fraud ?



Sequence in which input is supplied is not important

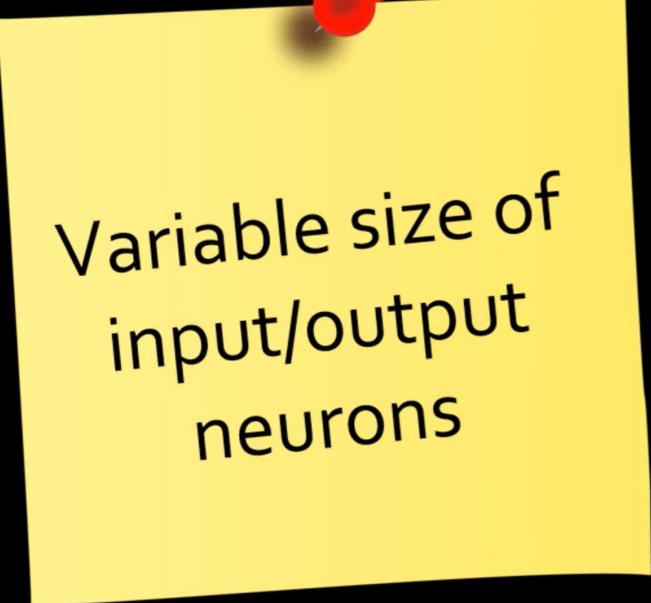


Is transaction fraud ?



Sequence in which input is supplied is not important

3 Issues using ANN for sequence problems



Variable size of
input/output
neurons



Too much
computation



No parameter
sharing

Named Entity Recognition



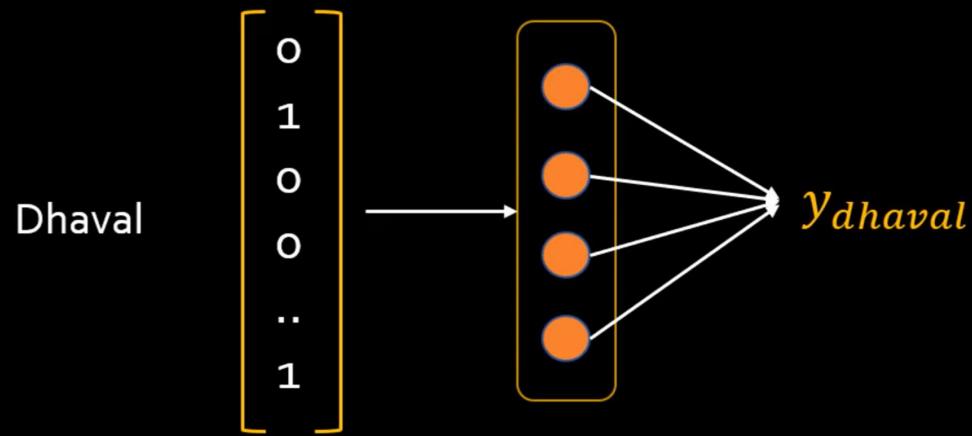
Dhaval loves baby yoda



person
Dhaval loves baby yoda
1 0 1 1

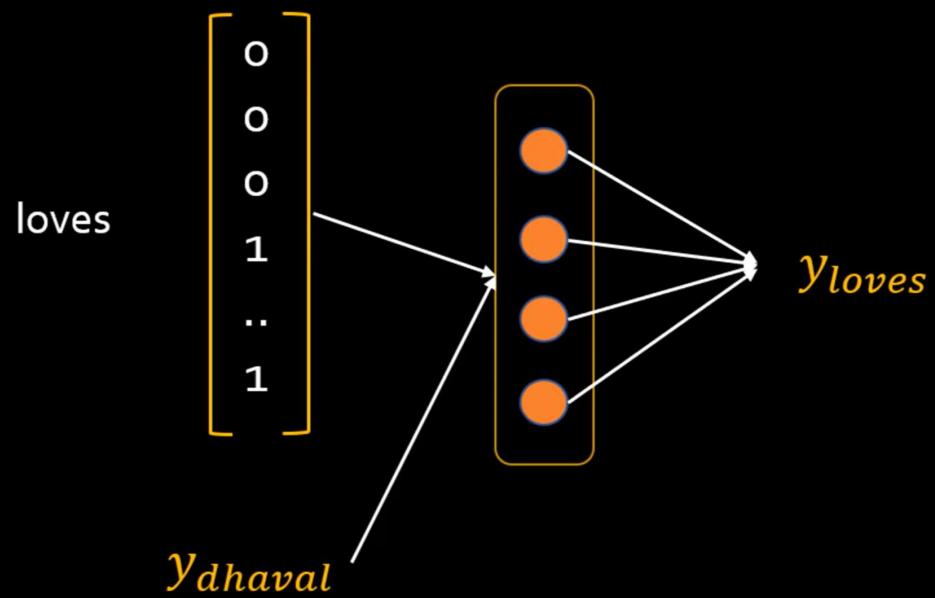
Named Entity Recognition

Dhaval loves baby yoda



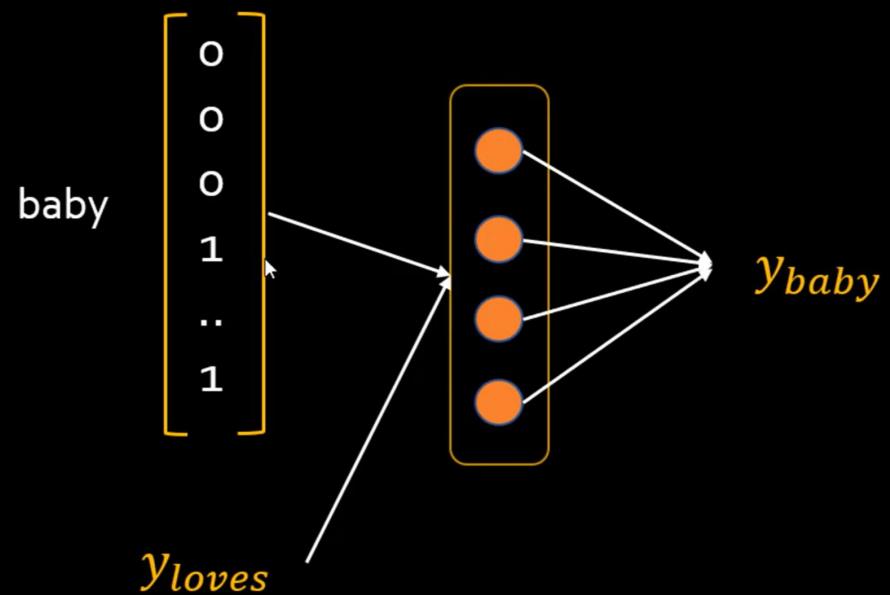
Named Entity Recognition

Dhaval loves baby yoda

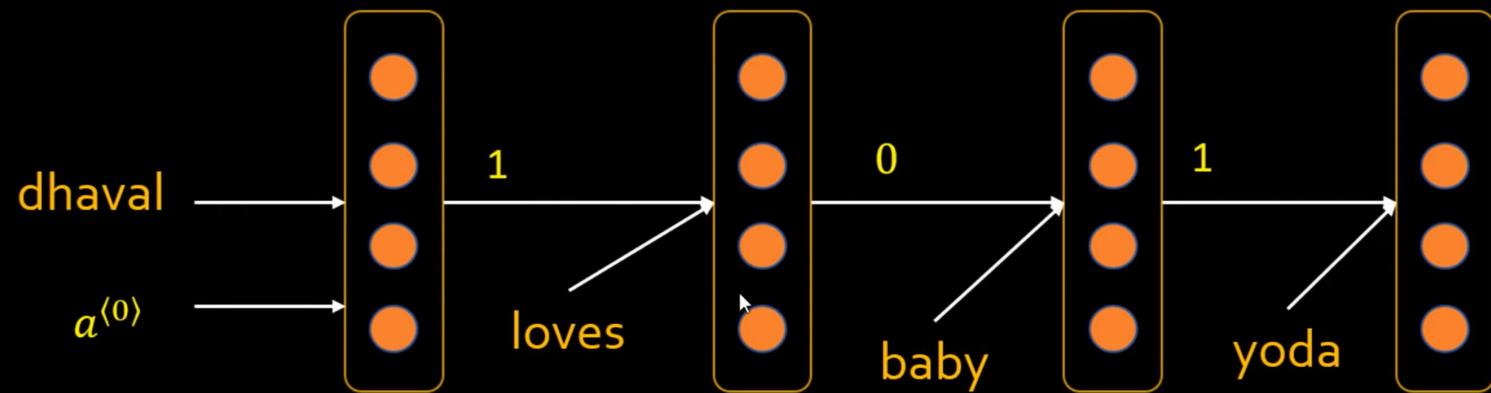


Named Entity Recognition

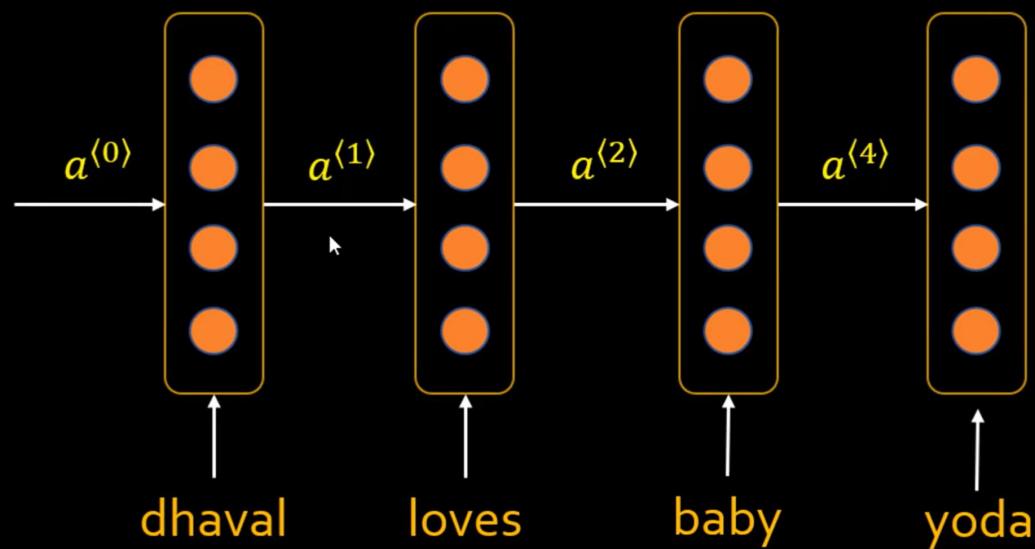
Dhaval loves baby yoda



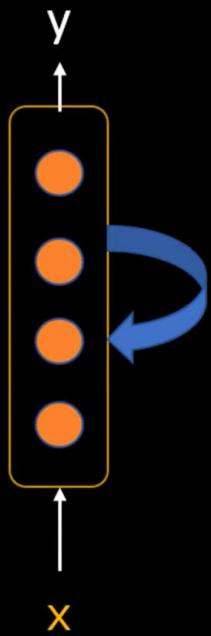
Named Entity Recognition: once network is trained



Named Entity Recognition



Generic Representation of RNN





Training : Named Entity Recognition (NER)

X

y

Dhaval loves baby yoda

1 0 1 1

Bob told Ahmed that pizza is delivered

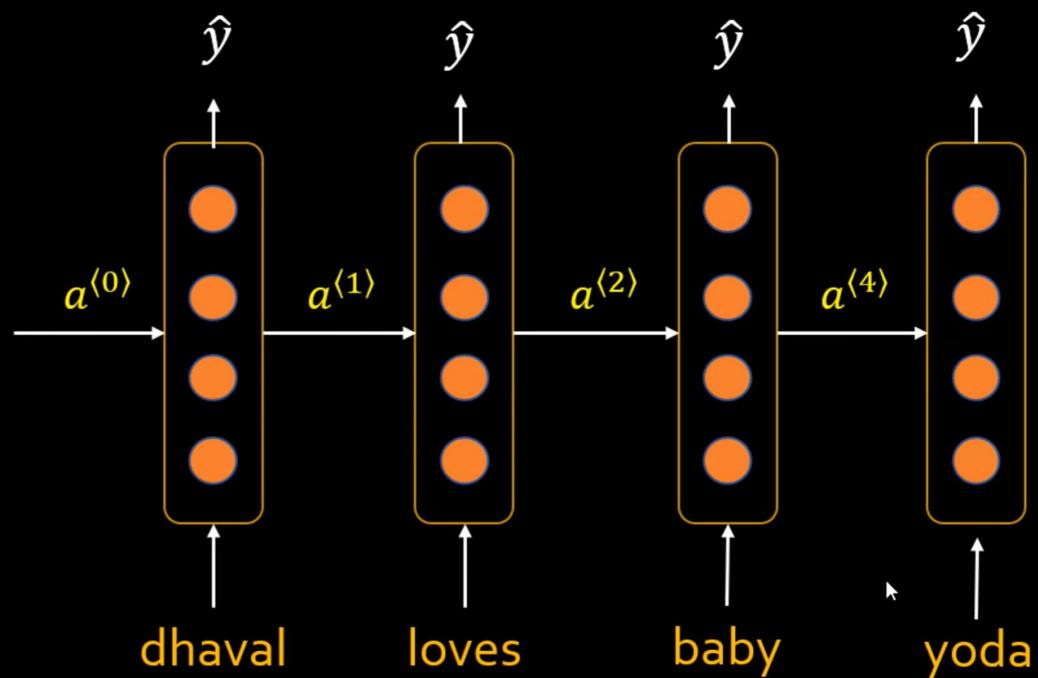
1 0 1 0 0 0 0

Ironman punched on hulk's face

1 0 0 1 1

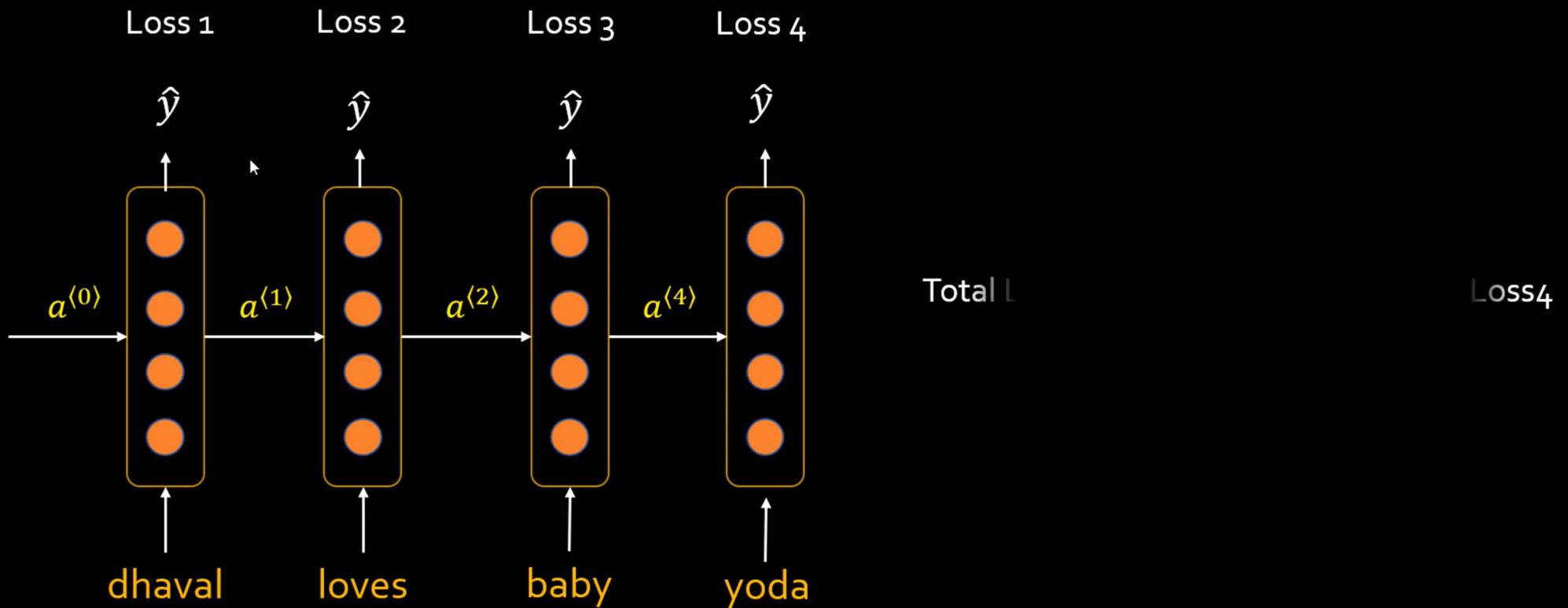
Training

Dhaval loves baby yoda → 1 0 1 1



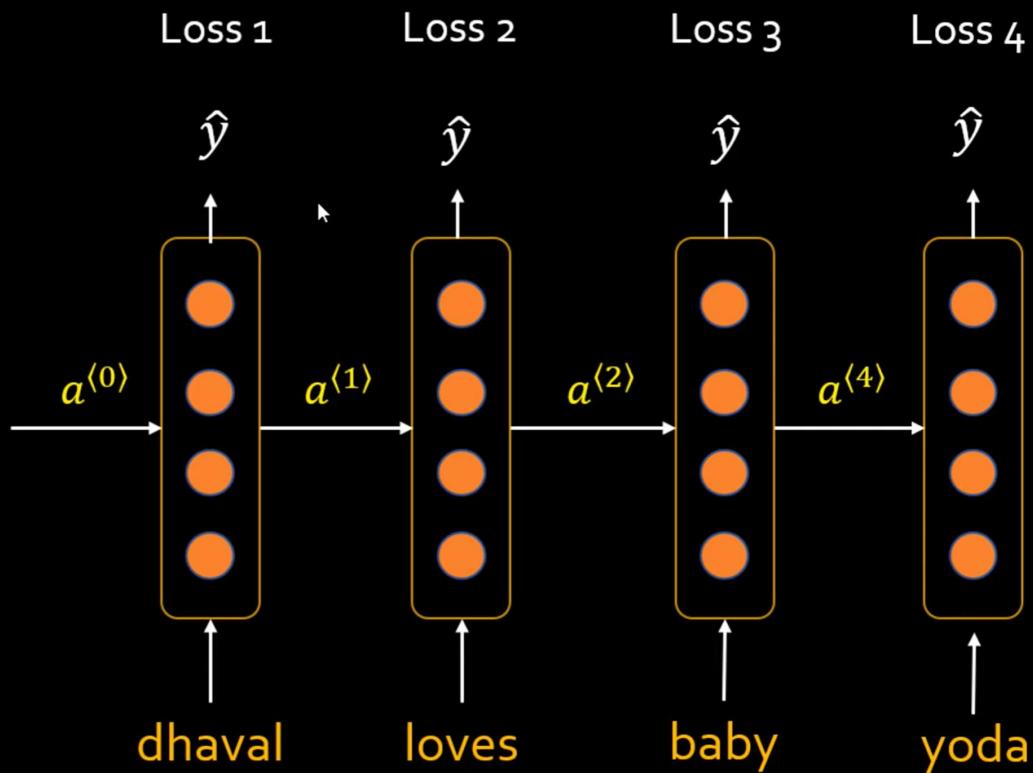
Training

Dhaval loves baby yoda → 1 0 1 1



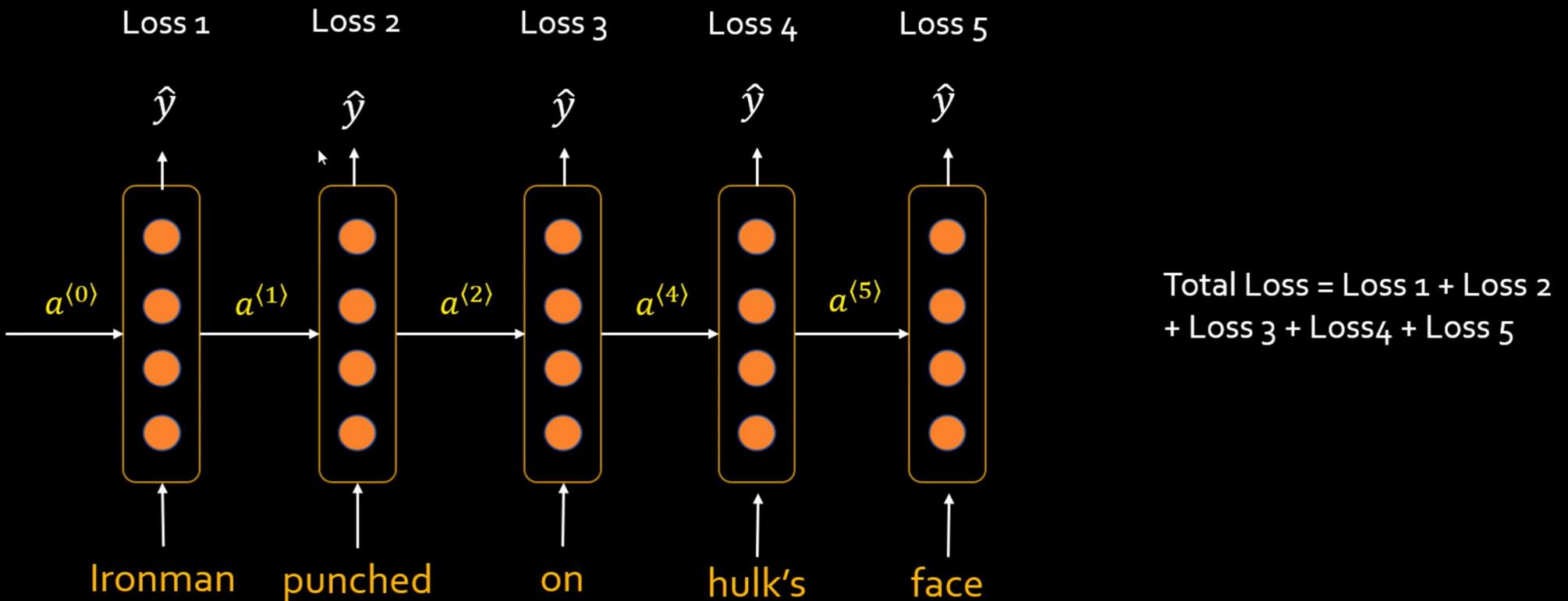
Training

Dhaval loves baby yoda → 1 0 1 1



Training

Ironman punched on hulk's face → 10010



Language translation

English

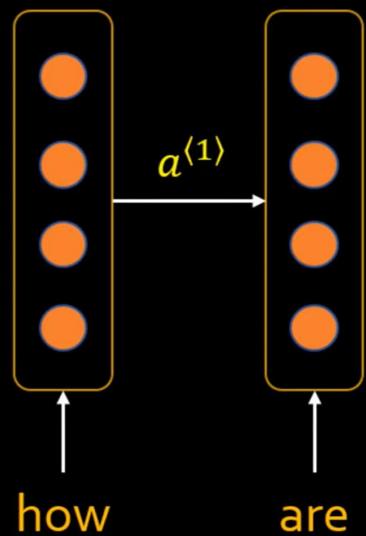
how are you? क्या हाल है?



how

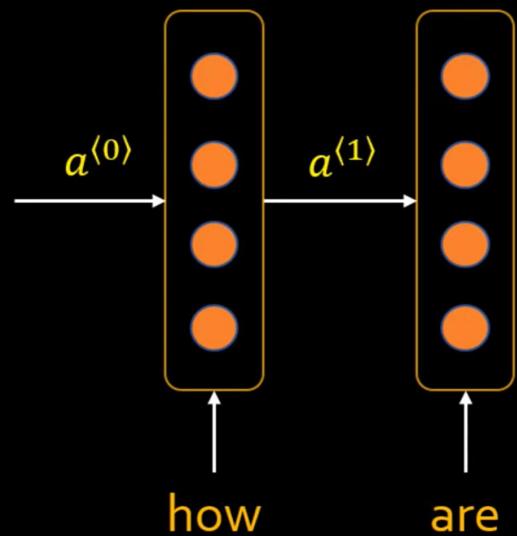
Language translation

how are you? क्या हाल है?



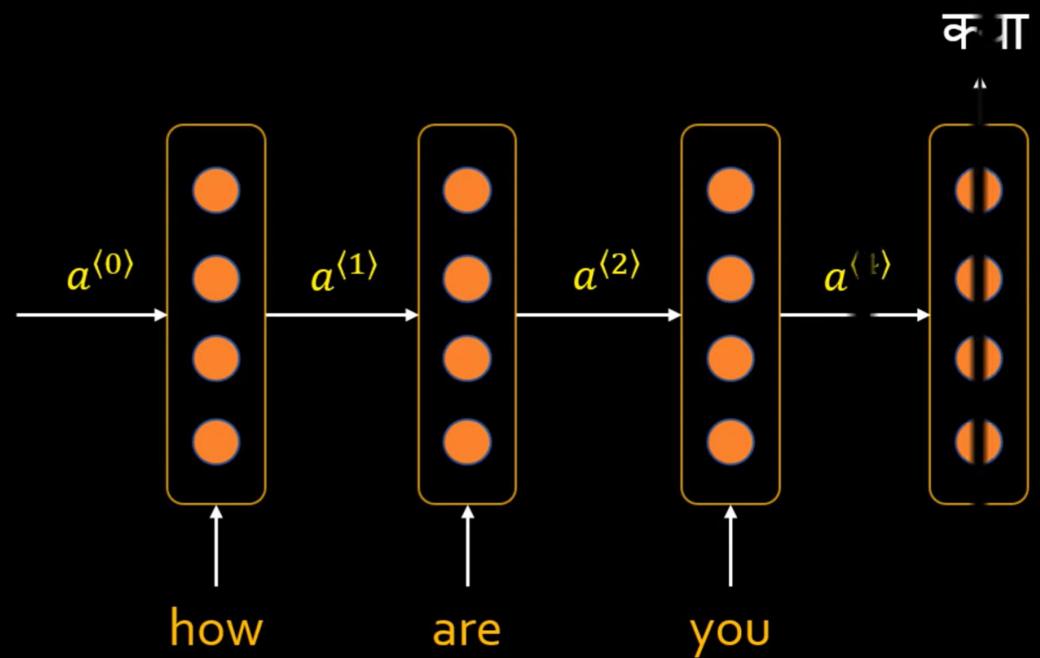
Language translation

how are you? क्या हाल है?



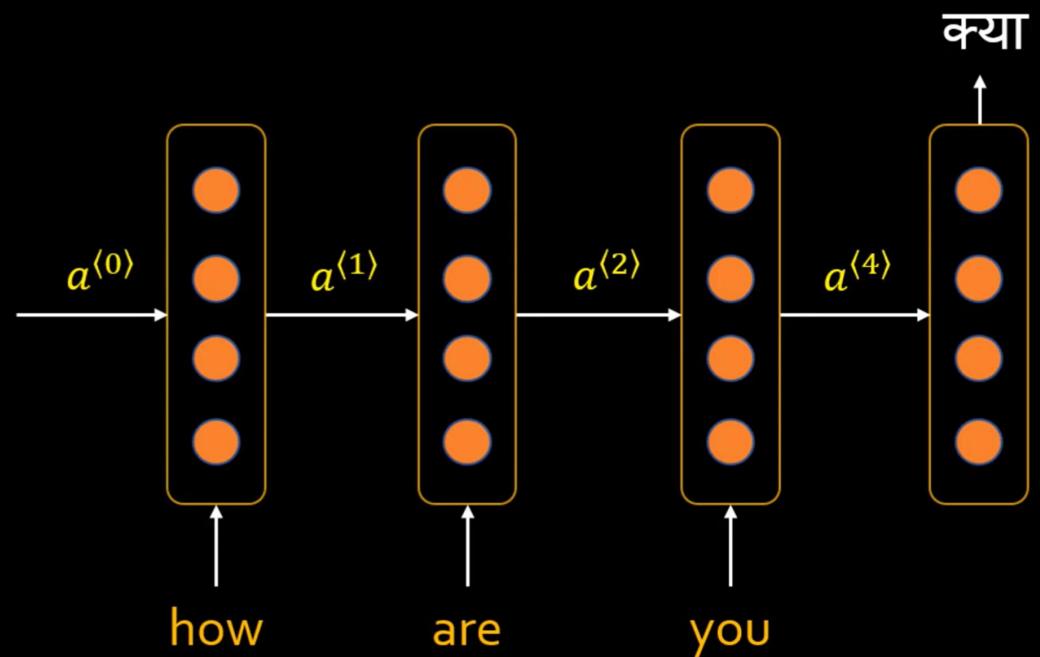
Language translation

how are you? क्या हाल है?



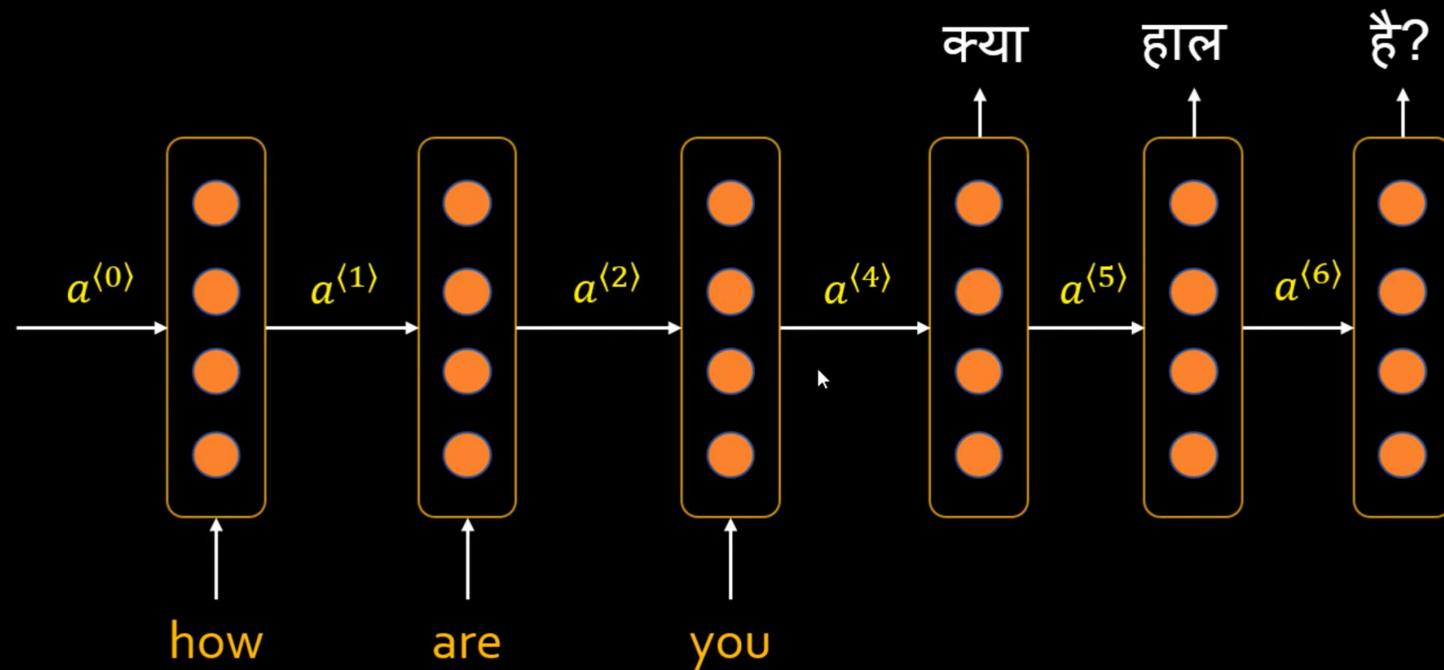
Language translation

how are you? क्या हाल है?



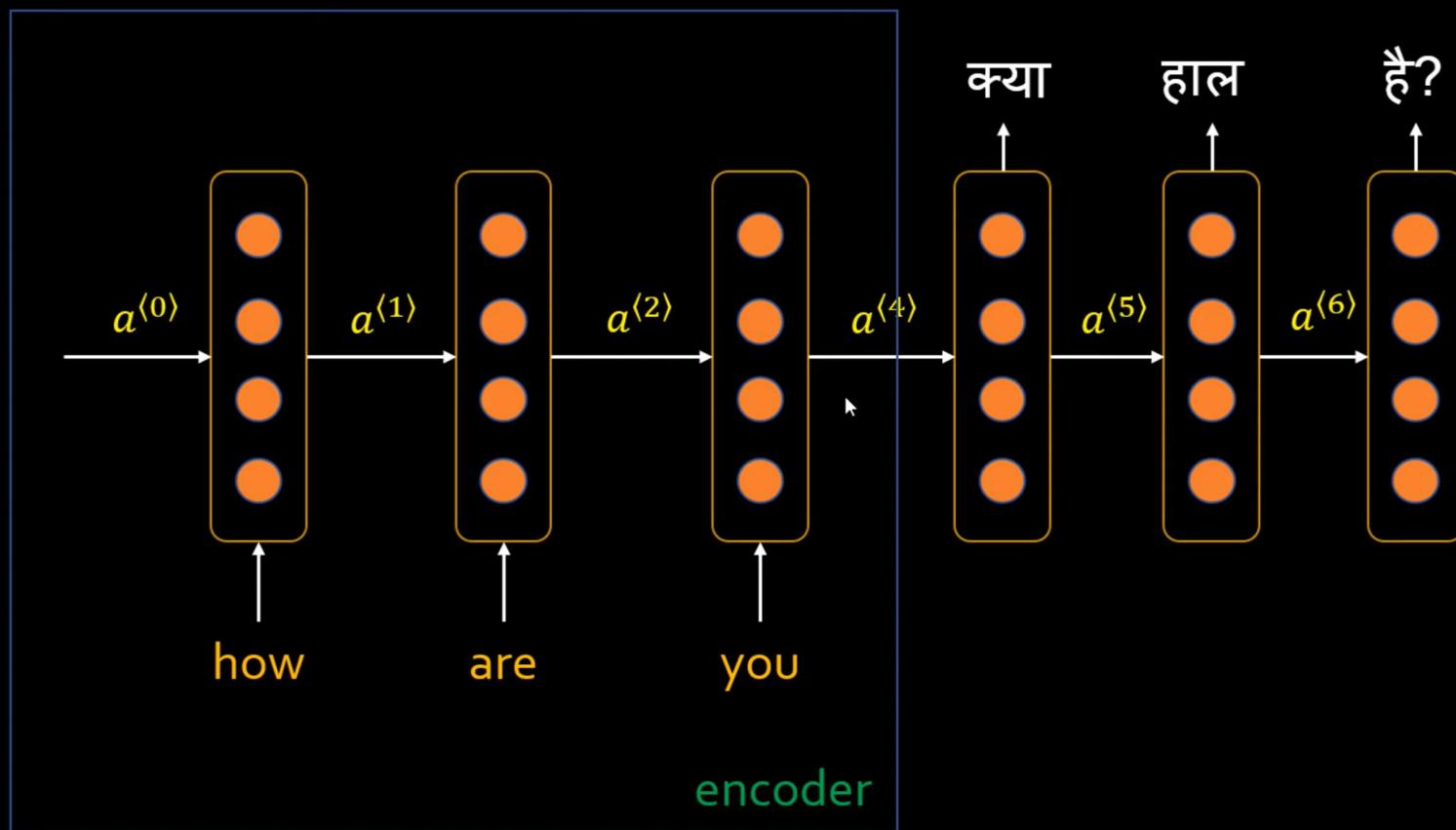
Language translation

how are you? क्या हाल है?



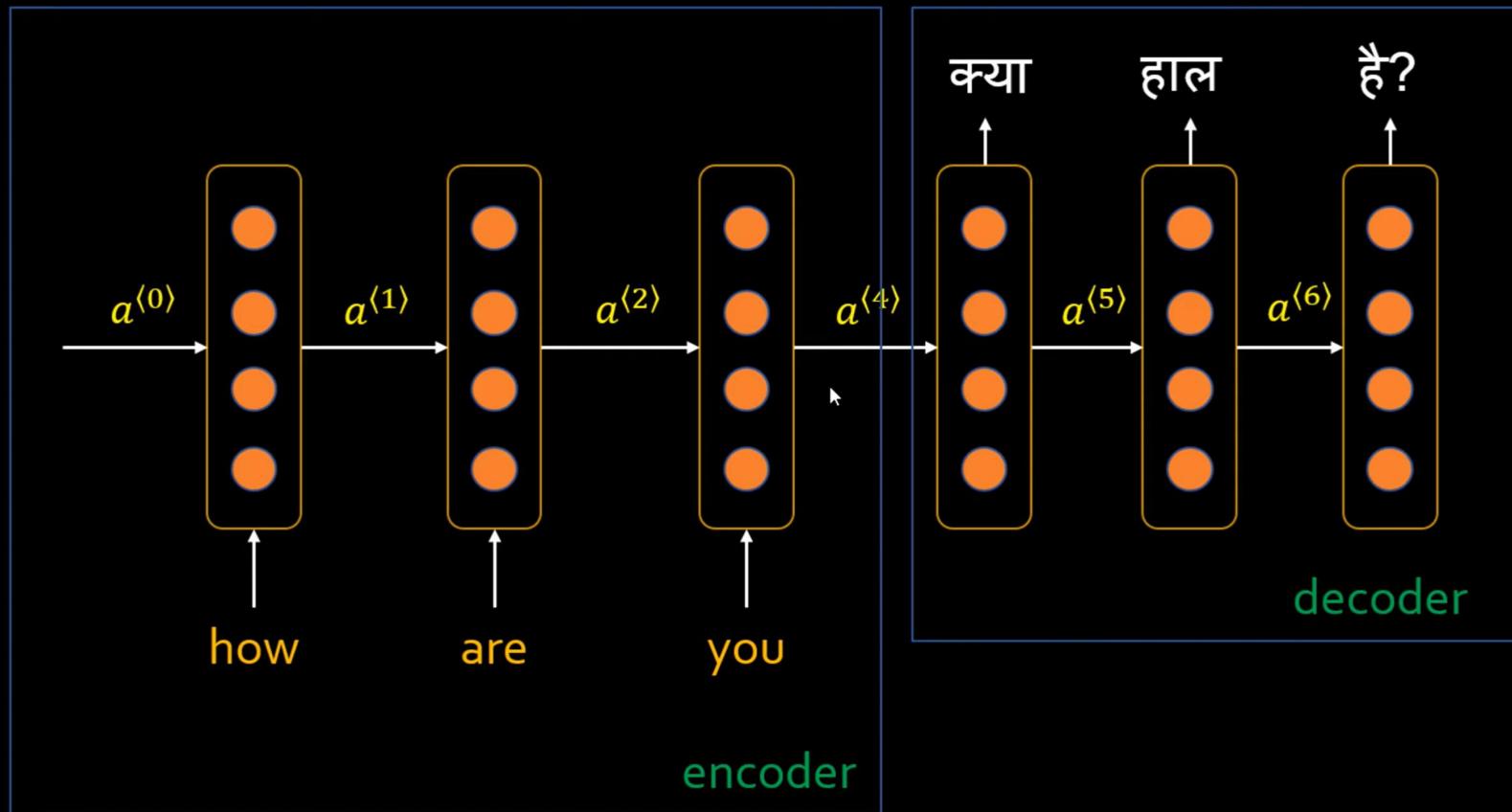
Language translation

how are you? क्या हाल है?



Language translation

how are you? क्या हाल है?



Deep RNN

