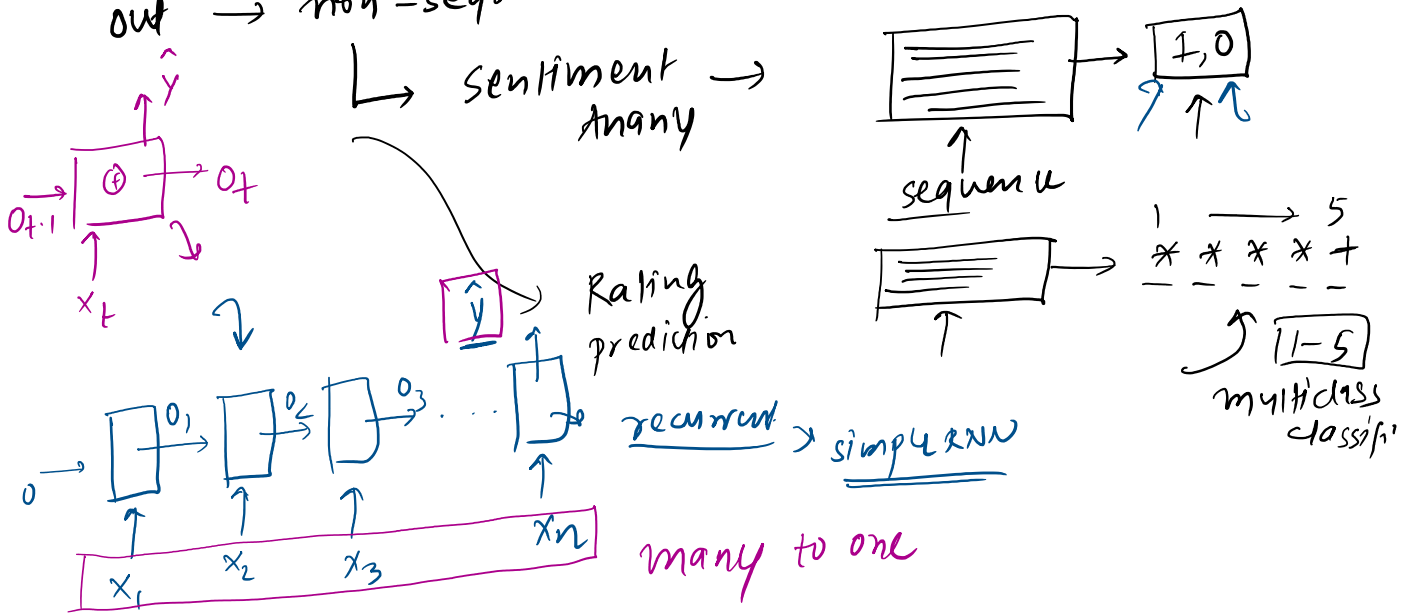


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input  $\rightarrow$  sequence  $\rightarrow$  sent, char, time series  
out  $\rightarrow$  non-sequence  $\rightarrow$  int/num  $\rightarrow$  scalars (1,0)



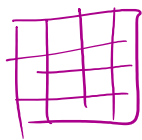
## One to Many

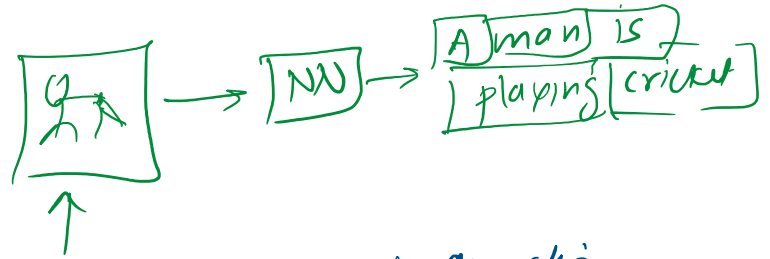
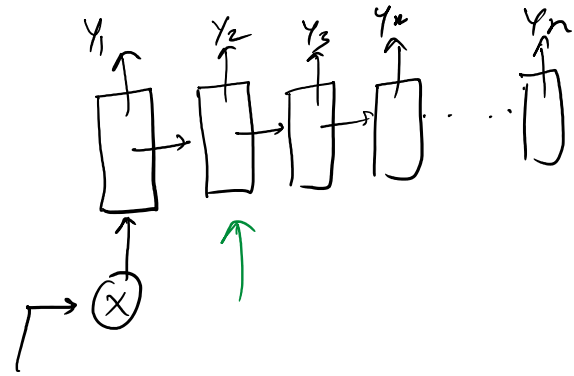
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→ normal non sequential  
↳ 

→ Output → sequential

image captioning

 → textual repres.



→ music generation

# Many to Many

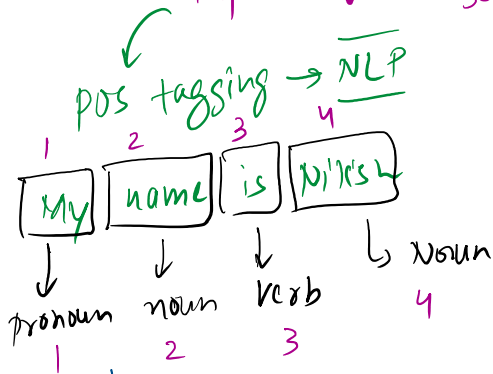
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input  $\rightarrow$  sequent  $\rightarrow$  seq 2 seq  
out  $\rightarrow$  sequen

Same length

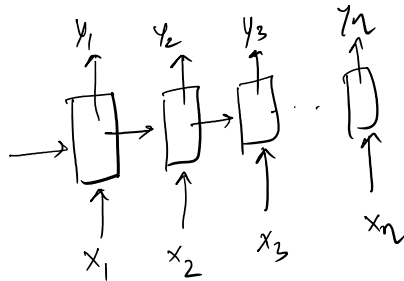
Variable length

input seq == output seq



NER

Lets meet at 7pm at the airport



same length  
many many  
RNN

Variable length

machine trans

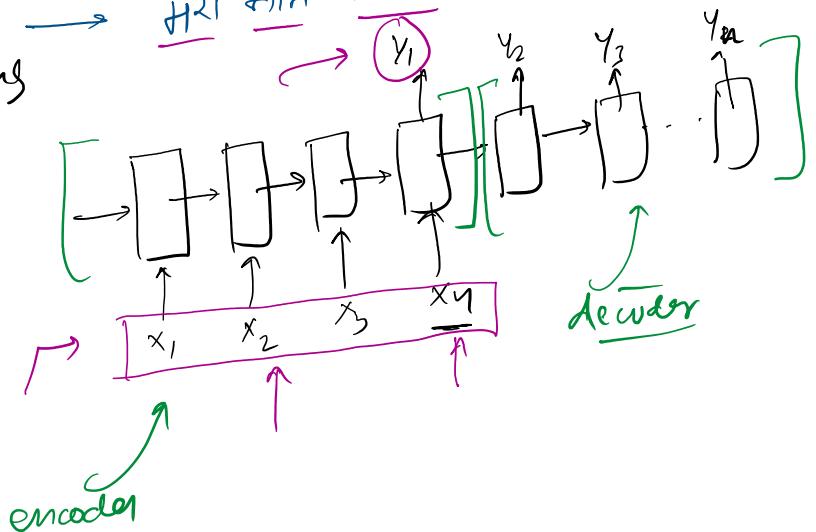
1 lang  $\rightarrow$  2 lang

google translate

encoder  
decoder

Hi my name is Nicks

Hi my name is Nicks



## One to One

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