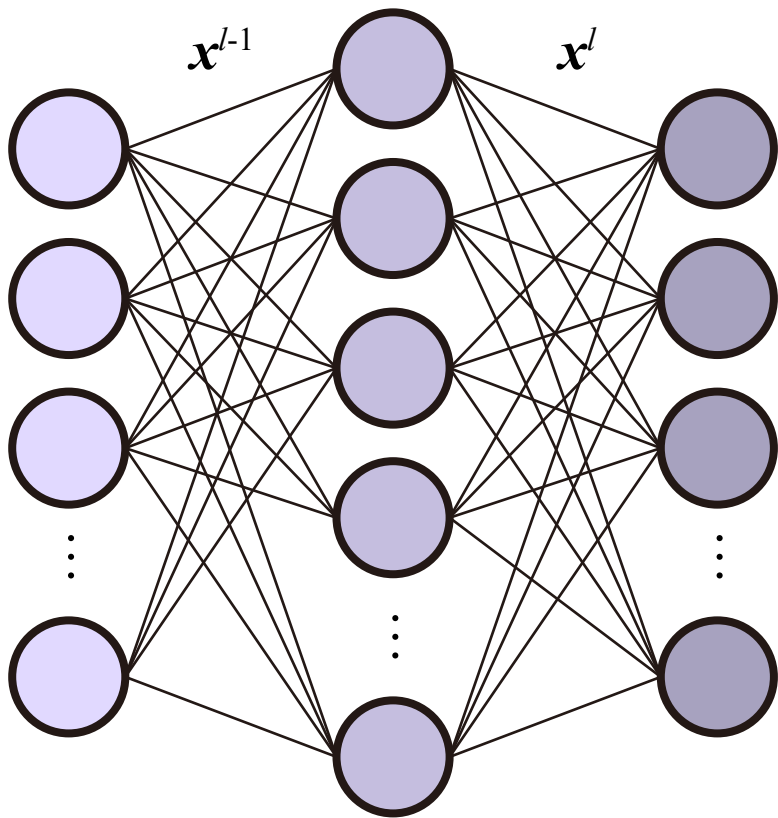
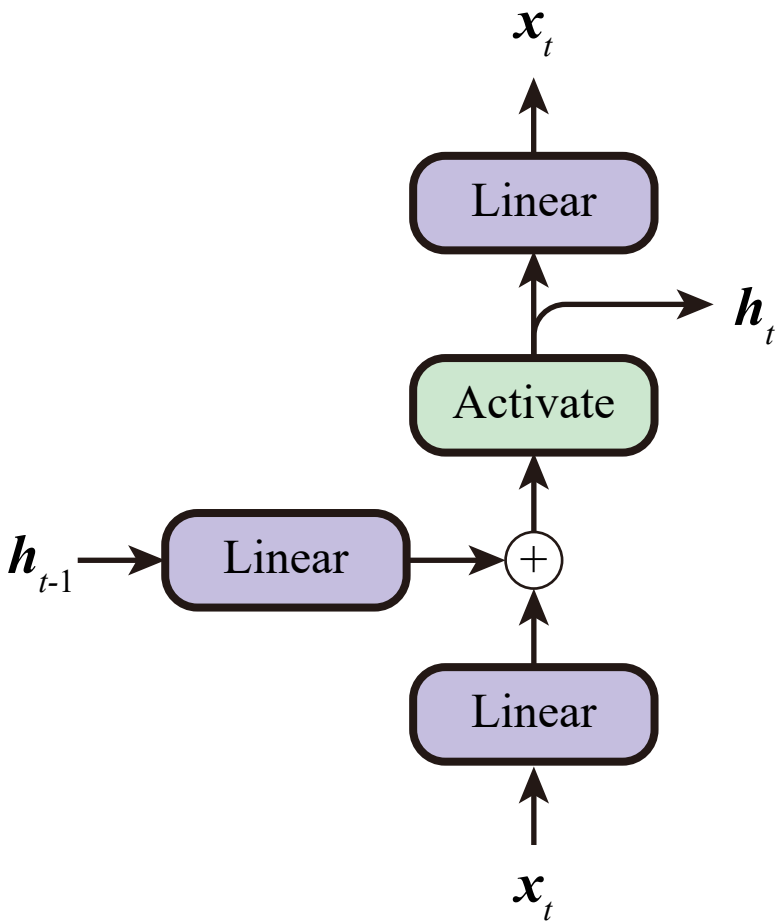


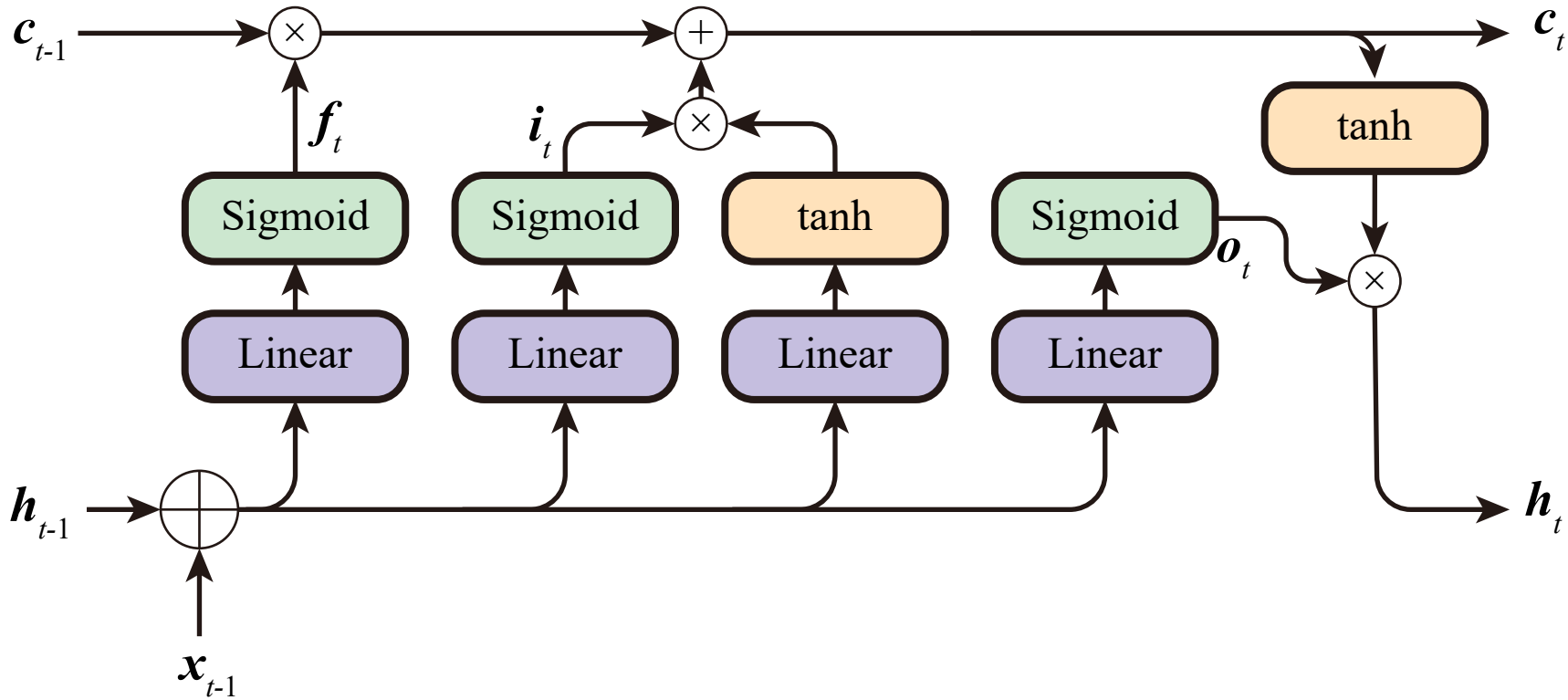
第 $l-1$ 层

第 l 层

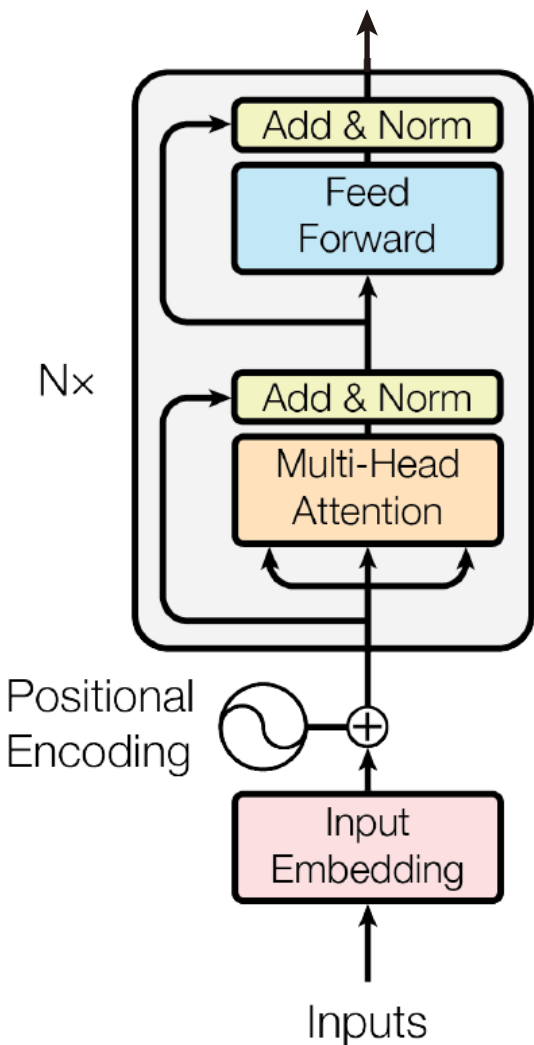
第 $l+1$ 层







编码后的向量表示



上一轮交互SQL语句



SQL语句编码器 (Bi-LSTM)



对自然语言、数据库架构、
上一轮SQL的注意力机制

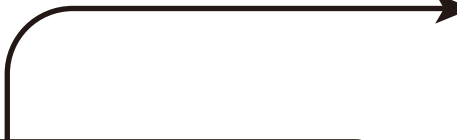


SQL解码器 (LSTM)



SQL语句

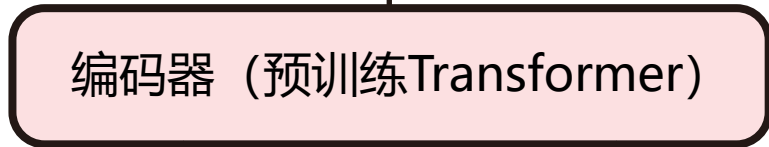
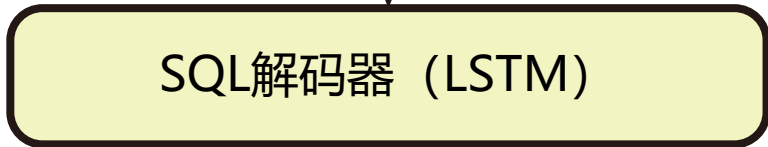
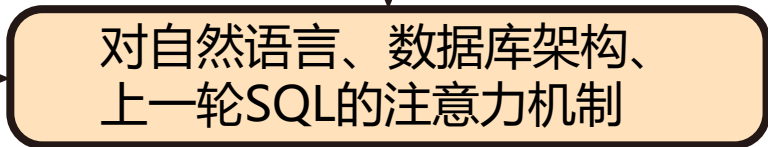
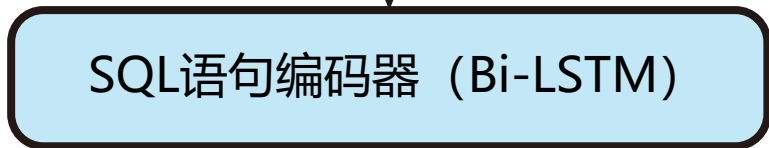
编码器 (预训练Transformer)



自然语言查询



数据库架构



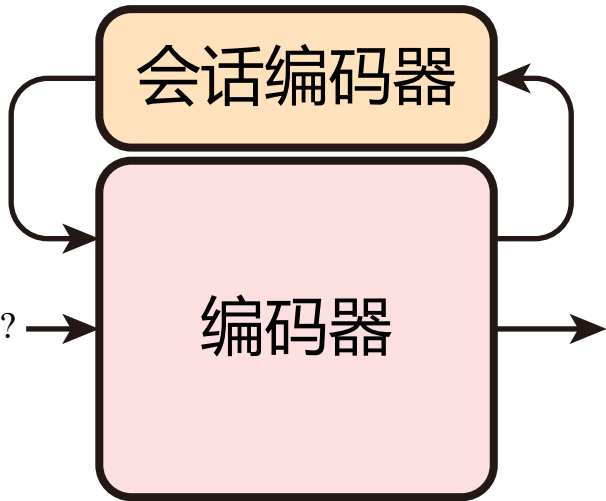
h^E Bi-LSTM^E h_1^C Bi-LSTM^C h_2^C Bi-LSTM^C

预训练Transformer

Who are all the party hosts? [SEP] table : party ; columns : party id , party theme , table : ...

What are all the airlines?
Of these, which is Jetblue Airways?

What is the country corresponding it?

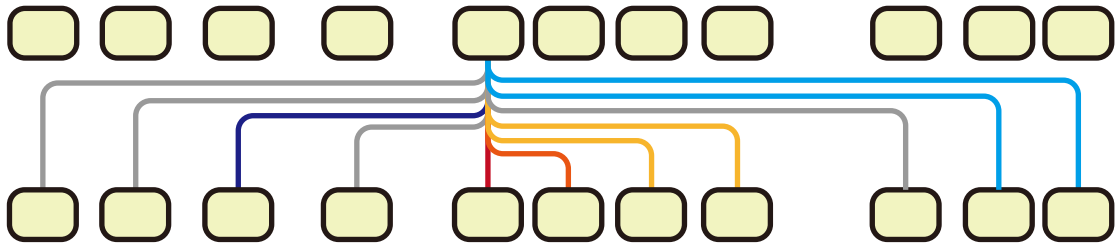


What are all the airlines? Of these,
which is Jetblue Airways? What is
the country corresponding it?



编码器





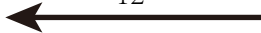
... [SEP] table : party ; columns : party id , party theme , table : host party ...

● 自己 ● 同一列中其他单词 ● 同一表中其他列 ● 所在表 ● 一对多关联表 ● 其他

明天有几架从广州
去北京的航班？



12



明天有几架从广州
去北京的航班？

SELECT count(*) ...



明天有几架从广州
去北京的航班？

`SELECT count(*) ...`

转换器

12

