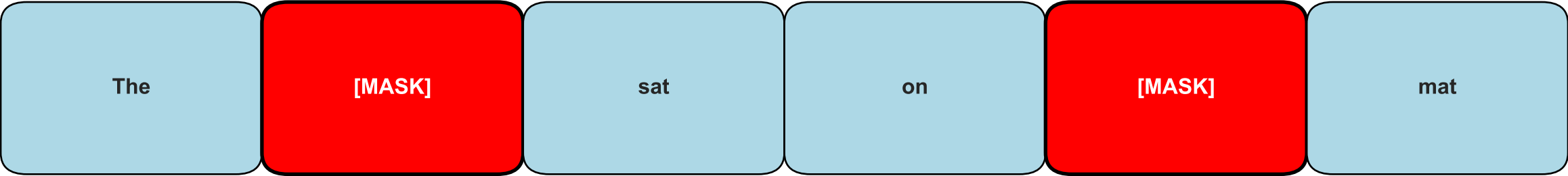


# BERT Pre-training: Two-Task Learning

## BERT Training: Masked Language Modeling (MLM)

Input:



Model:



Prediction:



15% of words masked randomly during training

## Next Sentence Prediction (NSP)

Sentence A:

"The man went to the store."

Sentence B:

"He bought milk and bread."

Label: IsNext

Sentence A:

"The cat slept all day."

Sentence B:

"Quantum physics is complex."

Label: NotNext

## Training Data

- BookCorpus: 800M words
- Wikipedia: 2.5B words
- **Total: 3.3B words**

- Training time: 4 days
- Hardware: 4-16 TPUs
- **Parameters: 110M-340M**