Q & A Preparation

Question: Why did Logistic Regression outperform LSTM?
Answer: Classical models like Logistic Regression perform well with TF–IDF features on linear problems. LSTM requires more tuning, data, and often pretrained embeddings to match this performance.

Question: Why did the CNN perform better than the LSTM?
Answer: CNNs capture local n-gram patterns through convolutions and are easier to train. LSTMs rely on sequential dependencies and struggled here due to underfitting.

Question: How did you choose 200 as the sequence length?
Answer: It covers most review lengths without incurring high memory costs. We chose 200 as a balance between performance and efficiency.

Question: What would improve the LSTM performance?
Answer: Using pretrained embeddings like GloVe, adding more layers, regularization, or applying attention mechanisms could significantly help.

Question: Would using BERT improve results?
Answer: Likely yes. BERT captures deep contextual semantics and typically outperforms LSTM/CNN models on sentiment analysis, at the cost of higher computational demand.

Question: What kind of reviews did models fail on?
Answer: Sarcastic, very short, or sentiment-ambiguous reviews were the most challenging for all models.

Question: How fast is the model inference?
Answer: Naïve Bayes is fastest (0.13ms/sample), followed by Logistic Regression (0.47ms), then Linear SVM and CNN. LSTM was slow and ineffective.