# Assignment 1: Sentiment Analysis using LSTM

In this assignment, you will implement a Sentiment Analysis model using a Long Short-Term Memory (LSTM) network.

## Tasks:

Dataset Preparation: Load the IMDb movie review dataset from TensorFlow Datasets.

Text Preprocessing: Preprocess the text data by tokenizing it into words, padding sequences to a fixed length, and converting labels to numerical format.

Build LSTM Model: Implement an LSTM model using TensorFlow or Keras.

Train LSTM Model: Train the LSTM model on the preprocessed movie review data to predict sentiment (positive or negative).

Evaluation: Evaluate the performance of the LSTM model on a test set using accuracy and other relevant metrics.

Deliverables:

Submit a Python script or Jupyter notebook containing the implementation of the LSTM model for sentiment analysis. Include comments to explain each step of the code. Present the model's training history and evaluation results. Also write inference code.