Saliency Map for NLP (heatmap) v1.1

We begin with learning about how to generate heatmaps to visualize a per token model explanation. We will be using the package `lime-text` and we provide a quick start guide. Lime is the framework and all knowledge creating that we are exploiting for computing the gradients.

```
[1] !pip install -q -U keras-nlp tensorflow text
```

```
[2] # Keras 3.0 requires TensorFlow 2.16 and nightly builds.
    # Colab keeps up with TF releases.
    !pmip install -q -U tensorflow-text
    !pip install -q -U tensorflow-datasets
    !pip install -q -U keras-nlp --upgrade
    !pip install -q -U keras-tuner
    !pip install -q -U keras-core
    !pip install -q -U keras-hub --upgrade
    !pip install -q -U lime
```

Load dataset

Use the `imdb` dataset. Source: Learn Word Embeddings. The parameter is an identifier string with three keys: combination, domain, split, and subsets. In the dataset, with the dataset a NER (sentiment analysis) on movie reviews), the model is a BERT model fine-tuned to the IMDb Movie Reviews sentiment analysis dataset. Jeffrey Pennington and Richard Socher and Christopher D. Manning. 2014.

```
[3] import tensorflow_datasets as tfds
    import keras_nlp
    import keras_hub
    import tensorflow as tf
    import numpy as np
    import keras
    import os
    os.environ["KERAS_BACKEND"] = "tensorflow"
    imdb = tfds.load("imdb", as_supervised=True)
    train_ds, test_ds = imdb["train"], imdb["test"]
    train_ds = train_ds.batch(32).cache().prefetch(tf.data.AUTOTUNE)
    test_ds = test_ds.batch(32).cache().prefetch(tf.data.AUTOTUNE)
```

```
[4] # Print an example.
    for examples, labels in train_ds.take(1):
    print("examples:", examples[:3])
    print("labels:", labels[:3])
```

```
examples: [b'This was an extremely well-made film. The acting, script and camera work were all first-rate. The music is good, too, though it is mostly in the background. In a word, it is elegant.' b'A great movie. Very moving. Several times I was on the edge of my seat. It\'s\'s a\'s\'s\'s
```