Missão Prática | Nível 4 | Mundo 5

Dando inteligência ao software

Análise de Sentimentos.

Passo 1: Instalando as bibliotecas e recarregando o ambiente

```
[1] !pip install -U pip setuptools wheel

    !pip install -U spacy

    !python -m spacy download en_core_web_sm

    !pip install spacytextblob

    import pkg_resources,imp

    imp.reload(pkg_resources)
```

```
Requirement already satisfied: pip in /usr/local/lib/python3.10/dist-packages (24.3.1)
Requirement already satisfied: setuptools in /usr/local/lib/python3.10/dist-packages (75.3.0)
Requirement already satisfied: wheel in /usr/local/lib/python3.10/dist-packages (0.44.0)
Requirement already satisfied: spacy in /usr/local/lib/python3.10/dist-packages (3.8.2)
Requirement already satisfied: spacy-legacy<3.1.0,>=3.0.11 in /usr/local/lib/python3.10/dist-packages (from spacy) (3.0.12)
Requirement already satisfied: spacy-loggers<2.0.0,>=1.0.0 in /usr/local/lib/python3.10/dist-packages (from spacy) (1.0.5)
Requirement already satisfied: murmurhash<1.1.0,>=0.28.0 in /usr/local/lib/python3.10/dist-packages (from spacy) (1.0.10)
Requirement already satisfied: cymem<2.1.0,>=2.0.2 in /usr/local/lib/python3.10/dist-packages (from spacy) (2.0.8)
Requirement already satisfied: preshed<3.1.0,>=3.0.2 in /usr/local/lib/python3.10/dist-packages (from spacy) (3.0.9)
Requirement already satisfied: thinc<8.4.0,>=8.3.0 in /usr/local/lib/python3.10/dist-packages (from spacy) (8.3.2)
Requirement already satisfied: wasabi<1.2.0,>=0.9.1 in /usr/local/lib/python3.10/dist-packages (from spacy) (1.1.3)
Requirement already satisfied: srsly<3.0.0,>=2.4.3 in /usr/local/lib/python3.10/dist-packages (from spacy) (2.4.8)
Requirement already satisfied: catalogue<2.1.0,>=2.0.6 in /usr/local/lib/python3.10/dist-packages (from spacy) (2.0.10)
Requirement already satisfied: weasel<0.5.0,>=0.1.0 in /usr/local/lib/python3.10/dist-packages (from spacy) (0.4.1)
Requirement already satisfied: typer<1.0.0,>=0.3.0 in /usr/local/lib/python3.10/dist-packages (from spacy) (0.12.5)
Requirement already satisfied: tqdm<5.0.0,>=4.38.0 in /usr/local/lib/python3.10/dist-packages (from spacy) (4.66.6)
Requirement already satisfied: requests<3.0.0,>=2.13.0 in /usr/local/lib/python3.10/dist-packages (from spacy) (2.32.3)
Requirement already satisfied: pydantic!=1.8,!=1.8.1,<3.0.0,>=1.7.4 in /usr/local/lib/python3.10/dist-packages (from spacy) (2.9.2)
Requirement already satisfied: jinja2 in /usr/local/lib/python3.10/dist-packages (from spacy) (3.1.4)
Requirement already satisfied: setuptools in /usr/local/lib/python3.10/dist-packages (from spacy) (75.3.0)
Requirement already satisfied: packaging>=20.0 in /usr/local/lib/python3.10/dist-packages (from spacy) (24.1)
Requirement already satisfied: langcodes<4.0.0,>=3.2.0 in /usr/local/lib/python3.10/dist-packages (from spacy) (3.4.1)
Requirement already satisfied: numpy>=1.19.0 in /usr/local/lib/python3.10/dist-packages (from spacy) (2.0.2)
Requirement already satisfied: language-data>=1.2 in /usr/local/lib/python3.10/dist-packages (from langcodes<4.0.0,>=3.2.0->spacy) (1.2.0)
Requirement already satisfied: annotated-types>=0.6.0 in /usr/local/lib/python3.10/dist-packages (from pydantic!=1.8,!=1.8.1,<3.0.0,>=1.7.4->spacy) (0.7.0)
Requirement already satisfied: pydantic-core==2.23.4 in /usr/local/lib/python3.10/dist-packages (from pydantic!=1.8,!=1.8.1,<3.0.0,>=1.7.4->spacy) (2.23.4)
Requirement already satisfied: typing-extensions>=4.6.1 in /usr/local/lib/python3.10/dist-packages (from pydantic!=1.8,!=1.8.1,<3.0.0,>=1.7.4->spacy) (4.12.2)
Requirement already satisfied: charset-normalizer<4,>=2 in /usr/local/lib/python3.10/dist-packages (from requests<3.0.0,>=2.13.0->spacy) (3.4.0)
Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.10/dist-packages (from requests<3.0.0,>=2.13.0->spacy) (3.10)
Requirement already satisfied: urllib3<3,>=1.21.1 in /usr/local/lib/python3.10/dist-packages (from requests<3.0.0,>=2.13.0->spacy) (2.2.3)
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.10/dist-packages (from requests<3.0.0,>=2.13.0->spacy) (2024.8.30)
Requirement already satisfied: blis<1.1.0,>=1.0.0 in /usr/local/lib/python3.10/dist-packages (from thinc<8.4.0,>=8.3.0->spacy) (1.0.1)
Requirement already satisfied: confection<1.0.0,>=0.0.1 in /usr/local/lib/python3.10/dist-packages (from thinc<8.4.0,>=8.3.0->spacy) (0.1.5)
Requirement already satisfied: click>=8.0.0 in /usr/local/lib/python3.10/dist-packages (from typer<1.0.0,>=0.3.0->spacy) (8.1.7)
Requirement already satisfied: shellingham>=1.3.0 in /usr/local/lib/python3.10/dist-packages (from typer<1.0.0,>=0.3.0->spacy) (1.5.4)
Requirement already satisfied: rich>=10.11.0 in /usr/local/lib/python3.10/dist-packages (from typer<1.0.0,>=0.3.0->spacy) (13.9.3)
Requirement already satisfied: cloudpathlib<1.0.0,>=0.7.0 in /usr/local/lib/python3.10/dist-packages (from weasel<0.5.0,>=0.1.0->spacy) (0.20.0)
Requirement already satisfied: smart-open<8.0.0,>=5.2.1 in /usr/local/lib/python3.10/dist-packages (from weasel<0.5.0,>=0.1.0->spacy) (7.0.5)
Requirement already satisfied: MarkupSafe>=2.0 in /usr/local/lib/python3.10/dist-packages (from jinja2->spacy) (3.0.2)
Requirement already satisfied: marisa-trie>=0.7.7 in /usr/local/lib/python3.10/dist-packages (from language-data>=1.2->langcodes<4.0.0,>=3.2.0->spacy) (1.2.1)
Requirement already satisfied: markdown-it-py>=2.2.0 in /usr/local/lib/python3.10/dist-packages (from rich>=10.11.0->typer<1.0.0,>=0.3.0->spacy) (3.0.0)
```

Passo 2: Importando as bibliotecas para análise de sentimento

```
[2] import spacy

    from spacytextblob.spacytextblob import SpacyTextBlob
```

Passo 3: Definindo o modelo e a pipeline a serem utilizadas na análise

```
[4]  nlp = spacy.load('en_core_web_sm')

     nlp.add_pipe('spacytextblob')
```

```
<spacytextblob.spacytextblob.SpacyTextBlob at 0x7dfac1e95360>
```

Passo 4: Definindo o texto inicial a ser analisado para verificação/validação da biblioteca

```
[6]  user_input = 'This is a wonderful campsite. I loved the serenity and the birds chirping in the morning.'

     doc = nlp(user_input)
```

Passo 5: Exibindo o resultado da primeira análise (um range entre -1 [avaliação negativa] e 1 [avaliação positiva]

```
input_polarity = doc._.polarity

sentiment = {

    'score': input_polarity

}

print(sentiment)
```

```
{'score': 0.0625}
```

Passo 6: Definindo a lista de tweets a serem analisadas

```
tweets=["Bayer Leverkusen goalkeeper Bernd Leno will not be going to Napoli. His agent Uli Ferber to Bild: I can confirm that there were negotiations with Napoli, which we have broken off. Napoli is not an

"Gary Speed v Blackburn at St James in 2001/02 anyone? #NUFC #BEL #JAP #WorldCup",

"@ChelseaFC Don't make him regret it and start him over Hoofiz",

"@LiverpoolFF @AnfieldEdition He's a liar, made up. I've unfollowed him as loads of others have. Pure blagger. #LFC",

"@theesk @Everton Didn't realise Kenwright is due to leave at the end of the month. In all seriousness could you see him being interested in us?",

"@hasanshahbaz19 @LFC My knowledge has decreased somewhat in the past few seasons",

"Report: Linked with #Everton and #Wolves, Italians set to sign £4.5m-rated winger",

"Am seeing tweets that there's been a fall out @Everton between the money men... I'm presuming it's just a quiet news day or some kopite with nothing better to do! @ALANMYERSMEDIA",

"@LFC @officialAL20 @IntChampionsCup @ManUtd Expect loads of excuses after tonight's game",

"@MartinDiamond17 @azryahmad @Baren_D @Mathewlewis1997 @iamheinthu @DiMarzio @Alissonbecker @LFC @SkySportsNews @SkySport @OfficialASRoma I'm just fine I have your fanbase angry over stating facts should as

"What a weekend of football results! @ManUtd @Glentoran @RangersFC &amp; Hearts ????",

"@ChelseaFC For the first time in a long while, my heart was relaxed while watching Chelsea. Really enjoyed it today. Come on, CHELSEA!!!",

"@ChelseaFC @CesarAzpi What a fantastic signing worth every single penny ??",

"Pogba scores, Pogba assists. But tomorrow papers won't be telling you this, instead they will tell you how he'll end up at Juve because he's unhappy, frustrated, have grudges with Mourinho and so on and so

"@WestHamUtd we need to keep @CH14_ and get @HirvingLozano70 to compliment",

"@kevdev9 @Everton Shouldn't be happening! Needs to stay away with his venomous attitude until he is sold!",

"@brfootball @aguerosergiokun @ManCity What a genius. Pep taking winning mentality with him, conquering league after league. Baller",

"@MZ0709  Can we get a RT for our #lfc Mo Salah Liverpool Enamel Pin Badge"]
```

Passo 7: Analisando os tweets

```python
for item in tweets:

    doc = nlp(item)

    input_polarity = doc._.polarity

    sentiment = {

        'tweet': item,

        'score': input_polarity

    }

    print(sentiment)
```

{'tweet': 'Bayer Leverkusen goalkeeper Bernd Leno will not be going to Napoli. His agent Uli Ferber to Bild: I can confirm that there were negotiations with Napoli, which we have broken off. M
{'tweet': 'Gary Speed v Blackburn at St James in 2001/02 anyone? #NUFC #BEL #JAP #WorldCup', 'score': 0.0}
{'tweet': "@ChelseaFC Don't make him regret it and start him over Hoofiz", 'score': 0.0}
{'tweet': "@LiverpoolFF @AnfieldEdition He's a liar, made up. I've unfollowed him as loads of others have. Pure blagger. #LFC", 'score': 0.21428571428571427}
{'tweet': "@theesk @Everton Didn't realise Kenwright is due to leave at the end of the month. In all seriousness could you see him being interested in us?", 'score': 0.0625}
{'tweet': '@hasanshahbaz19 @LFC My knowledge has decreased somewhat in the past few seasons', 'score': -0.2833333333333334}
{'tweet': 'Report: Linked with #Everton and #Wolves, Italians set to sign £4.5m-rated winger', 'score': 0.0}
{'tweet': "Am seeing tweets that there's been a fall out @Everton between the money men... I'm presuming it's just a quiet news day or some kopite with nothing better to do! @ALANMYERSMEDIA',
{'tweet': "@LFC @officialAL20 @IntChampionsCup @ManUtd Expect loads of excuses after tonight's game", 'score': -0.4}
{'tweet': "@MartinDiamond17 @azryahmad @Baren_D @Mathewlewis1997 @iamheinthu @DiMarzio @Alissonbecker @LFC @SkySportsNews @SkySport @OfficialASRoma I'm just fine I have your fanbase angry over
{'tweet': 'What a weekend of football results! @ManUtd @Glentoran @RangersFC & Hearts ????', 'score': 0.0}
{'tweet': "@ChelseaFC For the first time in a long while, my heart was relaxed while watching Chelsea. Really enjoyed it today. Come on, CHELSEA!!!', 'score': 0.39218749999999997}
{'tweet': '@ChelseaFC @CesarAzpi What a fantastic signing worth every single penny ??', 'score': 0.20952380952380953}
{'tweet': "Pogba scores, Pogba assists. But tomorrow papers won't be telling you this, instead they will tell you how he'll end up at Juve because he's unhappy, frustrated, have grudges with M
{'tweet': '@WestHamUtd we need to keep @CH14_ and get @HirvingLozano70 to compliment', 'score': 0.0}
{'tweet': "@kevdev9 @Everton Shouldn't be happening! Needs to stay away with his venomous attitude until he is sold!', 'score': 0.0}
{'tweet': '@brfootball @aguerosergiokun @ManCity What a genius. Pep taking winning mentality with him, conquering league after league. Baller', 'score': 0.5}
{'tweet': '@HMZ0709 Can we get a RT for our #lfc Mo Salah Liverpool Enamel Pin Badge', 'score': 0.0}