In [1]:

```
!pip install -q google_play_scraper
!pip install -q transformers
!pip install -q plotly-express
!pip3 install tensorflow torch
```

Defaulting to user installation because normal site-packages is not writeabl
e
Requirement already satisfied: tensorflow in c:\users\user\appdata\roaming\p
ython\python39\site-packages (2.9.2)
Requirement already satisfied: torch in c:\users\user\appdata\roaming\python
\python39\site-packages (1.12.1)
Requirement already satisfied: libclang>=13.0.0 in c:\users\user\appdata\roa
ming\python\python39\site-packages (from tensorflow) (14.0.6)
Requirement already satisfied: astunparse>=1.6.0 in c:\users\user\appdata\ro
aming\python\python39\site-packages (from tensorflow) (1.6.3)
Requirement already satisfied: flatbuffers<2,>=1.12 in c:\users\user\appdata
\roaming\python\python39\site-packages (from tensorflow) (1.12)
Requirement already satisfied: six>=1.12.0 in c:\programdata\anaconda3\lib\s
ite-packages (from tensorflow) (1.16.0)
Requirement already satisfied: h5py>=2.9.0 in c:\programdata\anaconda3\lib\s
ite-packages (from tensorflow) (3.6.0)
Requirement already satisfied: protobuf<3.20,>=3.9.2 in c:\programdata\anaco
nda3\lib\site-packages (from tensorflow) (3.19.1)
Requirement already satisfied: tensorboard<2.10,>=2.9 in c:\users\user\appda
ta\roaming\python\python39\site-packages (from tensorflow) (2.9.1)
Requirement already satisfied: absl-py>=1.0.0 in c:\users\user\appdata\roami
ng\python\python39\site-packages (from tensorflow) (1.2.0)
Requirement already satisfied: opt-einsum>=2.3.2 in c:\users\user\appdata\ro
aming\python\python39\site-packages (from tensorflow) (3.3.0)
Requirement already satisfied: gast<=0.4.0,>=0.2.1 in c:\users\user\appdata
\roaming\python\python39\site-packages (from tensorflow) (0.4.0)
Requirement already satisfied: google-pasta>=0.1.1 in c:\users\user\appdata
\roaming\python\python39\site-packages (from tensorflow) (0.2.0)
Requirement already satisfied: grpcio<2.0,>=1.24.3 in c:\programdata\anacond
a3\lib\site-packages (from tensorflow) (1.42.0)
Requirement already satisfied: typing-extensions>=3.6.6 in c:\programdata\an
aconda3\lib\site-packages (from tensorflow) (4.1.1)
Requirement already satisfied: keras<2.10.0,>=2.9.0rc0 in c:\users\user\appd
ata\roaming\python\python39\site-packages (from tensorflow) (2.9.0)
Requirement already satisfied: tensorflow-io-gcs-filesystem>=0.23.1 in c:\us
ers\user\appdata\roaming\python\python39\site-packages (from tensorflow) (0.
26.0)
Requirement already satisfied: keras-preprocessing>=1.1.1 in c:\users\user\a
ppdata\roaming\python\python39\site-packages (from tensorflow) (1.1.2)
Requirement already satisfied: numpy>=1.20 in c:\programdata\anaconda3\lib\s
ite-packages (from tensorflow) (1.21.5)
Requirement already satisfied: termcolor>=1.1.0 in c:\users\user\appdata\roa
ming\python\python39\site-packages (from tensorflow) (1.1.0)
Requirement already satisfied: setuptools in c:\programdata\anaconda3\lib\si
te-packages (from tensorflow) (61.2.0)
Requirement already satisfied: wrapt>=1.11.0 in c:\programdata\anaconda3\lib
\site-packages (from tensorflow) (1.12.1)
Requirement already satisfied: tensorflow-estimator<2.10.0,>=2.9.0rc0 in
c:\users\user\appdata\roaming\python\python39\site-packages (from tensorflo
w) (2.9.0)
Requirement already satisfied: packaging in c:\programdata\anaconda3\lib\sit
e-packages (from tensorflow) (21.3)
Requirement already satisfied: wheel<1.0,>=0.23.0 in c:\programdata\anaconda
3\lib\site-packages (from astunparse>=1.6.0->tensorflow) (0.37.1)

```
Requirement already satisfied: markdown>=2.6.8 in c:\programdata\anaconda3\l
ib\site-packages (from tensorboard<2.10,>=2.9->tensorflow) (3.3.4)
Requirement already satisfied: google-auth-oauthlib<0.5,>=0.4.1 in c:\users
\user\appdata\roaming\python\python39\site-packages (from tensorboard<2.10,>
=2.9->tensorflow) (0.4.6)
Requirement already satisfied: requests<3,>=2.21.0 in c:\programdata\anacond
a3\lib\site-packages (from tensorboard<2.10,>=2.9->tensorflow) (2.27.1)
Requirement already satisfied: tensorboard-plugin-wit>=1.6.0 in c:\users\use
r\appdata\roaming\python\python39\site-packages (from tensorboard<2.10,>=2.9
->tensorflow) (1.8.1)
Requirement already satisfied: werkzeug>=1.0.1 in c:\programdata\anaconda3\l
ib\site-packages (from tensorboard<2.10,>=2.9->tensorflow) (2.0.3)
Requirement already satisfied: tensorboard-data-server<0.7.0,>=0.6.0 in c:\u
sers\user\appdata\roaming\python\python39\site-packages (from tensorboard<2.
10,>=2.9->tensorflow) (0.6.1)
Requirement already satisfied: google-auth<3,>=1.6.3 in c:\programdata\anaco
nda3\lib\site-packages (from tensorboard<2.10,>=2.9->tensorflow) (1.33.0)
Requirement already satisfied: cachetools<5.0,>=2.0.0 in c:\programdata\anac
onda3\lib\site-packages (from google-auth<3,>=1.6.3->tensorboard<2.10,>=2.9-
>tensorflow) (4.2.2)
Requirement already satisfied: pyasn1-modules>=0.2.1 in c:\programdata\anaco
nda3\lib\site-packages (from google-auth<3,>=1.6.3->tensorboard<2.10,>=2.9->
tensorflow) (0.2.8)
Requirement already satisfied: rsa<5,>=3.1.4 in c:\programdata\anaconda3\lib
\site-packages (from google-auth<3,>=1.6.3->tensorboard<2.10,>=2.9->tensorfl
ow) (4.7.2)
Requirement already satisfied: requests-oauthlib>=0.7.0 in c:\users\user\app
data\roaming\python\python39\site-packages (from google-auth-oauthlib<0.5,>=
0.4.1->tensorboard<2.10,>=2.9->tensorflow) (1.3.1)
Requirement already satisfied: pyasn1<0.5.0,>=0.4.6 in c:\programdata\anacon
da3\lib\site-packages (from pyasn1-modules>=0.2.1->google-auth<3,>=1.6.3->te
nsorboard<2.10,>=2.9->tensorflow) (0.4.8)
Requirement already satisfied: charset-normalizer~=2.0.0 in c:\programdata\a
naconda3\lib\site-packages (from requests<3,>=2.21.0->tensorboard<2.10,>=2.9
->tensorflow) (2.0.4)
Requirement already satisfied: urllib3<1.27,>=1.21.1 in c:\programdata\anaco
nda3\lib\site-packages (from requests<3,>=2.21.0->tensorboard<2.10,>=2.9->te
nsorflow) (1.26.9)
Requirement already satisfied: certifi>=2017.4.17 in c:\programdata\anaconda
3\lib\site-packages (from requests<3,>=2.21.0->tensorboard<2.10,>=2.9->tenso
rflow) (2021.10.8)
Requirement already satisfied: idna<4,>=2.5 in c:\programdata\anaconda3\lib
\site-packages (from requests<3,>=2.21.0->tensorboard<2.10,>=2.9->tensorflo
w) (3.3)
Requirement already satisfied: oauthlib>=3.0.0 in c:\users\user\appdata\roam
ing\python\python39\site-packages (from requests-oauthlib>=0.7.0->google-aut
h-oauthlib<0.5,>=0.4.1->tensorboard<2.10,>=2.9->tensorflow) (3.2.0)
Requirement already satisfied: pyparsing!=3.0.5,>=2.0.2 in c:\programdata\an
aconda3\lib\site-packages (from packaging->tensorflow) (3.0.4)
```

In [3]:

```python
import pandas as pd
import numpy as np
from google_play_scraper import app, Sort, reviews_all
import plotly.express as px
```

In [4]:

```python
hk_project = reviews_all('com.myhiking.hiking', sleep_milliseconds = 0, lang = 'en', countr
```

In [5]:

```python
df = pd.json_normalize(hk_project)
```

In [6]:

```python
df.head()
```

Out[6]:

	reviewId	userName	userImage	content	score	thumbsUpCour
0	3f7d7cbb-29fc-494c-9eb1-9fc2c3f3567f	Abhayaan	https://play-lh.googleusercontent.com/a/Altbvm...	Nice app	5	
1	1b77ff3d-7bb7-4b20-ba45-c521e7f601e5	DVN moon	https://play-lh.googleusercontent.com/a-/AFdZu...	Thank you 😊	5	
2	182476c3-acb8-469f-9dbf-68b335d2b0dd	RAJAN KUMAR RAJA	https://play-lh.googleusercontent.com/a-/AFdZu...	Very good experience on hiking	5	
3	5df7f63b-40e3-4303-9fa4-bdf5e7b91e40	pullela nithish1	https://play-lh.googleusercontent.com/a/Altbvm...	I love IT 😍	5	
4	fb1dd0a0-d134-48a6-a7ca-08eac6b6adc4	Shaibaz Shaikh	https://play-lh.googleusercontent.com/a/Altbvm...	This is fake app.	1	

In [7]:

```python
df['score'].mean()
```

Out[7]:

4.786429018136335

In [8]:

```python
df['reviewCreatedVersion'].value_counts()
```

Out[8]:

```
3.8    1341
3.6     940
3.4     396
3.7     194
3.5      53
3.1      13
3.3       5
2.9       3
2.7       1
Name: reviewCreatedVersion, dtype: int64
```

In [9]:

```python
from transformers import pipeline

sentiment_analysis = pipeline("sentiment-analysis",model="siebert/sentiment-roberta-large-e
```

In [10]:

```python
print(sentiment_analysis("I love this!"))
```

```
[{'label': 'POSITIVE', 'score': 0.9988656044006348}]
```

In [13]:

```python
y[0]['label']
```

Out[13]:

```
'POSITIVE'
```

In [14]:

```python
y[0]['score']
```

Out[14]:

```
0.9988656044006348
```

In [15]:

```python
df['sentiment'] = df['result'].apply(lambda x: (x[0]['label']))
df['score'] = df['result'].apply(lambda x: (x[0]['score']))
```

In [16]:

```
df.head()
```

Out[16]:

userImage	content	score	thumbsUpCount	reviewCreatedVersion	
https://play-lh.googleusercontent.com/a/Altbvm...	Nice app	0.998574	0	None	20:
https://play-lh.googleusercontent.com/a-/AFdZu...	Thank you 😊	0.998829	0	3.8	20:
https://play-lh.googleusercontent.com/a-/AFdZu...	Very good experience on hiking	0.998804	0	3.8	19:
https://play-lh.googleusercontent.com/a/Altbvm...	I love IT 😍	0.998839	0	3.8	21:
https://play-lh.googleusercontent.com/a/Altbvm...	This is fake app.	0.999493	0	None	19:

In [17]:

```
df['score'].mean()
```

Out[17]:

0.9927640226649224

In [20]:

```
df['sentiment'].value_counts(normalize=True)
```
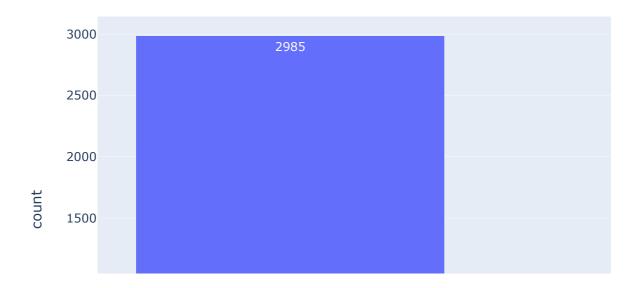
Out[20]:

```
POSITIVE    0.933396
NEGATIVE    0.066604
Name: sentiment, dtype: float64
```

In [22]:

```
fig = px.histogram(df, x='sentiment', color='sentiment', text_auto=True)
fig.show()
```


In [ ]: