In [1]:

```
import pandas as pd
```

In [2]:

```
reader = pd.read_csv("comentarios_por_pais.csv",sep = ";")
```

In [3]:

```
reader.head()
```

Out[3]:

	pais	comentario
0	United States	PLEASE GO BACK TO CHRONOLOGICAL ORDER ON THE T...
1	Australia	Highly recommend
2	Singapore	After many times I have tried, there still hav...
3	Australia	Love the filters, hate the non-chronological f...
4	United Kingdom	You can't even call this an app, it's the bigg...

In [4]:

```
writer = reader
```

In [5]:

```
writer['longitud'] = writer['comentario'].apply(lambda x: len(str(x)))
```

In [6]:

```
writer.head()
```

Out[6]:

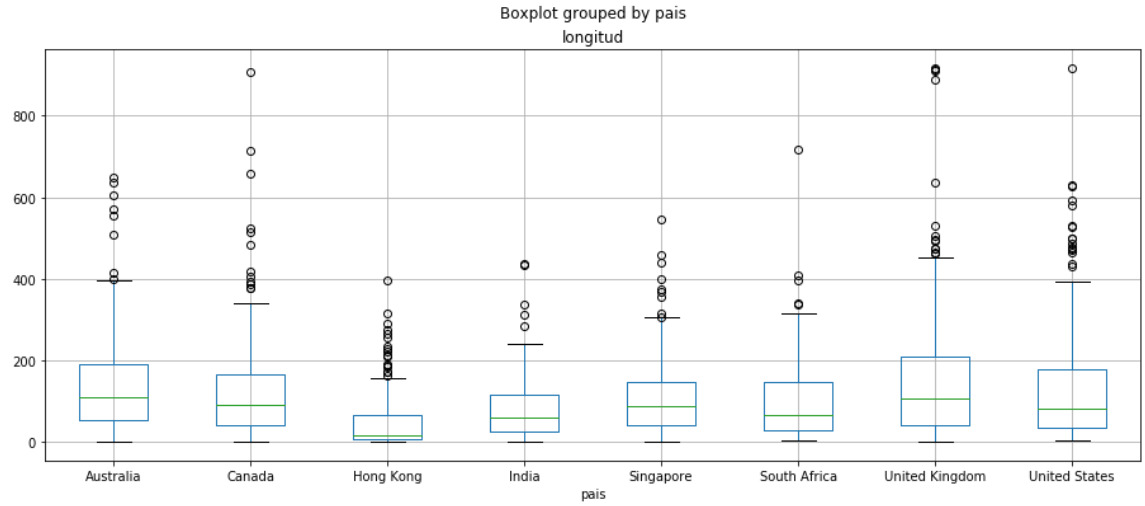
	pais	comentario	longitud
0	United States	PLEASE GO BACK TO CHRONOLOGICAL ORDER ON THE T...	54
1	Australia	Highly recommend	16
2	Singapore	After many times I have tried, there still hav...	140
3	Australia	Love the filters, hate the non-chronological f...	51
4	United Kingdom	You can't even call this an app, it's the bigg...	402

In [7]:

```
import matplotlib
import numpy as np
import matplotlib.pyplot as pl
```

In [8]:

```
#grafico de longitud por pais
#el boxplot proporciona datos estadisticos como la mediana y los valores maximo
 y minimo de la longitud
bp = writer.boxplot(column='longitud', by='pais', figsize=(15, 6))
```



In [9]:

```
import math
def calcularEntropia(mensaje):
    mensajeList = list(mensaje)
    simbolosList = list(set(mensajeList))
    frecuencias = []
    for simbolo in simbolosList:
        cant = 0
        for simbolo2 in mensajeList:
            if simbolo == simbolo2:
                cant+=1
        frecuencias.append(float(cant) / len(mensajeList))
    entropia = 0.0
    for frec in frecuencias:
        entropia = entropia + frec * math.log(frec,2)
    entropia = -entropia
    return entropia
```

In [10]:

```
writer['entropia'] = writer['comentario'].apply(lambda x: calcularEntropia(str(x
)))
```

In [11]:

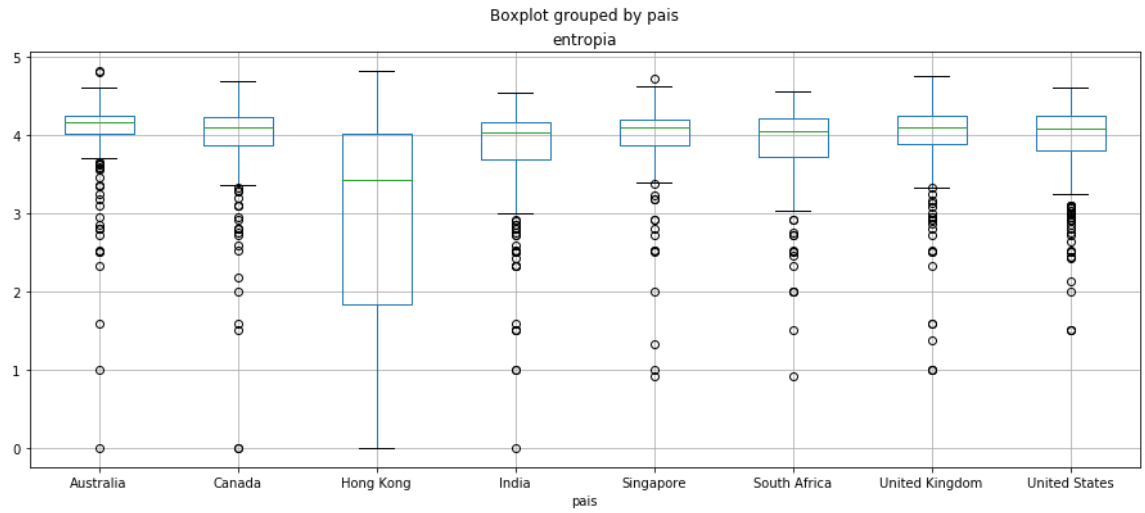
```
writer.head()
```

Out[11]:

	pais	comentario	longitud	entropia
0	United States	PLEASE GO BACK TO CHRONOLOGICAL ORDER ON THE T...	54	3.908766
1	Australia	Highly recommend	16	3.750000
2	Singapore	After many times I have tried, there still hav...	140	4.066813
3	Australia	Love the filters, hate the non-chronological f...	51	4.019863
4	United Kingdom	You can't even call this an app, it's the bigg...	402	4.463797

In [12]:

```
bp = writer.boxplot(column='entropia', by='pais', figsize=(15, 6))
```



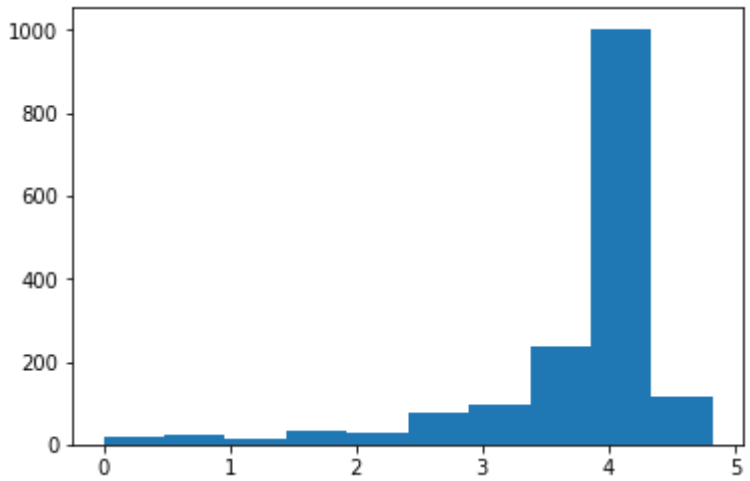
En base al Boxplot se puede apreciar que los mensajes de Hong Kong poseen menos entropía.

In [13]:

```
pl.hist(writer["entropia"])
```

Out[13]:

```
(array([  18.,   21.,   13.,   34.,   26.,   78.,   95.,  238., 100
3.,
         115.]),
 array([0.        , 0.48247425, 0.96494849, 1.44742274, 1.92989699,
        2.41237124, 2.89484548, 3.37731973, 3.85979398, 4.34226823,
        4.82474247]),
 <a list of 10 Patch objects>)
```



Sin Embargo los valores se distribuyen normalmente, por lo que se puede concluir que la entropía es similar en cada país.

In [14]:

```
writer.to_csv("datos_agregados.csv")
```

In [15]:

```
data = pd.read_csv("datos_agregados.csv")
```

In [16]:

```
data.head()
```

Out[16]:

	Unnamed: 0	pais	comentario	longitud	entropia
0	0	United States	PLEASE GO BACK TO CHRONOLOGICAL ORDER ON THE T...	54	3.908766
1	1	Australia	Highly recommend	16	3.750000
2	2	Singapore	After many times I have tried, there still hav...	140	4.066813
3	3	Australia	Love the filters, hate the non-chronological f...	51	4.019863
4	4	United Kingdom	You can't even call this an app, it's the bigg...	402	4.463797

In [ ]:

```

```

In [ ]:

```

```