Introduction to Machine Learning for NLP

Inter Annotator Agreement - Exercises

Q1
1a: Using data in slide 21, make contingency table for the case where both participants (A and B) choose "negative" 80% times (hint: recall that they choose "negative" 20% of times) and prove that expected agreement is equal to 68%

1b: Same as 1a, but with participant A choosing "negative" 80% and participant B choosing "negative" 50% times. What is the expected agreement?

Q2
Compute *kappa* between annotator A and annotator C using data from slide 13. Do all the steps: make a contingency table, compute observed agreement, expected agreement, etc.

Q3
3a: Use NLTK in python to compute *kappa* between annotators A and B; between B and C; between A and C. Which pair has the highest agreement? Which one is the lowest?

```
import nltk
from nltk import nltk.metrics import agreement
task = agreement.AnnotationTask(data=mydata)
task.kappa()
```

`mydata` is a list of lists of the type where `mydata[0]` is the id of the annotator, `mydata[1]` the id of the sample/text, `mydata[2]` the class chosen by the annotator

```
mydata = [['A', 01, negative],['B', 01, negative],['A', 02, positive],['B',
02, negative]
```

3b: Use NLTK in python to compute *kappa* between the two annotators in this file:
https://sandropezzelle.github.io/Other/att-nonatt-coded.txt

After reading the lines in the file, you can use something like this to encode data in right format:
```
>>> for id,i in enumerate(content):
...     a = i.strip().split('\t')
...     if a[-2]=='1' or a[-2]=='0':
...             if a[-1]=='1' or a[-1]=='0':
...                     llist1,llist2 = [],[]
...                     llist1.append('1')
...                     llist1.append(str(id))
...                     llist1.append(str(a[-2]))
```