Assignment4

November 7, 2018

question 3

```
In [1]: import numpy as np
        import pandas as pd
        import requests
        from lxml import html

        string= open('/home/ssachnof/Assignments/Assignment4/university.xml','r').read()
        tree= html.document_fromstring(string)
        students= tree.xpath('//student[contains(@courses, "CSC366")]/./@id')
        print(students)
```

```
['234']
```

question 5

```
In [2]: import json
        with open("/home/ssachnof/Assignments/Assignment4/university.json","r") as read_file:
            data= json.load(read_file)
        output= []
        for student in data['university']['students']:
            if 'CSC366' in student['courses']:
                output.append(student['id'])
        print(output)
```

```
[234]
```

question 6 a) d1: [a:4, b:1, c:1] d2: [a:3, b:2, c:2] d3: [a:1,b:0,c:2] q: [a:1,b:1, c:0]
b) d1:[a:4/4*log(3/3), b:1/4*log(3/2), c: 1/4 * log(3/3)]= [a:0,b:.146,c:0] d2:[a:3/3*log(3/3), b:2/3*log(3/2), c: 2/3 * log(3/3)]= [a:0,b:.390, c:0] d3: [a: 1/2 * log(3/3), b: 0, c: 2/2* log(3/3)]= [a:0,b:0,c:0] q: [a: (.5 + .5(1/1))* log(3/3), b: (.5 + .5 *(1/1))*log(3/2), c: 0]= [a:0, b: .585, c:0]
c) cos(q,d1)= .146/.146*.585/.585= 1 cos(q, d2)= .390/.390 * .585/.585= 1 cos(q,d3)= 0