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```
In [99]: import numpy as np
import operator
```

1 Part 1

1.1 Multiples of 3 and 5.

```
In [100]: def multiples(x,limit):
            xlist=[]
            for i in range(limit):
                if i//x>=1 and i%x==0:
                    xlist.append(i)
            return xlist
print(sum(multiples(3,1000))+sum(multiples(5,1000))-sum(multiples(15,1000)))

233168
```

1.2 Integration

```
In [101]: def anonymous(x):
            return x**2 + 1
def integrate(fun, start, end):
    step = 0.1
    intercept = start
    area = 0
    while intercept < end:
        intercept += step
        area = area + step*fun(intercept)
    return area
print(round(integrate(anonymous, 0, 10), 3))

358.651
```

1.3 Counting

```
In [102]: urls = [
            "http://www.google.com/a.txt",
```

```

        "http://www.google.com.tw/a.txt",
        "http://www.google.com/download/c.jpg",
        "http://www.google.co.jp/a.txt",
        "http://www.google.com/b.txt",
        "https://facebook.com/movie/b.txt",
        "http://yahoo.com/123/000/c.jpg",
        "http://gliacloud.com/haha.png",
    ]

```

```

In [103]: def transform(URLS):
    TextName = []
    for Webname in URLS:
        a = 0
        for i in Webname[::-1]:
            a+=1
            if i==" / ":
                TextName.append(Webname[-a+1::])
                break
    return TextName
def Count(TextList):
    Countdict={}
    MySet = set(TextList)
    MyText = list(MySet)
    for Text in MyText:
        Countdict[Text] = TextList.count(Text)
    sorted_Countdict = sorted(Countdict.items(), key=operator.itemgetter(1), reverse=True)
    return sorted_Countdict
Answer = Count(transform(urls))
for i in range(3):
    print(Answer[i][0], Answer[i][1])

```

```

a.txt 3
b.txt 2
c.jpg 2

```

2 Part 2

2.1 (a)

Running out of time. I am not really familiar with web-crawler while using Python, but I am confident of myself learning and exceling how to do web-crawler before the internship starts.

2.2 (b)

I haven't tried using Python to construct web-related project. I'm currently self-learning Django.