

https://en.wikipedia.org/wiki/Birthday_problem (https://en.wikipedia.org/wiki/Birthday_problem)

In [5]:

```
def Birthday(n):  
    import numpy as np  
    days = []  
    r = np.random.rand(n)  
    for i in range(365):  
        days.append(False)  
    bd = False  
    for i in range(n):  
        number = int(364*r[i] + 1)  
        if (days[number]):  
            bd = True  
            break  
        days[number] = True  
    return bd
```

In [6]:

```
Birthday(200)
```

Out[6]:

True

In [19]:

```
def Probably(n, npts):  
    sum = 0.0  
    for i in range(npts):  
        if(Birthday(n)):  
            sum = sum + 1.0  
    return sum/npts
```

In [22]:

```
import numpy as np  
for i in np.arange(5,200,5):  
    pr = Probably(i,3000)  
    print(repr(pr))
```

[illegible]

In []: