In [1]:
```
from numpy import random
random.seed(0)
totals={20:0, 30:0, 40:0, 50:0, 60:0,70:0}
purchases={20:0, 30:0, 40:0, 50:0, 60:0,70:0}
totalPurchases=0
for _ in range(100000):
    ageDecade=random.choice([20,30,40,50,60,70])
    purchaseProbability=0.4
    totals[ageDecade]+=1
    if(random.random()< purchaseProbability):
        totalPurchases+=1
        purchases[ageDecade]+=1
```

In [2]:
```
PEF= float(purchases[30])/float(totals[30])
print("P(purchase|30s):"+str(PEF))
```

```
P(purchase|30s):0.3987604549010169
```

In [3]:
```
PE = float(totalPurchases) / 100000.0
print("P(Purchase):" + str(PE))
```

```
P(Purchase):0.4003
```

In [ ]: