Sampling_From_Probability_Distribution_From_Scratch

June 20, 2020

[43]:
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import random
from collections import Counter
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[61]:
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#lets assume if have the probability given below
letter_to_prob_dict = {'k':0.1,'a':0.1,'m':.8}
```

[62]:
```
#now draw 10 samples from this probabiliy distribution
def sampler_from_custom_discrete_distribution(distribution_dict):
    probs=[]
    events = []
    sumProb = 0

    for k,val in distribution_dict.items():
        events.append(k)
        probs.append(val)
        sumProb +=val


    prob = random.random()*sumProb
    i =0
    while (prob>0):
        prob -=probs[i]
        i +=1

    return events[i-1]
```

[63]:
```
samples =[]
for i in range(1000000):
    samples.
 ↪append(sampler_from_custom_discrete_distribution(letter_to_prob_dict))

for k,v in Counter(samples).items():
    print(k,'>>', Counter(samples)[k]/sum(Counter(samples).values()))
```

```
m >> 0.800113
a >> 0.099958
k >> 0.099929
```

[17]:
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random.random()
```

[17]:
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0.8584150167570875
```

[ ]:
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