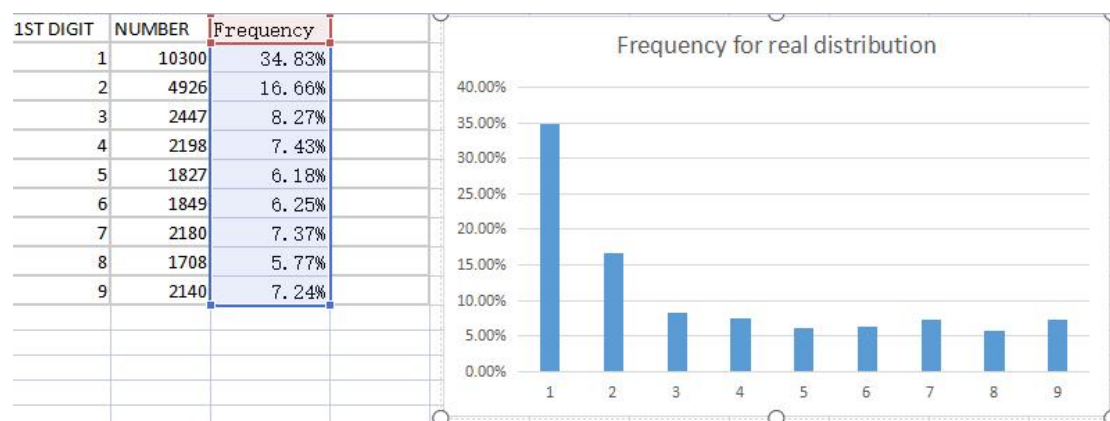
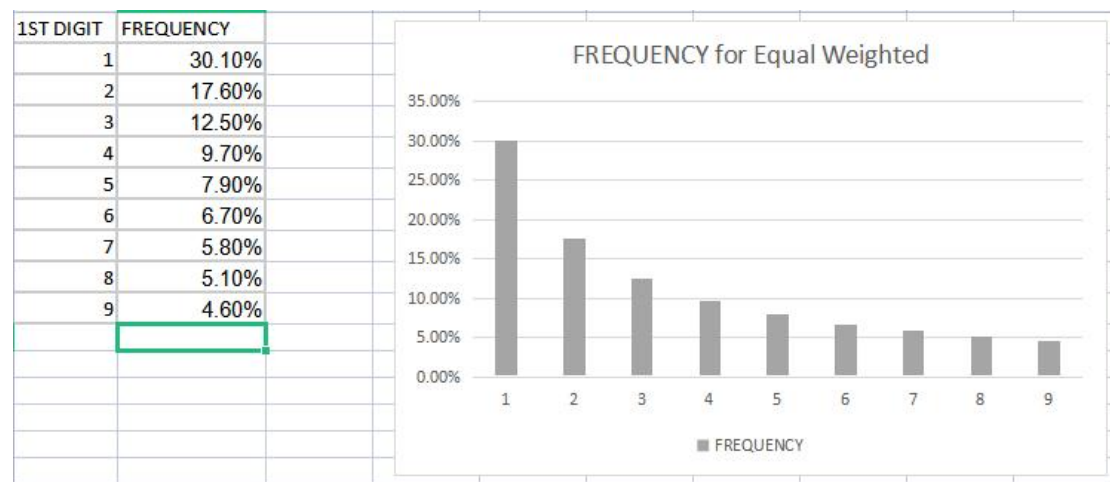
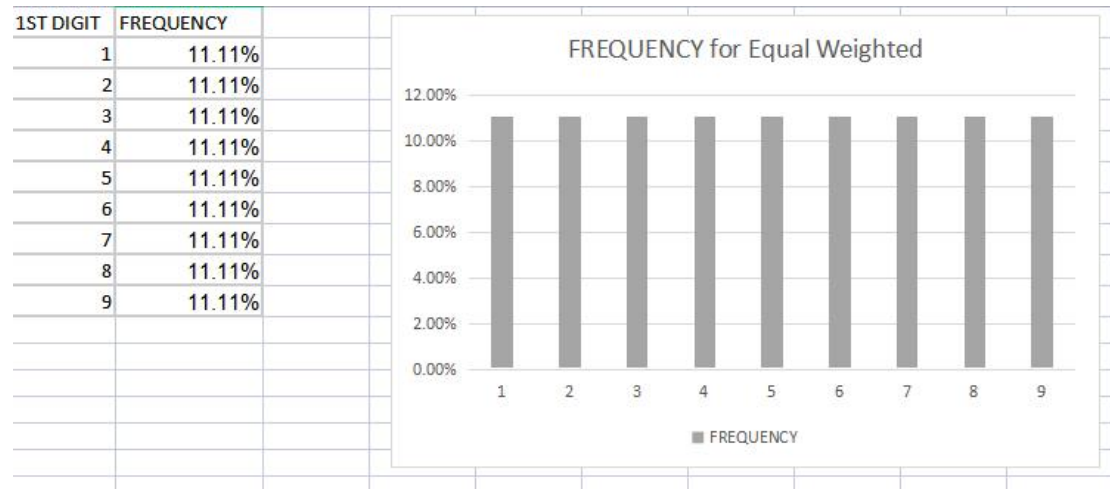
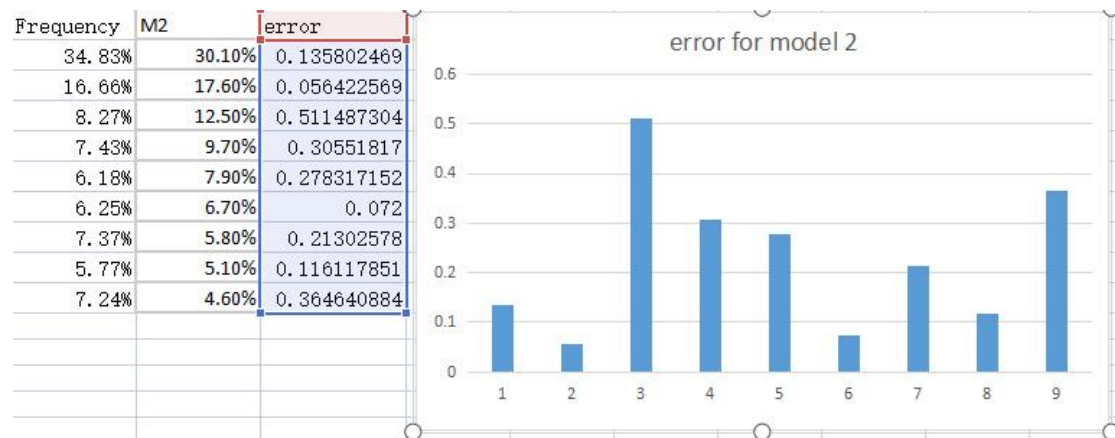
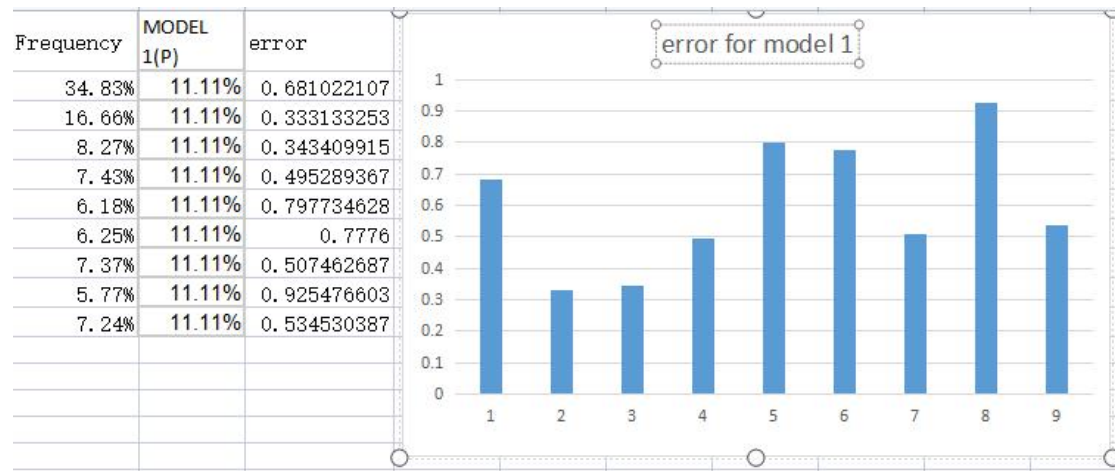


All solution were calculated after delete all none value

1



2



A	B	C	D	E	F
MODEL1	Frequency	Change	In %	RMSE	0.087537553
11.11%	34.83%	-0.2372	-23.72%		
11.11%	16.66%	-0.0555	-0.06%		
11.11%	8.27%	0.0284	-2.84%		
11.11%	7.43%	0.0368	3.68%		
11.11%	6.18%	0.0493	4.93%		
11.11%	6.25%	0.0486	4.86%		
11.11%	7.37%	0.0374	3.74%		
11.11%	5.77%	0.0534	5.34%		
11.11%	7.24%	0.0387	3.87%		
MODEL2	Frequency	Change	In %	RMSE	0.024118134
30.10%	34.83%	-0.0473	-4.73%		
17.60%	16.66%	0.0094	-0.94%		
12.50%	8.27%	0.0423	-4.23%		
9.70%	7.43%	0.0227	2.27%		
7.90%	6.18%	0.0172	1.72%		
6.70%	6.25%	0.0045	0.42%		
5.80%	7.37%	-0.0157	-1.57%		
5.10%	5.77%	-0.0067	-0.67%		
4.60%	7.24%	-0.0264	-0.03%		

Model 2 is closer to the real distribution

4:

All F values are Frequency value

All P values are Model 1 Value

All Pi values are Model 2 Value

Footwomen

1ST DIGIT	NUMBER	Frequency	in %	(F value)	
1	1308	0.2797861	27.98%		
2	852	0.182246	18.22%		
3	569	0.1217112	12.17%		
4	477	0.1020321	10.20%		
5	338	0.0722995	7.23%		
6	383	0.0819251	8.19%		
7	254	0.0543316	5.43%		
8	211	0.0451337	4.51%		
9	282	0.0603209	6.03%		
MODEL	Frequency	Change	in %	RMSE	0.071671341
11.11%	27.98%	-0.1687	-16.87%	(P value)	
11.11%	18.22%	-0.0711	-7.11%		
11.11%	12.17%	-0.0106	-1.06%		
11.11%	10.20%	0.0091	0.91%		
11.11%	7.23%	0.0388	3.88%		
11.11%	8.19%	0.0292	2.92%		
11.11%	5.43%	0.0568	5.68%		
11.11%	4.51%	0.066	6.60%		
11.11%	6.03%	0.0508	5.08%		
MODEL2(P i)	Frequency	Change	in %	RMSE	0.223581646
30.10%	27.98%	0.0212	2.12%	(pi value)	
17.60%	18.22%	-0.0062	-0.62%		
12.50%	12.17%	0.0033	0.33%		
9.70%	10.20%	-0.005	-0.50%		
7.90%	7.23%	0.0067	0.67%		
6.70%	8.19%	-0.0149	-1.49%		
5.80%	5.43%	0.0037	0.37%		
5.10%	4.51%	0.0059	0.59%		
4.60%	6.03%	-0.0143	-1.43%		

Watcheswomen

1ST DIGIT	Number	Frequency	in %	(F value)	
1	472	0.2902829	29.03%		
2	318	0.195572	19.56%		
3	188	0.1156212	11.56%		
4	172	0.1057811	10.58%		
5	141	0.0867159	8.67%		
6	154	0.0947109	9.47%		
7	118	0.0725707	7.26%		
8	78	0.0479705	4.80%		
9	82	0.0504305	5.04%		
MODEL	Frequency	Change	in %	RMSE	0.074022444
11.11%	29.03%	-0.1792	-17.92%	(P value)	
11.11%	19.56%	-0.0845	-8.45%		
11.11%	11.56%	-0.0045	-0.45%		
11.11%	10.58%	0.0053	0.53%		
11.11%	8.67%	0.0244	2.44%		
11.11%	9.47%	0.0164	1.64%		
11.11%	7.26%	0.0385	3.85%		
11.11%	4.80%	0.0631	6.31%		
11.11%	5.04%	0.0607	6.07%		
MODEL2(P i)	Frequency	Change	in %	RMSE	0.013874637
30.10%	29.03%	0.0107	1.07%	(pi value	
17.60%	19.56%	-0.0196	-1.96%		
12.50%	11.56%	0.0094	0.94%		
9.70%	10.58%	-0.0088	-0.88%		
7.90%	8.67%	-0.0077	-0.77%		
6.70%	9.47%	-0.0277	-2.77%		
5.80%	7.26%	-0.0146	-1.46%		
5.10%	4.80%	0.003	0.30%		
4.60%	5.04%	-0.0044	-0.44%		



# Jewellery

1ST DIGIT	Number	Frequency	in %	(F value)	
1	444	0.2730627	27.31%		
2	339	0.2084871	20.85%		
3	300	0.1845018	18.45%		
4	185	0.1137761	11.38%		
5	139	0.0854859	8.55%		
6	74	0.0455105	4.55%		
7	93	0.0571956	5.72%		
8	69	0.0424354	4.24%		
9	81	0.0498155	4.98%		
MODEL	Frequency	Change	in %	RMSE	0.07990753
11.11%	27.31%	-0.162	-16.20%	(P value)	
11.11%	20.85%	-0.0974	-9.74%		
11.11%	18.45%	-0.0734	-7.34%		
11.11%	11.38%	-0.0027	-0.27%		
11.11%	8.55%	0.0256	2.56%		
11.11%	4.55%	0.0656	6.56%		
11.11%	5.72%	0.0539	5.39%		
11.11%	4.24%	0.0687	6.87%		
11.11%	4.98%	0.0613	6.13%		
MODEL2(P i)	Frequency	Change	in %	RMSE	0.026486999
30.10%	27.31%	0.0279	2.79%	(pi value)	
17.60%	20.85%	-0.0325	-3.25%		
12.50%	18.45%	-0.0595	-5.95%		
9.70%	11.38%	-0.0168	-1.68%		
7.90%	8.55%	-0.0065	-0.65%		
6.70%	4.55%	0.0215	2.15%		
5.80%	5.72%	0.0008	0.80%		
5.10%	4.24%	0.0086	0.86%		
4.60%	4.98%	-0.0038	-0.38%		

According to these 3 categories and calculate their RMSE, the footwear women closet to the equal weight P

5

For each categories, we can see that model 2 is always closer to the real distribution than model 1. And also, if a categories list is long enough, it will close to the real distribution than other categories.