```
tiqu = readtable('tiqu.csv')
```

tiqu = 68×9 table

...

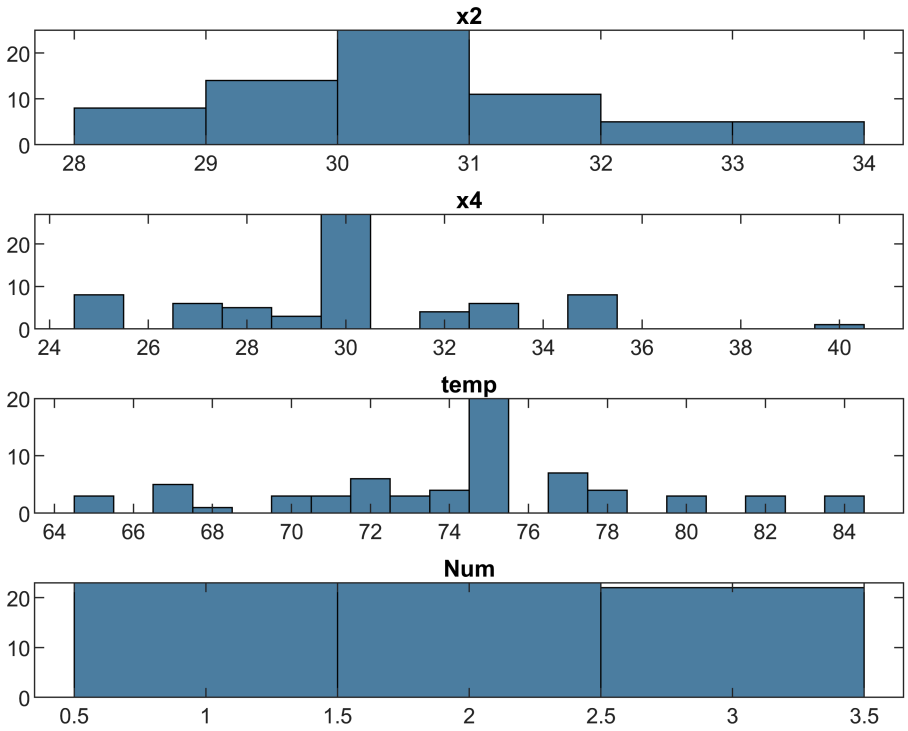
	Num	x2	x3	x4	temp	water	x7	y1
1	3	30.1700	35	30	75	6360	187	6.0000
2	2	32.1400	35	25	80	6360	187	7.0000
3	1	31.6600	35	27	75	6360	187	6.5000
4	3	29.3500	35	30	71	6360	187	6.0000
5	1	29.2900	35	33	71	6360	187	5.5000
6	2	28.7500	35	35	65	6360	187	4.5000
7	1	30.1000	35	30	72	6360	187	5.5000
8	3	29.1800	35	33	65	6360	187	5.5000
9	2	31.6700	35	30	75	6360	187	6.5000
10	3	30.5000	35	30	75	6360	187	6.0000
11	2	30.2900	35	30	75	6360	187	6.0000
12	1	30.1100	35	30	74	6360	187	5.5000
13	3	29.8000	35	33	70	6360	187	5.5000
14	2	31.0900	35	28	77	6360	187	6.0000
15	1	29.1400	35	33	68	6360	187	5.5000
16	3	30.5800	35	30	75	6360	187	6.0000
17	2	30.1400	35	30	73	6360	187	5.5000
18	1	30.1100	35	30	73	6360	187	5.5000
19	1	29.9600	35	30	73	6360	187	5.5000
20	3	30.5400	35	30	75	6360	187	6.0000
21	2	30.1800	35	30	74	6360	187	6.0000
22	1	28.7600	35	35	65	6360	187	4.5000
23	3	32.5400	35	25	80	6360	187	7.0000
24	2	31.2200	35	27	77	6360	187	6.5000
25	2	30.8700	35	30	75	6360	187	6.0000
26	1	32.9800	35	25	82	6360	187	7.0000
27	3	29.7800	35	32	74	6360	187	5.5000
28	1	33.5500	35	25	84	6360	187	7.0000
29	3	30.6800	35	30	75	6360	187	6.0000
30	2	31.2700	35	27	78	6360	187	6.0000
31	1	33.6900	35	25	84	6360	187	7.5000

	Num	x2	x3	x4	temp	water	x7	y1
32	2	28.7700	35	40	67	6360	187	4.5000
33	3	29.1300	35	35	70	6360	187	4.5000
34	2	29.8900	35	33	72	6360	187	6.0000
35	1	30.5700	35	30	75	6360	187	6.0000
36	3	31.0500	35	27	77	6360	187	6.5000
37	1	30.6600	35	30	75	6360	187	6.0000
38	3	30.7400	35	29	75	6360	187	6.0000
39	2	30.2800	35	30	74	6360	187	5.5000
40	1	30.6800	35	30	75	6360	187	6.0000
41	2	31.2300	35	28	77	6360	187	6.5000
42	3	31.5800	35	28	77	6360	187	6.5000
43	3	32.4900	35	27	78	6360	187	7.0000
44	2	30.0500	35	30	75	6360	187	5.5000
45	1	28.9700	35	35	72	6360	187	4.5000
46	3	33.7800	35	25	82	6360	187	7.0000
47	1	29.8500	35	30	71	6360	187	5.5000
48	2	30.9500	35	28	77	6360	187	6.0000
49	1	33.1700	35	25	82	6360	187	7.0000
50	3	31.2800	35	29	78	6360	187	6.5000
51	2	28.3900	35	35	67	6360	187	4.5000
52	3	28.8100	35	35	67	6360	187	4.5000
53	2	30.5800	35	30	75	6360	187	6.0000
54	1	31.2800	35	28	78	6360	187	6.5000
55	3	30.3800	35	30	75	6360	187	6.0000
56	2	30.1500	35	30	75	6360	187	5.5000
57	1	32.3200	35	27	80	6360	187	7.0000
58	3	30.3700	35	30	75	6360	187	6.0000
59	2	29.6800	35	32	72	6360	187	5.5000
60	1	29.6500	35	32	72	6360	187	5.5000
61	1	29.9900	35	32	72	6360	187	6.0000
62	3	31.5400	35	30	77	6360	187	6.5000
63	2	30.2200	35	30	75	6360	187	6.0000
64	1	30.7800	35	29	75	6360	187	6.0000
65	3	33.5300	35	25	84	6360	187	7.0000

	Num	x2	x3	x4	temp	water	x7	y1
66	2	28.3300	35	35	67	6360	187	4.0000
67	2	28.8900	35	35	67	6360	187	4.0000
68	1	29.1700	35	33	70	6360	187	4.5000

```
subplot(4,1,1)
histogram(tiqu{:,"x2"});
title("x2");
% x4
subplot(4,1,2)
histogram(tiqu{:,"x4"});
title("x4");
%temp
subplot(4,1,3)
histogram(tiqu{:,"temp"});
title("temp");

subplot(4,1,4)
histogram(tiqu{:,"Num"});
title("Num");
```




```
SampleNum = 300;
sz = [SampleNum,1];
```

gen fake stream

```
Num = randi(3,sz);
% norm fit
[mu,sigma] = normfit(tiqu{:,"x2"});
x2 = normrnd(mu,sigma,sz);
Counts = tabulate(tiqu{:,'x4'});
noZeroIndex = Counts(:,2)>0;
s = RandStream('mlfg6331_64');
x4 = datasample(s,Counts(noZeroIndex,1),SampleNum,'Weights',Counts(noZeroIndex,3));

Counts = tabulate(tiqu{:,'temp'});
noZeroIndex = Counts(:,2)>0;
temp = datasample(s,Counts(noZeroIndex,1),SampleNum,'Weights',Counts(noZeroIndex,3));
% 新建一个空的dataFrame
types = {'double','double','double','double','double','double','double'};
names = tiqu.Properties.VariableNames(1:7);
fake_Gen = table('Size',[SampleNum,7],'VariableTypes',types,'VariableNames',names);
%%
fake_Gen{:,"x3"} = 35*ones(sz);
fake_Gen{:,"water"} = 6360*ones(sz);
fake_Gen{:,"x7"} = 187*ones(sz);

fake_Gen{:,"Num"} = Num;
fake_Gen{:,"x2"} = x2;
fake_Gen{:,"temp"} = temp;
fake_Gen{:,"x4"} = x4;
fake_Gen
```

fake_Gen = 300×7 table

	Num	x2	x3	x4	temp	water	x7
1	3	27.2974	35	30	75	6360	187
2	3	31.3442	35	32	73	6360	187
3	1	27.6851	35	30	65	6360	187
4	3	27.5178	35	30	67	6360	187
5	2	30.6830	35	32	73	6360	187
6	1	29.3262	35	30	75	6360	187
7	1	31.1204	35	32	74	6360	187
8	2	31.4706	35	30	75	6360	187
9	3	31.7091	35	25	75	6360	187
10	3	29.6657	35	25	80	6360	187
11	1	31.1703	35	30	67	6360	187
12	3	30.7103	35	33	70	6360	187
13	3	31.6673	35	29	78	6360	187
14	2	31.2848	35	30	75	6360	187

	Num	x2	x3	x4	temp	water	x7
15	3	31.7621	35	30	75	6360	187
16	1	30.4034	35	30	75	6360	187
17	2	30.3833	35	33	74	6360	187
18	3	31.9070	35	30	73	6360	187
19	3	27.7758	35	27	68	6360	187
20	3	29.9118	35	30	75	6360	187
21	2	28.9012	35	30	74	6360	187
22	1	30.0728	35	33	75	6360	187
23	3	31.4333	35	33	67	6360	187
24	3	31.6669	35	30	67	6360	187
25	3	29.2385	35	28	77	6360	187
26	3	29.9560	35	35	80	6360	187
27	3	30.7583	35	30	80	6360	187
28	2	30.1925	35	30	77	6360	187
29	2	30.9757	35	25	70	6360	187
30	1	31.1051	35	30	78	6360	187
31	3	29.3506	35	30	72	6360	187
32	1	30.3442	35	30	65	6360	187
33	1	27.7647	35	30	80	6360	187
34	1	32.0885	35	33	78	6360	187
35	1	29.7476	35	35	75	6360	187
36	3	28.9893	35	35	65	6360	187
37	3	30.2425	35	28	73	6360	187
38	1	28.6927	35	30	84	6360	187
39	3	30.5500	35	28	78	6360	187
40	1	29.8378	35	35	77	6360	187
41	2	33.4506	35	30	70	6360	187
42	2	32.0794	35	30	67	6360	187
43	3	27.2834	35	35	70	6360	187
44	3	31.1597	35	25	75	6360	187
45	1	28.7330	35	27	72	6360	187
46	2	30.2410	35	35	67	6360	187
47	2	30.7944	35	28	82	6360	187
48	2	31.5640	35	32	77	6360	187

	Num	x2	x3	x4	temp	water	x7
49	3	30.2173	35	35	65	6360	187
50	3	32.6571	35	35	67	6360	187
51	1	29.9430	35	30	75	6360	187
52	3	31.0096	35	32	77	6360	187
53	2	31.4545	35	25	84	6360	187
54	1	30.6899	35	33	72	6360	187
55	1	31.7397	35	27	75	6360	187
56	2	31.0039	35	30	72	6360	187
57	3	29.5430	35	30	75	6360	187
58	2	28.1957	35	27	80	6360	187
59	2	33.0295	35	30	75	6360	187
60	1	29.7800	35	30	80	6360	187
61	3	30.7139	35	27	84	6360	187
62	1	31.3205	35	30	74	6360	187
63	2	30.7274	35	28	75	6360	187
64	3	29.3839	35	30	71	6360	187
65	3	29.9605	35	25	75	6360	187
66	3	30.4127	35	25	74	6360	187
67	2	32.5286	35	40	74	6360	187
68	1	29.4419	35	28	73	6360	187
69	1	31.6127	35	30	77	6360	187
70	1	30.9847	35	30	78	6360	187
71	3	30.2690	35	30	77	6360	187
72	1	29.1831	35	30	75	6360	187
73	3	30.2026	35	35	75	6360	187
74	1	30.4631	35	25	82	6360	187
75	3	28.6390	35	40	84	6360	187
76	2	30.8310	35	27	67	6360	187
77	1	29.4927	35	27	75	6360	187
78	1	30.4532	35	30	75	6360	187
79	2	31.0211	35	30	73	6360	187
80	2	29.3840	35	27	75	6360	187
81	2	30.1972	35	33	75	6360	187
82	3	31.0393	35	27	78	6360	187

	Num	x2	x3	x4	temp	water	x7
83	2	28.1555	35	28	75	6360	187
84	2	31.9442	35	30	82	6360	187
85	3	33.7760	35	30	75	6360	187
86	1	31.8432	35	33	78	6360	187
87	3	30.1609	35	30	73	6360	187
88	3	31.1430	35	30	77	6360	187
89	2	29.2108	35	25	73	6360	187
90	2	33.0549	35	29	75	6360	187
91	1	31.8185	35	32	73	6360	187
92	1	31.6162	35	30	77	6360	187
93	2	29.4220	35	30	80	6360	187
94	3	30.9996	35	30	72	6360	187
95	3	29.8410	35	28	75	6360	187
96	1	30.1666	35	30	78	6360	187
97	2	29.8255	35	35	82	6360	187
98	2	29.2243	35	35	72	6360	187
99	1	29.3786	35	32	75	6360	187
100	2	30.3006	35	30	75	6360	187

⋮

```
writetable(fake_Gen,"Gendata.csv")
```