1. Data set

The table is too wide so I cut it into 3 parts. This data set contains the county name, marriage number of each month, total marriage number of each county, which are provided by the assignment document. The dataset also contain the population of each cou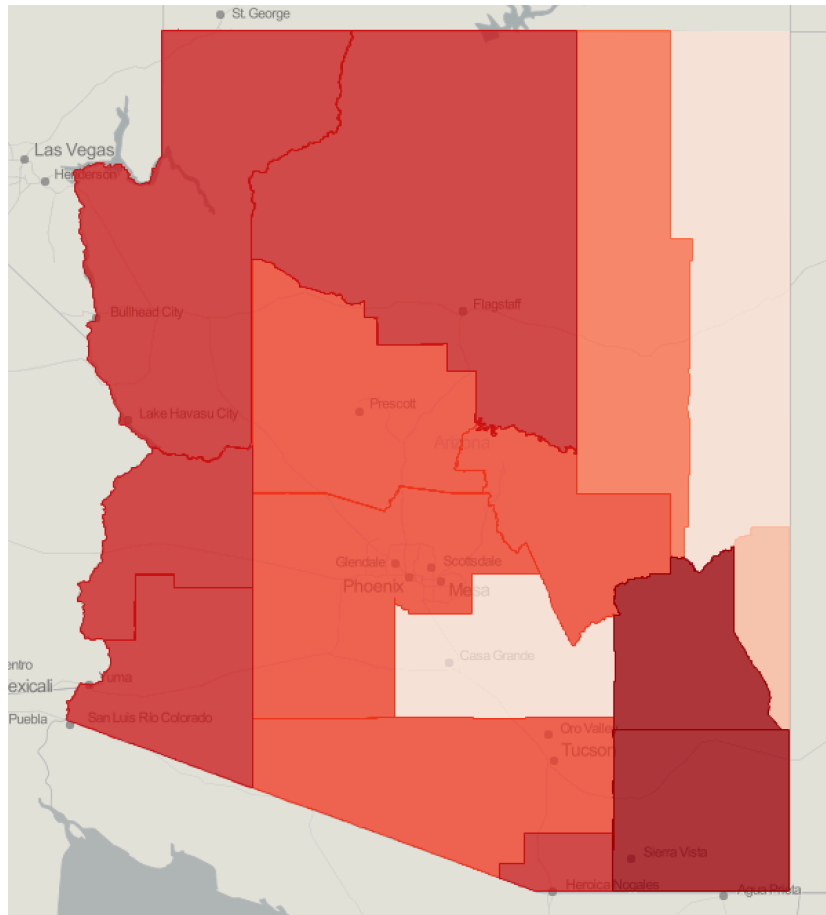nty in 2010, which can be found in this website: http://www.azcentral.com/community/pinal/articles/20110310census-arizona-new-2010-numbers-brk10-ONbox.html
Also by normalizing the data I get the marriage rate of each month and the total marriage rate of each county.

County	Jan	JanRate	Feb	FebRate	Mar	MarRate	Apr	AprRate	May	MayRate
Apache	11	0.00015381	23	0.0003216	19	0.00026567	16	0.00022372	16	0.00022372
Pinal	87	0.00023153	124	0.00032999	144	0.00038321	124	0.00032999	117	0.00031136
Greenlee	1	0.00011853	0	0	2	0.00023705	4	0.0004741	1	0.00011853
Navajo	23	0.00021406	36	0.00033504	32	0.00029782	43	0.00040019	22	0.00020475
Yavapai	61	0.00028905	75	0.0003554	50	0.00023693	107	0.00050703	133	0.00063023
Gila	19	0.0003545	15	0.00027987	30	0.00055973	25	0.00046644	28	0.00052242
Maricopa	1702	0.00044589	1356	0.00035524	2505	0.00065625	2501	0.00065521	2392	0.00062665
Pima	347	0.00035399	454	0.00046314	493	0.00050293	624	0.00063656	545	0.00055597
Mohave	68	0.00033968	101	0.00050453	122	0.00060943	106	0.00052951	133	0.00066438
La Paz	12	0.00058568	14	0.00068329	12	0.00058568	9	0.00043926	14	0.00068329
Santa Cruz	18	0.00037959	16	0.00033741	26	0.00054829	22	0.00046394	29	0.00061156
Yuma	78	0.00039847	140	0.00071519	118	0.00060281	130	0.00066411	110	0.00056194
Coconino	43	0.00031989	57	0.00042404	57	0.00042404	70	0.00052075	68	0.00050587
Cochise	56	0.00042636	88	0.00066999	95	0.00072328	84	0.00063953	77	0.00058624
Graham	20	0.00053735	23	0.00061795	20	0.00053735	15	0.00040301	25	0.00067168

Jun	JunRate	Jul	JulRate	Aug	AugRate	Sep	SepRate	Oct	OctRate	Nov	NovRate
30	0.00041948	17	0.0002377	28	0.00039151	19	0.00026567	13	0.00018177	14	0.00019576
115	0.00030604	98	0.0002608	96	0.00025548	108	0.00028741	122	0.00032467	117	0.00031136
6	0.00071115	3	0.00035558	3	0.00035558	5	0.00059263	5	0.00059263	1	0.00011853
61	0.00056771	84	0.00078177	39	0.00036296	38	0.00035366	136	0.00126572	12	0.00011168
147	0.00069657	84	0.00039804	109	0.00051651	111	0.00052598	161	0.00076291	104	0.00049281
20	0.00037316	25	0.00046644	37	0.00069034	14	0.00026121	55	0.00102618	23	0.00042913
2111	0.00055304	1693	0.00044353	1447	0.00037908	1434	0.00037568	2290	0.00059993	2134	0.00055906
616	0.0006284	561	0.0005723	363	0.00037031	401	0.00040907	570	0.00058148	503	0.00051313
147	0.00073432	99	0.00049454	109	0.00054449	92	0.00045957	156	0.00077928	96	0.00047955
8	0.00039045	12	0.00058568	5	0.00024403	9	0.00043926	13	0.00063449	7	0.00034165
81	0.00170814	20	0.00042176	21	0.00044285	21	0.00044285	24	0.00050612	17	0.0003585
127	0.00064878	89	0.00045466	96	0.00049042	87	0.00044444	111	0.00056705	110	0.00056194
140	0.0010415	104	0.00077369	83	0.00061746	97	0.00072161	92	0.00068442	54	0.00040172
94	0.00071567	74	0.0005634	92	0.00070044	74	0.0005634	91	0.00069283	71	0.00054056
41	0.00110156	18	0.00048361	21	0.00056421	25	0.00067168	29	0.00077915	25	0.00067168

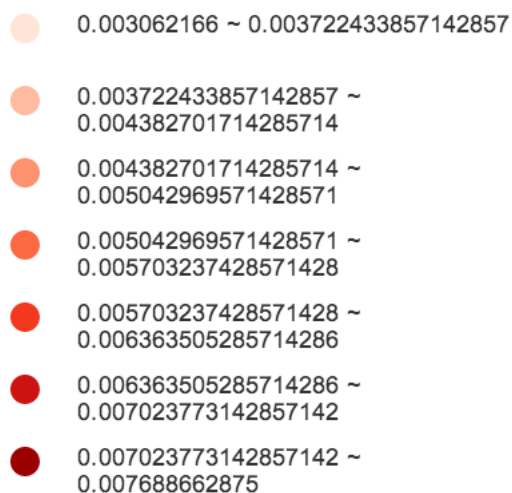| Dec	DecRate	Total	County Population	Marriage Rate
13	0.00018177	219	71518	0.003062166
121	0.00032201	1373	375770	0.003653831
2	0.00023705	33	8437	0.003911343
53	0.00049326	579	107449	0.005388603
95	0.00045017	1237	211033	0.005861642
26	0.0004851	317	53597	0.00591451
1562	0.00040921	23127	3817117	0.006058761
495	0.00050497	5972	980263	0.006092243
75	0.00037465	1304	200186	0.006513942
20	0.00097613	135	20489	0.006588901
19	0.00040068	314	47420	0.006621679
113	0.00057726	1309	195751	0.006687067
50	0.00037197	915	134421	0.006806972
60	0.00045681	956	131346	0.007278486
24	0.00064482	286	37220	0.007684041

2. Problem 1 using equal interval classification

To generate this graph I used 2 columns of the data set, which was county names and total marriage rate of each county. I uploaded the data to the geocommon.com, and chose equal interval classification to generate the graph. The second graph shows the marriage rate range of each color.

Arizona1
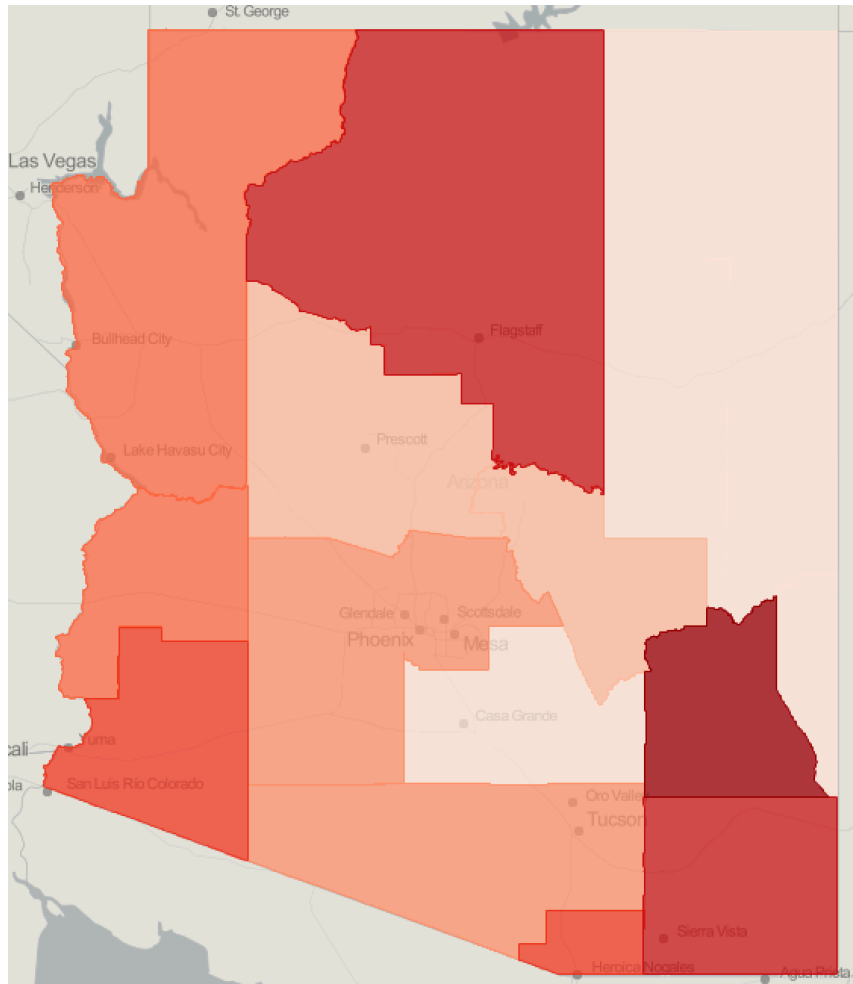
by marriage rate

- 0.003062166 ~ 0.003722433857142857

- 0.003722433857142857 ~ 0.004382701714285714

- 0.004382701714285714 ~ 0.005042969571428571

- 0.005042969571428571 ~ 0.005703237428571428

- 0.005703237428571428 ~ 0.006363505285714286

- 0.006363505285714286 ~ 0.007023773142857142

- 0.007023773142857142 ~ 0.007688662875

3. Problem 2 using quantile classification

To generate this graph I also used 2 columns of the data set, which was county names and total marriage rate of each county. I uploaded the data to the geocommon.com, and chose quantile classification to generate the graph. The second graph shows the marriage rate range of each color.

Arizona1
by marriage rate

- 0.003 ~ 0.0054
- 0.0054 ~ 0.006
- 0.006 ~ 0.0061
- 0.0061 ~ 0.0066
- 0.0066 ~ 0.0067
- 0.0067 ~ 0.0073
- 0.0073 ~ 0.0077

4. Problem3

For problem3 I chose quantile classification to classify the data.
The quantile method classifies data into a certain number of categories with an equal number of units in each category, while the equal interval method sets the value ranges in each category equal in size. For this problem, apparently the quantile classification will better show the marriage rate change through months.