This notebook is created by

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This notebook presents an analysis of hurricane events reported in the United States from 2014 to 2018. Key events have been identified, and insights have been derived based on the data during this period.

Data import

```
data_18= readtable('StormEvents_2018.csv');
data_17= readtable('StormEvents_2017.csv');
data_16= readtable('StormEvents_2016.csv');
data_15= readtable('StormEvents_2015.csv');
data_14= readtable('StormEvents_2014.csv');
```

```
data_18 = convert_to_cat(data_18,'Event_Type');
data_17 = convert_to_cat(data_17,'Event_Type');
data_16 = convert_to_cat(data_16,'Event_Type');
data_15 = convert_to_cat(data_15,'Event_Type');
data_14 = convert_to_cat(data_14,'Event_Type');
```

```
data_18_hurricane= data_18(data_18.Event_Type == "Hurricane",:);
data_17_hurricane= data_17(data_17.Event_Type == "Hurricane",:);
data_16_hurricane= data_16(data_16.Event_Type == "Hurricane" | data_16.Event_Type == "Hurricane
data_15_hurricane= data_15(data_15.Event_Type == "Hurricane" | data_15.Event_Type == "Hurricane
data_14_hurricane= data_14(data_14.Event_Type == "Hurricane" | data_14.Event_Type == "Hurricane
```

View data points

```
data_14_hurricane
```

data_14_hurricane = 6×23 table

...

	EpisodeID	Event_ID	State	Year	Month	Event_Type
1	91089	546019	'GUAM'	2014	'October'	Hurricane (Typhoon)
2	91089	546021	'GUAM'	2014	'October'	Hurricane (Typhoon)
3	87288	536943	'NORTH CARO...'	2014	'July'	Hurricane (Typhoon)
4	87288	536929	'NORTH CARO...'	2014	'July'	Hurricane (Typhoon)
5	87288	536939	'NORTH CARO...'	2014	'July'	Hurricane (Typhoon)

	EpisodeID	Event_ID	State	Year	Month	Event_Type
6	93313	560233	'GUAM'	2014	'December'	Hurricane (Typhoon)

```
data_14_hurricane= convert_to_cat(data_14_hurricane,'State');
```

data_15_hurricane

data_15_hurricane = 7×23 table

...

	EpisodeID	Event_ID	State	Year	Month	Event_Type
1	96339	579262	'GUAM'	2015	'March'	Hurricane (Typhoon)
2	99324	596410	'GUAM'	2015	'April'	Hurricane (Typhoon)
3	100511	601887	'GUAM'	2015	'August'	Hurricane (Typhoon)
4	99329	596424	'GUAM'	2015	'May'	Hurricane (Typhoon)
5	99329	596425	'GUAM'	2015	'May'	Hurricane (Typhoon)
6	99327	596416	'GUAM'	2015	'May'	Hurricane (Typhoon)
7	99329	596423	'GUAM'	2015	'May'	Hurricane (Typhoon)

data_16_hurricane

data_16_hurricane = 33×23 table

...

	EpisodeID	Event_ID	State	Year	Month	Event_Type
1	110427	663542	'NORTH CARO...	2016	'October'	Hurricane (Typhoon)
2	105572	633404	'AMERICAN S...	2016	'April'	Hurricane (Typhoon)
3	105572	633406	'AMERICAN S...	2016	'April'	Hurricane (Typhoon)
4	111078	663945	'SOUTH CARO...	2016	'October'	Hurricane (Typhoon)
5	110904	663246	'NORTH CARO...	2016	'October'	Hurricane (Typhoon)
6	111078	663941	'SOUTH CARO...	2016	'October'	Hurricane (Typhoon)
7	110904	663244	'NORTH CARO...	2016	'October'	Hurricane (Typhoon)
8	111078	663950	'SOUTH CARO...	2016	'October'	Hurricane (Typhoon)
9	110904	663080	'NORTH CARO...	2016	'October'	Hurricane (Typhoon)
10	111078	663940	'SOUTH CARO...	2016	'October'	Hurricane (Typhoon)
11	110904	663079	'NORTH CARO...	2016	'October'	Hurricane (Typhoon)
12	110904	663082	'NORTH CARO...	2016	'October'	Hurricane (Typhoon)
13	110904	663084	'NORTH CARO...	2016	'October'	Hurricane (Typhoon)
14	111078	663946	'SOUTH CARO...	2016	'October'	Hurricane (Typhoon)

	EpisodeID	Event_ID	State	Year	Month	Event_Type
15	108553	655883	'FLORIDA'	2016	'September'	Hurricane (Typhoon)
16	108553	655884	'FLORIDA'	2016	'September'	Hurricane (Typhoon)
17	108553	655885	'FLORIDA'	2016	'September'	Hurricane (Typhoon)
18	108553	655886	'FLORIDA'	2016	'September'	Hurricane (Typhoon)
19	108553	655887	'FLORIDA'	2016	'September'	Hurricane (Typhoon)
20	108553	655889	'FLORIDA'	2016	'September'	Hurricane (Typhoon)
21	108553	657382	'FLORIDA'	2016	'September'	Hurricane (Typhoon)
22	108553	657383	'FLORIDA'	2016	'September'	Hurricane (Typhoon)
23	110795	664314	'GEORGIA'	2016	'October'	Hurricane
24	110795	666603	'GEORGIA'	2016	'October'	Hurricane
25	110795	666604	'GEORGIA'	2016	'October'	Hurricane
26	110795	664274	'GEORGIA'	2016	'October'	Hurricane
27	110795	664248	'GEORGIA'	2016	'October'	Hurricane
28	110795	664272	'GEORGIA'	2016	'October'	Hurricane
29	110795	664250	'GEORGIA'	2016	'October'	Hurricane
30	110795	664264	'GEORGIA'	2016	'October'	Hurricane
31	110737	661501	'FLORIDA'	2016	'October'	Hurricane
32	110737	661647	'FLORIDA'	2016	'October'	Hurricane
33	110737	661648	'FLORIDA'	2016	'October'	Hurricane

```
data_16_hurricane= convert_to_cat(data_16_hurricane,'State');
```

```
data_17_hurricane
```

data_17_hurricane = 45×23 table

...

	EpisodeID	Event_ID	State	Year	Month	Event_Type
1	120357	721909	'PUERTO RICO'	2017	'September'	Hurricane
2	120357	721910	'PUERTO RICO'	2017	'September'	Hurricane
3	120357	721916	'PUERTO RICO'	2017	'September'	Hurricane
4	120357	721917	'PUERTO RICO'	2017	'September'	Hurricane
5	120357	721918	'PUERTO RICO'	2017	'September'	Hurricane
6	120357	721919	'PUERTO RICO'	2017	'September'	Hurricane
7	120357	721920	'PUERTO RICO'	2017	'September'	Hurricane
8	120357	721921	'PUERTO RICO'	2017	'September'	Hurricane

	EpisodeID	Event_ID	State	Year	Month	Event_Type
9	120357	721922	'PUERTO RICO'	2017	'September'	Hurricane
10	120357	721907	'PUERTO RICO'	2017	'September'	Hurricane
11	120357	721908	'PUERTO RICO'	2017	'September'	Hurricane
12	119520	721768	'FLORIDA'	2017	'September'	Hurricane
13	119520	721803	'FLORIDA'	2017	'September'	Hurricane
14	119520	721815	'FLORIDA'	2017	'September'	Hurricane
15	119520	721999	'FLORIDA'	2017	'September'	Hurricane
16	119520	722000	'FLORIDA'	2017	'September'	Hurricane
17	119520	722003	'FLORIDA'	2017	'September'	Hurricane
18	119520	721819	'FLORIDA'	2017	'September'	Hurricane
19	119520	721735	'FLORIDA'	2017	'September'	Hurricane
20	119520	721737	'FLORIDA'	2017	'September'	Hurricane
21	119520	721738	'FLORIDA'	2017	'September'	Hurricane
22	119520	721791	'FLORIDA'	2017	'September'	Hurricane
23	119520	721736	'FLORIDA'	2017	'September'	Hurricane
24	119520	721812	'FLORIDA'	2017	'September'	Hurricane
25	119520	721998	'FLORIDA'	2017	'September'	Hurricane
26	119520	721739	'FLORIDA'	2017	'September'	Hurricane
27	119520	721769	'FLORIDA'	2017	'September'	Hurricane
28	120809	723457	'FLORIDA'	2017	'September'	Hurricane
29	120809	723459	'FLORIDA'	2017	'September'	Hurricane
30	120690	722895	'FLORIDA'	2017	'September'	Hurricane
31	120809	723450	'FLORIDA'	2017	'September'	Hurricane
32	120690	722914	'FLORIDA'	2017	'September'	Hurricane
33	120690	723255	'FLORIDA'	2017	'September'	Hurricane
34	120690	723286	'FLORIDA'	2017	'September'	Hurricane
35	120690	723287	'FLORIDA'	2017	'September'	Hurricane
36	120175	724808	'MISSISSIPPI'	2017	'October'	Hurricane
37	119859	720923	'TEXAS'	2017	'August'	Hurricane
38	120214	720264	'TEXAS'	2017	'August'	Hurricane
39	119859	720925	'TEXAS'	2017	'August'	Hurricane
40	119859	720927	'TEXAS'	2017	'August'	Hurricane
41	119859	721354	'TEXAS'	2017	'August'	Hurricane

	EpisodeID	Event_ID	State	Year	Month	Event_Type
42	119859	720951	'TEXAS'	2017	'August'	Hurricane
43	119859	721002	'TEXAS'	2017	'August'	Hurricane
44	119859	721006	'TEXAS'	2017	'August'	Hurricane
45	119859	718519	'TEXAS'	2017	'August'	Hurricane

```
data_17_hurricane= convert_to_cat(data_17_hurricane,'State');
```

data_18_hurricane

data_18_hurricane = 60×23 table

...

	EpisodeID	Event_ID	State	Year	Month	Event_Type
1	130719	786771	'NORTH CARO...	2018	'September'	Hurricane
2	131561	786993	'NORTH CARO...	2018	'September'	Hurricane
3	131188	784960	'SOUTH CARO...	2018	'September'	Hurricane
4	130979	787021	'NORTH CARO...	2018	'September'	Hurricane
5	131188	784961	'SOUTH CARO...	2018	'September'	Hurricane
6	130719	786760	'NORTH CARO...	2018	'September'	Hurricane
7	130719	786783	'NORTH CARO...	2018	'September'	Hurricane
8	130979	787008	'NORTH CARO...	2018	'September'	Hurricane
9	130979	787006	'NORTH CARO...	2018	'September'	Hurricane
10	130979	787014	'NORTH CARO...	2018	'September'	Hurricane
11	130979	787007	'NORTH CARO...	2018	'September'	Hurricane
12	129101	773860	'HAWAII'	2018	'August'	Hurricane
13	131655	793305	'GEORGIA'	2018	'October'	Hurricane
14	131655	793307	'GEORGIA'	2018	'October'	Hurricane
15	129101	773861	'HAWAII'	2018	'August'	Hurricane
16	129101	773872	'HAWAII'	2018	'August'	Hurricane
17	129101	773881	'HAWAII'	2018	'August'	Hurricane
18	129101	773862	'HAWAII'	2018	'August'	Hurricane
19	130186	790398	'GEORGIA'	2018	'October'	Hurricane
20	131655	793504	'GEORGIA'	2018	'October'	Hurricane
21	131655	793326	'GEORGIA'	2018	'October'	Hurricane
22	131655	793324	'GEORGIA'	2018	'October'	Hurricane
23	130185	790378	'FLORIDA'	2018	'October'	Hurricane

	EpisodeID	Event_ID	State	Year	Month	Event_Type
24	130185	790379	'FLORIDA'	2018	'October'	Hurricane
25	130185	790380	'FLORIDA'	2018	'October'	Hurricane
26	130185	790381	'FLORIDA'	2018	'October'	Hurricane
27	130185	790382	'FLORIDA'	2018	'October'	Hurricane
28	130185	790383	'FLORIDA'	2018	'October'	Hurricane
29	129101	773877	'HAWAII'	2018	'August'	Hurricane
30	129101	773878	'HAWAII'	2018	'August'	Hurricane
31	129101	773880	'HAWAII'	2018	'August'	Hurricane
32	130185	790384	'FLORIDA'	2018	'October'	Hurricane
33	130185	790385	'FLORIDA'	2018	'October'	Hurricane
34	131655	793508	'GEORGIA'	2018	'October'	Hurricane
35	131655	793306	'GEORGIA'	2018	'October'	Hurricane
36	131655	793328	'GEORGIA'	2018	'October'	Hurricane
37	131655	793325	'GEORGIA'	2018	'October'	Hurricane
38	131655	793327	'GEORGIA'	2018	'October'	Hurricane
39	129101	773855	'HAWAII'	2018	'August'	Hurricane
40	130186	790399	'GEORGIA'	2018	'October'	Hurricane
41	130186	790400	'GEORGIA'	2018	'October'	Hurricane
42	130186	790401	'GEORGIA'	2018	'October'	Hurricane
43	130186	790402	'GEORGIA'	2018	'October'	Hurricane
44	130186	790403	'GEORGIA'	2018	'October'	Hurricane
45	130186	790404	'GEORGIA'	2018	'October'	Hurricane
46	130186	790405	'GEORGIA'	2018	'October'	Hurricane
47	130186	790406	'GEORGIA'	2018	'October'	Hurricane
48	130186	790407	'GEORGIA'	2018	'October'	Hurricane
49	130186	790408	'GEORGIA'	2018	'October'	Hurricane
50	130186	790409	'GEORGIA'	2018	'October'	Hurricane
51	129101	773882	'HAWAII'	2018	'August'	Hurricane
52	130184	790368	'ALABAMA'	2018	'October'	Hurricane
53	130185	789475	'FLORIDA'	2018	'October'	Hurricane
54	130185	790373	'FLORIDA'	2018	'October'	Hurricane
55	130185	790374	'FLORIDA'	2018	'October'	Hurricane
56	130185	790375	'FLORIDA'	2018	'October'	Hurricane

	EpisodeID	Event_ID	State	Year	Month	Event_Type
57	130185	790376	'FLORIDA'	2018	'October'	Hurricane
58	130185	790377	'FLORIDA'	2018	'October'	Hurricane
59	129101	773857	'HAWAII'	2018	'August'	Hurricane
60	129101	773859	'HAWAII'	2018	'August'	Hurricane

Joining all data

```
df= vertcat(data_18_hurricane, data_17_hurricane, data_16_hurricane, data_15_hurricane,data_14
```

df = 151×23 table

...

	EpisodeID	Event_ID	State	Year	Month	Event_Type
1	130719	786771	NORTH CARO...	2018	'September'	Hurricane
2	131561	786993	NORTH CARO...	2018	'September'	Hurricane
3	131188	784960	SOUTH CARO...	2018	'September'	Hurricane
4	130979	787021	NORTH CARO...	2018	'September'	Hurricane
5	131188	784961	SOUTH CARO...	2018	'September'	Hurricane
6	130719	786760	NORTH CARO...	2018	'September'	Hurricane
7	130719	786783	NORTH CARO...	2018	'September'	Hurricane
8	130979	787008	NORTH CARO...	2018	'September'	Hurricane
9	130979	787006	NORTH CARO...	2018	'September'	Hurricane
10	130979	787014	NORTH CARO...	2018	'September'	Hurricane
11	130979	787007	NORTH CARO...	2018	'September'	Hurricane
12	129101	773860	HAWAII	2018	'August'	Hurricane
13	131655	793305	GEORGIA	2018	'October'	Hurricane
14	131655	793307	GEORGIA	2018	'October'	Hurricane
15	129101	773861	HAWAII	2018	'August'	Hurricane
16	129101	773872	HAWAII	2018	'August'	Hurricane
17	129101	773881	HAWAII	2018	'August'	Hurricane
18	129101	773862	HAWAII	2018	'August'	Hurricane
19	130186	790398	GEORGIA	2018	'October'	Hurricane
20	131655	793504	GEORGIA	2018	'October'	Hurricane
21	131655	793326	GEORGIA	2018	'October'	Hurricane
22	131655	793324	GEORGIA	2018	'October'	Hurricane
23	130185	790378	FLORIDA	2018	'October'	Hurricane

	EpisodeID	Event_ID	State	Year	Month	Event_Type
24	130185	790379	FLORIDA	2018	'October'	Hurricane
25	130185	790380	FLORIDA	2018	'October'	Hurricane
26	130185	790381	FLORIDA	2018	'October'	Hurricane
27	130185	790382	FLORIDA	2018	'October'	Hurricane
28	130185	790383	FLORIDA	2018	'October'	Hurricane
29	129101	773877	HAWAII	2018	'August'	Hurricane
30	129101	773878	HAWAII	2018	'August'	Hurricane
31	129101	773880	HAWAII	2018	'August'	Hurricane
32	130185	790384	FLORIDA	2018	'October'	Hurricane
33	130185	790385	FLORIDA	2018	'October'	Hurricane
34	131655	793508	GEORGIA	2018	'October'	Hurricane
35	131655	793306	GEORGIA	2018	'October'	Hurricane
36	131655	793328	GEORGIA	2018	'October'	Hurricane
37	131655	793325	GEORGIA	2018	'October'	Hurricane
38	131655	793327	GEORGIA	2018	'October'	Hurricane
39	129101	773855	HAWAII	2018	'August'	Hurricane
40	130186	790399	GEORGIA	2018	'October'	Hurricane
41	130186	790400	GEORGIA	2018	'October'	Hurricane
42	130186	790401	GEORGIA	2018	'October'	Hurricane
43	130186	790402	GEORGIA	2018	'October'	Hurricane
44	130186	790403	GEORGIA	2018	'October'	Hurricane
45	130186	790404	GEORGIA	2018	'October'	Hurricane
46	130186	790405	GEORGIA	2018	'October'	Hurricane
47	130186	790406	GEORGIA	2018	'October'	Hurricane
48	130186	790407	GEORGIA	2018	'October'	Hurricane
49	130186	790408	GEORGIA	2018	'October'	Hurricane
50	130186	790409	GEORGIA	2018	'October'	Hurricane
51	129101	773882	HAWAII	2018	'August'	Hurricane
52	130184	790368	ALABAMA	2018	'October'	Hurricane
53	130185	789475	FLORIDA	2018	'October'	Hurricane
54	130185	790373	FLORIDA	2018	'October'	Hurricane
55	130185	790374	FLORIDA	2018	'October'	Hurricane
56	130185	790375	FLORIDA	2018	'October'	Hurricane

	EpisodeID	Event_ID	State	Year	Month	Event_Type
57	130185	790376	FLORIDA	2018	'October'	Hurricane
58	130185	790377	FLORIDA	2018	'October'	Hurricane
59	129101	773857	HAWAII	2018	'August'	Hurricane
60	129101	773859	HAWAII	2018	'August'	Hurricane
61	120357	721909	PUERTO RICO	2017	'September'	Hurricane
62	120357	721910	PUERTO RICO	2017	'September'	Hurricane
63	120357	721916	PUERTO RICO	2017	'September'	Hurricane
64	120357	721917	PUERTO RICO	2017	'September'	Hurricane
65	120357	721918	PUERTO RICO	2017	'September'	Hurricane
66	120357	721919	PUERTO RICO	2017	'September'	Hurricane
67	120357	721920	PUERTO RICO	2017	'September'	Hurricane
68	120357	721921	PUERTO RICO	2017	'September'	Hurricane
69	120357	721922	PUERTO RICO	2017	'September'	Hurricane
70	120357	721907	PUERTO RICO	2017	'September'	Hurricane
71	120357	721908	PUERTO RICO	2017	'September'	Hurricane
72	119520	721768	FLORIDA	2017	'September'	Hurricane
73	119520	721803	FLORIDA	2017	'September'	Hurricane
74	119520	721815	FLORIDA	2017	'September'	Hurricane
75	119520	721999	FLORIDA	2017	'September'	Hurricane
76	119520	722000	FLORIDA	2017	'September'	Hurricane
77	119520	722003	FLORIDA	2017	'September'	Hurricane
78	119520	721819	FLORIDA	2017	'September'	Hurricane
79	119520	721735	FLORIDA	2017	'September'	Hurricane
80	119520	721737	FLORIDA	2017	'September'	Hurricane
81	119520	721738	FLORIDA	2017	'September'	Hurricane
82	119520	721791	FLORIDA	2017	'September'	Hurricane
83	119520	721736	FLORIDA	2017	'September'	Hurricane
84	119520	721812	FLORIDA	2017	'September'	Hurricane
85	119520	721998	FLORIDA	2017	'September'	Hurricane
86	119520	721739	FLORIDA	2017	'September'	Hurricane
87	119520	721769	FLORIDA	2017	'September'	Hurricane
88	120809	723457	FLORIDA	2017	'September'	Hurricane
89	120809	723459	FLORIDA	2017	'September'	Hurricane

	EpisodeID	Event_ID	State	Year	Month	Event_Type
90	120690	722895	FLORIDA	2017	'September'	Hurricane
91	120809	723450	FLORIDA	2017	'September'	Hurricane
92	120690	722914	FLORIDA	2017	'September'	Hurricane
93	120690	723255	FLORIDA	2017	'September'	Hurricane
94	120690	723286	FLORIDA	2017	'September'	Hurricane
95	120690	723287	FLORIDA	2017	'September'	Hurricane
96	120175	724808	MISSISSIPPI	2017	'October'	Hurricane
97	119859	720923	TEXAS	2017	'August'	Hurricane
98	120214	720264	TEXAS	2017	'August'	Hurricane
99	119859	720925	TEXAS	2017	'August'	Hurricane
100	119859	720927	TEXAS	2017	'August'	Hurricane

⋮
⋮

Remove unnecessary features

```
df = removevars(df, {'EpisodeID','Event_ID','Begin_Lat','Begin_Lon','End_Lat','End_Lon'})
```

df = 151×17 table

...

	State	Year	Month	Event_Type	Begin_Date_Time	Timezone
1	NORTH CARO...	2018	'September'	Hurricane	2018-09-14 12:35:00	'EST-5'
2	NORTH CARO...	2018	'September'	Hurricane	2018-09-25 12:00:00	'EST-5'
3	SOUTH CARO...	2018	'September'	Hurricane	2018-09-14 08:00:00	'EST-5'
4	NORTH CARO...	2018	'September'	Hurricane	2018-09-13 08:00:00	'EST-5'
5	SOUTH CARO...	2018	'September'	Hurricane	2018-09-14 18:45:00	'EST-5'
6	NORTH CARO...	2018	'September'	Hurricane	2018-09-14 06:15:00	'EST-5'
7	NORTH CARO...	2018	'September'	Hurricane	2018-09-14 06:00:00	'EST-5'
8	NORTH CARO...	2018	'September'	Hurricane	2018-09-13 08:00:00	'EST-5'
9	NORTH CARO...	2018	'September'	Hurricane	2018-09-13 08:00:00	'EST-5'
10	NORTH CARO...	2018	'September'	Hurricane	2018-09-13 08:00:00	'EST-5'
11	NORTH CARO...	2018	'September'	Hurricane	2018-09-13 08:00:00	'EST-5'
12	HAWAII	2018	'August'	Hurricane	2018-08-23 22:40:00	'HST-10'
13	GEORGIA	2018	'October'	Hurricane	2018-10-10 20:00:00	'EST-5'
14	GEORGIA	2018	'October'	Hurricane	2018-10-10 19:00:00	'EST-5'
15	HAWAII	2018	'August'	Hurricane	2018-08-24 05:26:00	'HST-10'

	State	Year	Month	Event_Type	Begin_Date_Time	Timezone
16	HAWAII	2018	'August'	Hurricane	2018-08-24 09:00:00	'HST-10'
17	HAWAII	2018	'August'	Hurricane	2018-08-24 14:00:00	'HST-10'
18	HAWAII	2018	'August'	Hurricane	2018-08-24 09:00:00	'HST-10'
19	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
20	GEORGIA	2018	'October'	Hurricane	2018-10-10 22:00:00	'EST-5'
21	GEORGIA	2018	'October'	Hurricane	2018-10-10 21:00:00	'EST-5'
22	GEORGIA	2018	'October'	Hurricane	2018-10-10 20:00:00	'EST-5'
23	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
24	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
25	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
26	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
27	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
28	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
29	HAWAII	2018	'August'	Hurricane	2018-08-24 09:00:00	'HST-10'
30	HAWAII	2018	'August'	Hurricane	2018-08-24 09:00:00	'HST-10'
31	HAWAII	2018	'August'	Hurricane	2018-08-24 10:10:00	'HST-10'
32	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
33	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
34	GEORGIA	2018	'October'	Hurricane	2018-10-10 22:00:00	'EST-5'
35	GEORGIA	2018	'October'	Hurricane	2018-10-10 21:08:00	'EST-5'
36	GEORGIA	2018	'October'	Hurricane	2018-10-10 23:15:00	'EST-5'
37	GEORGIA	2018	'October'	Hurricane	2018-10-10 21:00:00	'EST-5'
38	GEORGIA	2018	'October'	Hurricane	2018-10-10 23:00:00	'EST-5'
39	HAWAII	2018	'August'	Hurricane	2018-08-23 22:00:00	'HST-10'
40	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
41	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
42	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
43	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
44	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
45	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
46	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
47	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
48	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'

	State	Year	Month	Event_Type	Begin_Date_Time	Timezone
49	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
50	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
51	HAWAII	2018	'August'	Hurricane	2018-08-24 16:30:00	'HST-10'
52	ALABAMA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
53	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
54	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
55	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
56	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
57	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
58	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
59	HAWAII	2018	'August'	Hurricane	2018-08-23 22:00:00	'HST-10'
60	HAWAII	2018	'August'	Hurricane	2018-08-23 22:21:00	'HST-10'
61	PUERTO RICO	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
62	PUERTO RICO	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
63	PUERTO RICO	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
64	PUERTO RICO	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
65	PUERTO RICO	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
66	PUERTO RICO	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
67	PUERTO RICO	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
68	PUERTO RICO	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
69	PUERTO RICO	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
70	PUERTO RICO	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
71	PUERTO RICO	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
72	FLORIDA	2017	'September'	Hurricane	2017-09-10 06:00:00	'EST-5'
73	FLORIDA	2017	'September'	Hurricane	2017-09-10 07:00:00	'EST-5'
74	FLORIDA	2017	'September'	Hurricane	2017-09-10 08:00:00	'EST-5'
75	FLORIDA	2017	'September'	Hurricane	2017-09-10 10:00:00	'EST-5'
76	FLORIDA	2017	'September'	Hurricane	2017-09-10 11:00:00	'EST-5'
77	FLORIDA	2017	'September'	Hurricane	2017-09-08 23:00:00	'EST-5'
78	FLORIDA	2017	'September'	Hurricane	2017-09-10 08:00:00	'EST-5'
79	FLORIDA	2017	'September'	Hurricane	2017-09-10 06:00:00	'EST-5'
80	FLORIDA	2017	'September'	Hurricane	2017-09-10 06:00:00	'EST-5'
81	FLORIDA	2017	'September'	Hurricane	2017-09-10 05:00:00	'EST-5'

	State	Year	Month	Event_Type	Begin_Date_Time	Timezone
82	FLORIDA	2017	'September'	Hurricane	2017-09-10 07:00:00	'EST-5'
83	FLORIDA	2017	'September'	Hurricane	2017-09-10 05:00:00	'EST-5'
84	FLORIDA	2017	'September'	Hurricane	2017-09-10 08:00:00	'EST-5'
85	FLORIDA	2017	'September'	Hurricane	2017-09-10 10:00:00	'EST-5'
86	FLORIDA	2017	'September'	Hurricane	2017-09-10 06:00:00	'EST-5'
87	FLORIDA	2017	'September'	Hurricane	2017-09-10 07:00:00	'EST-5'
88	FLORIDA	2017	'September'	Hurricane	2017-09-09 09:30:00	'EST-5'
89	FLORIDA	2017	'September'	Hurricane	2017-09-09 10:00:00	'EST-5'
90	FLORIDA	2017	'September'	Hurricane	2017-09-09 16:00:00	'EST-5'
91	FLORIDA	2017	'September'	Hurricane	2017-09-09 10:15:00	'EST-5'
92	FLORIDA	2017	'September'	Hurricane	2017-09-09 06:00:00	'EST-5'
93	FLORIDA	2017	'September'	Hurricane	2017-09-09 16:00:00	'EST-5'
94	FLORIDA	2017	'September'	Hurricane	2017-09-09 09:00:00	'EST-5'
95	FLORIDA	2017	'September'	Hurricane	2017-09-09 08:00:00	'EST-5'
96	MISSISSIPPI	2017	'October'	Hurricane	2017-10-07 18:00:00	'CST-6'
97	TEXAS	2017	'August'	Hurricane	2017-08-25 18:00:00	'CST-6'
98	TEXAS	2017	'August'	Hurricane	2017-08-26 09:27:00	'CST-6'
99	TEXAS	2017	'August'	Hurricane	2017-08-25 17:00:00	'CST-6'
100	TEXAS	2017	'August'	Hurricane	2017-08-25 18:00:00	'CST-6'

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Summary

```
summary(df)
```

Variables:

    State: 151×1 categorical

        Values:

```
        FLORIDA              49
        MISSISSIPPI           1
        PUERTO RICO          11
        TEXAS                 9
        ALABAMA               1
        GEORGIA              30
        HAWAII               12
        NORTH CAROLINA       19
        SOUTH CAROLINA        7
        AMERICAN SAMOA        2
        GUAM                 10
```

Year: 151×1 double

    Values:

        Min   2014
        Median   2017
        Max   2018

Month: 151×1 cell array of character vectors

Event_Type: 151×1 categorical

    Values:

Astronomical Low Tide	0
Avalanche	0
Blizzard	0
Coastal Flood	0
Cold/Wind Chill	0
Debris Flow	0
Dense Fog	0
Dense Smoke	0
Drought	0
Dust Devil	0
Dust Storm	0
Excessive Heat	0
Extreme Cold/Wind Chill	0
Flash Flood	0
Flood	0
Freezing Fog	0
Frost/Freeze	0
Funnel Cloud	0
Hail	0
Heat	0
Heavy Rain	0
Heavy Snow	0
High Surf	0
High Wind	0
Hurricane	116
Ice Storm	0
Lake-Effect Snow	0
Lakeshore Flood	0
Lightning	0
Marine Hail	0
Marine High Wind	0
Marine Hurricane/Typhoon	0
Marine Strong Wind	0
Marine Thunderstorm Wind	0
Marine Tropical Depression	0
Marine Tropical Storm	0
Rip Current	0
Seiche	0
Sleet	0
Sneakerwave	0
Storm Surge/Tide	0
Strong Wind	0
Thunderstorm Wind	0
Tornado	0
Tropical Depression	0
Tropical Storm	0
Volcanic Ashfall	0
Waterspout	0
Wildfire	0

```
        Winter Storm                    0
        Winter Weather                  0
        Hurricane (Typhoon)            35
        Marine Dense Fog                0
        Tsunami                         0
        Marine Lightning                0
```

Begin_Date_Time: 151×1 datetime

    Values:

```
        Min       2014-07-03 12:00:00
        Median    2017-09-10 08:00:00
        Max       2018-10-10 23:15:00
```

Timezone: 151×1 cell array of character vectors

End_Date_Time: 151×1 datetime

    Values:

```
        Min       2014-07-04 12:00:00
        Median    2017-09-11 09:00:00
        Max       2018-10-11 03:00:00
```

Injuries_Direct: 151×1 double

    Values:

```
        Min          0
        Median       0
        Max         40
```

Injuries_Indirect: 151×1 double

    Values:

```
        Min          0
        Median       0
        Max         50
```

Deaths_Direct: 151×1 double

    Values:

```
        Min          0
        Median       0
        Max          4
```

Deaths_Indirect: 151×1 double

    Values:

```
        Min          0
        Median       0
        Max         16
```

Damage_Property: 151×1 cell array of character vectors

Property_Cost: 151×1 double

    Values:

```
        Min             0
```

```
        Median          2.365e+06
        Max             1.75e+09
        NumMissing      27

    Damage_Crops: 151×1 cell array of character vectors

    Crop_Cost: 151×1 double

        Values:

            Min             0
            Median          0
            Max             5e+08
            NumMissing      33

    Episode_Narrative: 151×1 cell array of character vectors

    Event_Narrative: 151×1 cell array of character vectors
```
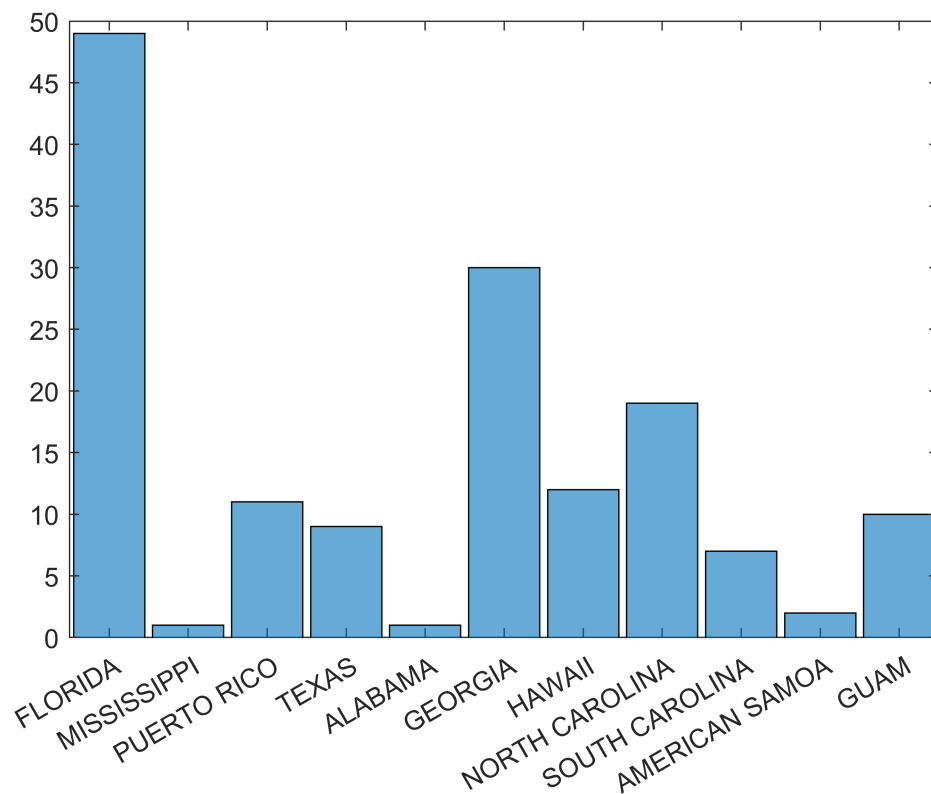
Distribution of hurricane occurence

```
histogram(df.State)
```


As we can see, most hurricanes were reported in Florida, followed by Georgia and North Carolina.

```
stm= groupcounts(df, 'Month')
```
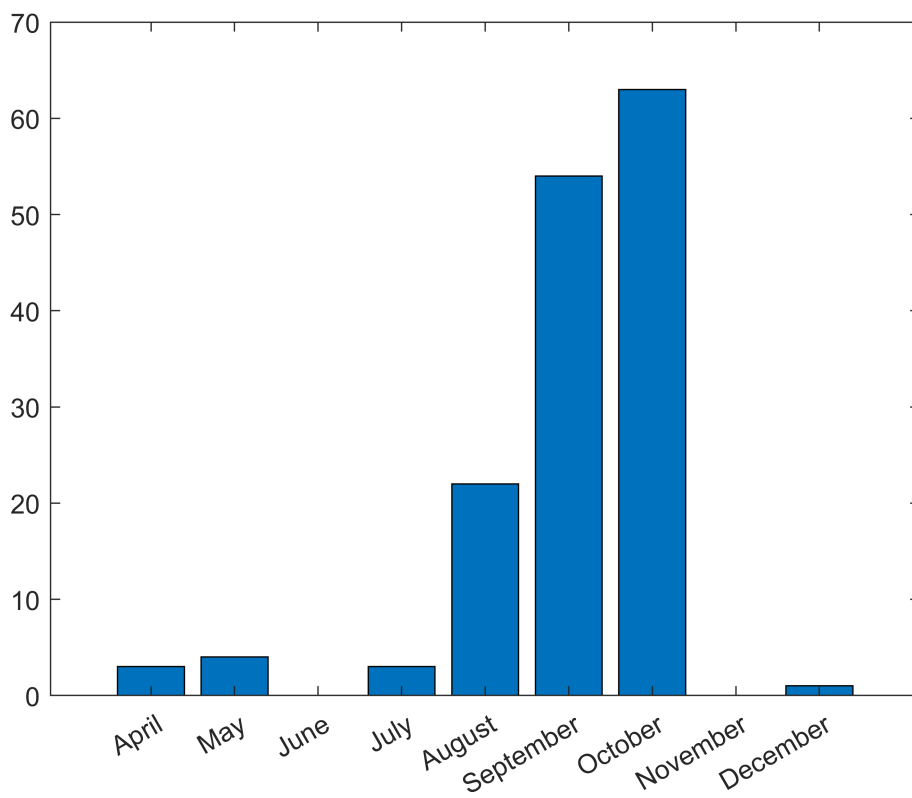
```
stm = 8×3 table
```

	Month	GroupCount	Percent
1	'April'	3	1.9868
2	'August'	22	14.5695
3	'December'	1	0.6623
4	'July'	3	1.9868
5	'March'	1	0.6623
6	'May'	4	2.6490
7	'October'	63	41.7219
8	'September'	54	35.7616

```
bar(stm.Month,stm.GroupCount,'DisplayName','stm.GroupCount')
```
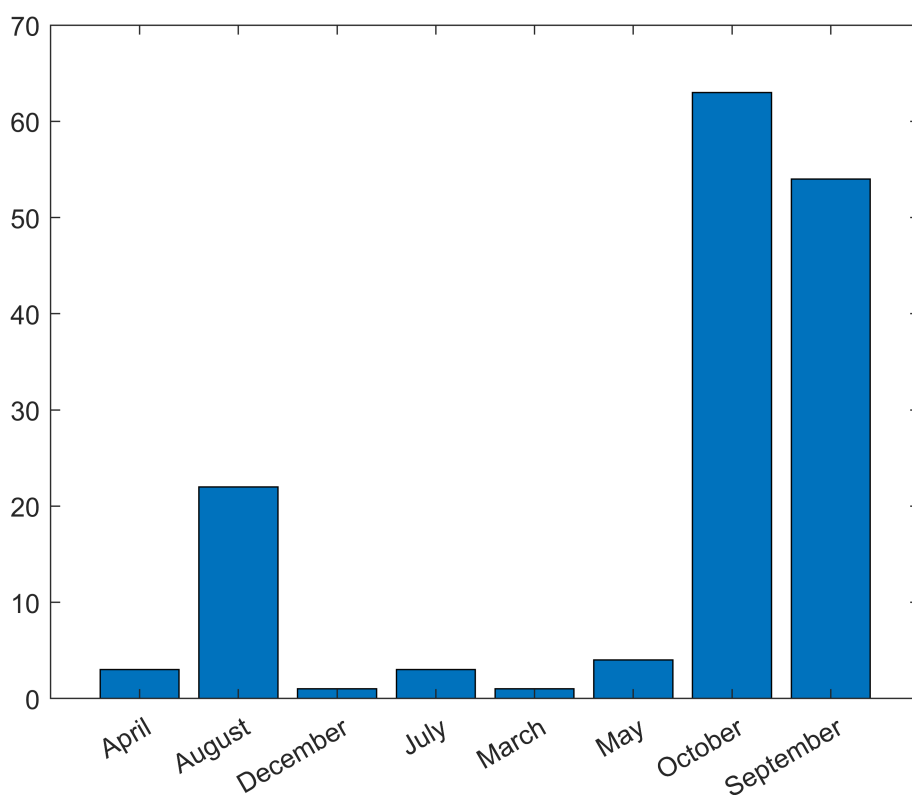


```
month= {'April', 'May', 'June', 'July', 'August', 'September', 'October', 'November', 'December
val = [3,4,0,3,22,54,63,0,1];
```

```
bar(val)
xticklabels(month)
```

As we can see, most hurricanes occurred in the month September and October.

```
histogram(df.Year)
```

Casualty

```
df
```

df = 151×17 table

...

	State	Year	Month	Event_Type	Begin_Date_Time	Timezone
1	NORTH CARO...	2018	'September'	Hurricane	2018-09-14 12:35:00	'EST-5'
2	NORTH CARO...	2018	'September'	Hurricane	2018-09-25 12:00:00	'EST-5'
3	SOUTH CARO...	2018	'September'	Hurricane	2018-09-14 08:00:00	'EST-5'
4	NORTH CARO...	2018	'September'	Hurricane	2018-09-13 08:00:00	'EST-5'
5	SOUTH CARO...	2018	'September'	Hurricane	2018-09-14 18:45:00	'EST-5'
6	NORTH CARO...	2018	'September'	Hurricane	2018-09-14 06:15:00	'EST-5'
7	NORTH CARO...	2018	'September'	Hurricane	2018-09-14 06:00:00	'EST-5'
8	NORTH CARO...	2018	'September'	Hurricane	2018-09-13 08:00:00	'EST-5'
9	NORTH CARO...	2018	'September'	Hurricane	2018-09-13 08:00:00	'EST-5'
10	NORTH CARO...	2018	'September'	Hurricane	2018-09-13 08:00:00	'EST-5'
11	NORTH CARO...	2018	'September'	Hurricane	2018-09-13 08:00:00	'EST-5'
12	HAWAII	2018	'August'	Hurricane	2018-08-23 22:40:00	'HST-10'

	State	Year	Month	Event_Type	Begin_Date_Time	Timezone
13	GEORGIA	2018	'October'	Hurricane	2018-10-10 20:00:00	'EST-5'
14	GEORGIA	2018	'October'	Hurricane	2018-10-10 19:00:00	'EST-5'
15	HAWAII	2018	'August'	Hurricane	2018-08-24 05:26:00	'HST-10'
16	HAWAII	2018	'August'	Hurricane	2018-08-24 09:00:00	'HST-10'
17	HAWAII	2018	'August'	Hurricane	2018-08-24 14:00:00	'HST-10'
18	HAWAII	2018	'August'	Hurricane	2018-08-24 09:00:00	'HST-10'
19	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
20	GEORGIA	2018	'October'	Hurricane	2018-10-10 22:00:00	'EST-5'
21	GEORGIA	2018	'October'	Hurricane	2018-10-10 21:00:00	'EST-5'
22	GEORGIA	2018	'October'	Hurricane	2018-10-10 20:00:00	'EST-5'
23	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
24	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
25	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
26	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
27	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
28	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
29	HAWAII	2018	'August'	Hurricane	2018-08-24 09:00:00	'HST-10'
30	HAWAII	2018	'August'	Hurricane	2018-08-24 09:00:00	'HST-10'
31	HAWAII	2018	'August'	Hurricane	2018-08-24 10:10:00	'HST-10'
32	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
33	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
34	GEORGIA	2018	'October'	Hurricane	2018-10-10 22:00:00	'EST-5'
35	GEORGIA	2018	'October'	Hurricane	2018-10-10 21:08:00	'EST-5'
36	GEORGIA	2018	'October'	Hurricane	2018-10-10 23:15:00	'EST-5'
37	GEORGIA	2018	'October'	Hurricane	2018-10-10 21:00:00	'EST-5'
38	GEORGIA	2018	'October'	Hurricane	2018-10-10 23:00:00	'EST-5'
39	HAWAII	2018	'August'	Hurricane	2018-08-23 22:00:00	'HST-10'
40	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
41	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
42	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
43	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
44	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
45	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'

	State	Year	Month	Event_Type	Begin_Date_Time	Timezone
46	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
47	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
48	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
49	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
50	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
51	HAWAII	2018	'August'	Hurricane	2018-08-24 16:30:00	'HST-10'
52	ALABAMA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
53	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
54	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
55	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
56	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
57	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
58	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
59	HAWAII	2018	'August'	Hurricane	2018-08-23 22:00:00	'HST-10'
60	HAWAII	2018	'August'	Hurricane	2018-08-23 22:21:00	'HST-10'
61	PUERTO RICO	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
62	PUERTO RICO	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
63	PUERTO RICO	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
64	PUERTO RICO	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
65	PUERTO RICO	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
66	PUERTO RICO	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
67	PUERTO RICO	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
68	PUERTO RICO	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
69	PUERTO RICO	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
70	PUERTO RICO	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
71	PUERTO RICO	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
72	FLORIDA	2017	'September'	Hurricane	2017-09-10 06:00:00	'EST-5'
73	FLORIDA	2017	'September'	Hurricane	2017-09-10 07:00:00	'EST-5'
74	FLORIDA	2017	'September'	Hurricane	2017-09-10 08:00:00	'EST-5'
75	FLORIDA	2017	'September'	Hurricane	2017-09-10 10:00:00	'EST-5'
76	FLORIDA	2017	'September'	Hurricane	2017-09-10 11:00:00	'EST-5'
77	FLORIDA	2017	'September'	Hurricane	2017-09-08 23:00:00	'EST-5'
78	FLORIDA	2017	'September'	Hurricane	2017-09-10 08:00:00	'EST-5'

	State	Year	Month	Event_Type	Begin_Date_Time	Timezone
79	FLORIDA	2017	'September'	Hurricane	2017-09-10 06:00:00	'EST-5'
80	FLORIDA	2017	'September'	Hurricane	2017-09-10 06:00:00	'EST-5'
81	FLORIDA	2017	'September'	Hurricane	2017-09-10 05:00:00	'EST-5'
82	FLORIDA	2017	'September'	Hurricane	2017-09-10 07:00:00	'EST-5'
83	FLORIDA	2017	'September'	Hurricane	2017-09-10 05:00:00	'EST-5'
84	FLORIDA	2017	'September'	Hurricane	2017-09-10 08:00:00	'EST-5'
85	FLORIDA	2017	'September'	Hurricane	2017-09-10 10:00:00	'EST-5'
86	FLORIDA	2017	'September'	Hurricane	2017-09-10 06:00:00	'EST-5'
87	FLORIDA	2017	'September'	Hurricane	2017-09-10 07:00:00	'EST-5'
88	FLORIDA	2017	'September'	Hurricane	2017-09-09 09:30:00	'EST-5'
89	FLORIDA	2017	'September'	Hurricane	2017-09-09 10:00:00	'EST-5'
90	FLORIDA	2017	'September'	Hurricane	2017-09-09 16:00:00	'EST-5'
91	FLORIDA	2017	'September'	Hurricane	2017-09-09 10:15:00	'EST-5'
92	FLORIDA	2017	'September'	Hurricane	2017-09-09 06:00:00	'EST-5'
93	FLORIDA	2017	'September'	Hurricane	2017-09-09 16:00:00	'EST-5'
94	FLORIDA	2017	'September'	Hurricane	2017-09-09 09:00:00	'EST-5'
95	FLORIDA	2017	'September'	Hurricane	2017-09-09 08:00:00	'EST-5'
96	MISSISSIPPI	2017	'October'	Hurricane	2017-10-07 18:00:00	'CST-6'
97	TEXAS	2017	'August'	Hurricane	2017-08-25 18:00:00	'CST-6'
98	TEXAS	2017	'August'	Hurricane	2017-08-26 09:27:00	'CST-6'
99	TEXAS	2017	'August'	Hurricane	2017-08-25 17:00:00	'CST-6'
100	TEXAS	2017	'August'	Hurricane	2017-08-25 18:00:00	'CST-6'

⋮
⋮

```
df.Injuries = df.Injuries_Direct + df.Injuries_Indirect;
df.Deaths = df.Deaths_Direct + df.Deaths_Indirect;
df
```

df = 151×19 table

...

	State	Year	Month	Event_Type	Begin_Date_Time	Timezone
1	NORTH CARO...	2018	'September'	Hurricane	2018-09-14 12:35:00	'EST-5'
2	NORTH CARO...	2018	'September'	Hurricane	2018-09-25 12:00:00	'EST-5'
3	SOUTH CARO...	2018	'September'	Hurricane	2018-09-14 08:00:00	'EST-5'
4	NORTH CARO...	2018	'September'	Hurricane	2018-09-13 08:00:00	'EST-5'

	State	Year	Month	Event_Type	Begin_Date_Time	Timezone
5	SOUTH CARO...	2018	'September'	Hurricane	2018-09-14 18:45:00	'EST-5'
6	NORTH CARO...	2018	'September'	Hurricane	2018-09-14 06:15:00	'EST-5'
7	NORTH CARO...	2018	'September'	Hurricane	2018-09-14 06:00:00	'EST-5'
8	NORTH CARO...	2018	'September'	Hurricane	2018-09-13 08:00:00	'EST-5'
9	NORTH CARO...	2018	'September'	Hurricane	2018-09-13 08:00:00	'EST-5'
10	NORTH CARO...	2018	'September'	Hurricane	2018-09-13 08:00:00	'EST-5'
11	NORTH CARO...	2018	'September'	Hurricane	2018-09-13 08:00:00	'EST-5'
12	HAWAII	2018	'August'	Hurricane	2018-08-23 22:40:00	'HST-10'
13	GEORGIA	2018	'October'	Hurricane	2018-10-10 20:00:00	'EST-5'
14	GEORGIA	2018	'October'	Hurricane	2018-10-10 19:00:00	'EST-5'
15	HAWAII	2018	'August'	Hurricane	2018-08-24 05:26:00	'HST-10'
16	HAWAII	2018	'August'	Hurricane	2018-08-24 09:00:00	'HST-10'
17	HAWAII	2018	'August'	Hurricane	2018-08-24 14:00:00	'HST-10'
18	HAWAII	2018	'August'	Hurricane	2018-08-24 09:00:00	'HST-10'
19	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
20	GEORGIA	2018	'October'	Hurricane	2018-10-10 22:00:00	'EST-5'
21	GEORGIA	2018	'October'	Hurricane	2018-10-10 21:00:00	'EST-5'
22	GEORGIA	2018	'October'	Hurricane	2018-10-10 20:00:00	'EST-5'
23	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
24	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
25	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
26	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
27	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
28	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
29	HAWAII	2018	'August'	Hurricane	2018-08-24 09:00:00	'HST-10'
30	HAWAII	2018	'August'	Hurricane	2018-08-24 09:00:00	'HST-10'
31	HAWAII	2018	'August'	Hurricane	2018-08-24 10:10:00	'HST-10'
32	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
33	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
34	GEORGIA	2018	'October'	Hurricane	2018-10-10 22:00:00	'EST-5'
35	GEORGIA	2018	'October'	Hurricane	2018-10-10 21:08:00	'EST-5'
36	GEORGIA	2018	'October'	Hurricane	2018-10-10 23:15:00	'EST-5'
37	GEORGIA	2018	'October'	Hurricane	2018-10-10 21:00:00	'EST-5'

	State	Year	Month	Event_Type	Begin_Date_Time	Timezone
38	GEORGIA	2018	'October'	Hurricane	2018-10-10 23:00:00	'EST-5'
39	HAWAII	2018	'August'	Hurricane	2018-08-23 22:00:00	'HST-10'
40	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
41	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
42	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
43	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
44	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
45	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
46	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
47	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
48	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
49	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
50	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
51	HAWAII	2018	'August'	Hurricane	2018-08-24 16:30:00	'HST-10'
52	ALABAMA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
53	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
54	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
55	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
56	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
57	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
58	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
59	HAWAII	2018	'August'	Hurricane	2018-08-23 22:00:00	'HST-10'
60	HAWAII	2018	'August'	Hurricane	2018-08-23 22:21:00	'HST-10'
61	PUERTO RICO	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
62	PUERTO RICO	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
63	PUERTO RICO	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
64	PUERTO RICO	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
65	PUERTO RICO	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
66	PUERTO RICO	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
67	PUERTO RICO	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
68	PUERTO RICO	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
69	PUERTO RICO	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
70	PUERTO RICO	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'

	State	Year	Month	Event_Type	Begin_Date_Time	Timezone
71	PUERTO RICO	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
72	FLORIDA	2017	'September'	Hurricane	2017-09-10 06:00:00	'EST-5'
73	FLORIDA	2017	'September'	Hurricane	2017-09-10 07:00:00	'EST-5'
74	FLORIDA	2017	'September'	Hurricane	2017-09-10 08:00:00	'EST-5'
75	FLORIDA	2017	'September'	Hurricane	2017-09-10 10:00:00	'EST-5'
76	FLORIDA	2017	'September'	Hurricane	2017-09-10 11:00:00	'EST-5'
77	FLORIDA	2017	'September'	Hurricane	2017-09-08 23:00:00	'EST-5'
78	FLORIDA	2017	'September'	Hurricane	2017-09-10 08:00:00	'EST-5'
79	FLORIDA	2017	'September'	Hurricane	2017-09-10 06:00:00	'EST-5'
80	FLORIDA	2017	'September'	Hurricane	2017-09-10 06:00:00	'EST-5'
81	FLORIDA	2017	'September'	Hurricane	2017-09-10 05:00:00	'EST-5'
82	FLORIDA	2017	'September'	Hurricane	2017-09-10 07:00:00	'EST-5'
83	FLORIDA	2017	'September'	Hurricane	2017-09-10 05:00:00	'EST-5'
84	FLORIDA	2017	'September'	Hurricane	2017-09-10 08:00:00	'EST-5'
85	FLORIDA	2017	'September'	Hurricane	2017-09-10 10:00:00	'EST-5'
86	FLORIDA	2017	'September'	Hurricane	2017-09-10 06:00:00	'EST-5'
87	FLORIDA	2017	'September'	Hurricane	2017-09-10 07:00:00	'EST-5'
88	FLORIDA	2017	'September'	Hurricane	2017-09-09 09:30:00	'EST-5'
89	FLORIDA	2017	'September'	Hurricane	2017-09-09 10:00:00	'EST-5'
90	FLORIDA	2017	'September'	Hurricane	2017-09-09 16:00:00	'EST-5'
91	FLORIDA	2017	'September'	Hurricane	2017-09-09 10:15:00	'EST-5'
92	FLORIDA	2017	'September'	Hurricane	2017-09-09 06:00:00	'EST-5'
93	FLORIDA	2017	'September'	Hurricane	2017-09-09 16:00:00	'EST-5'
94	FLORIDA	2017	'September'	Hurricane	2017-09-09 09:00:00	'EST-5'
95	FLORIDA	2017	'September'	Hurricane	2017-09-09 08:00:00	'EST-5'
96	MISSISSIPPI	2017	'October'	Hurricane	2017-10-07 18:00:00	'CST-6'
97	TEXAS	2017	'August'	Hurricane	2017-08-25 18:00:00	'CST-6'
98	TEXAS	2017	'August'	Hurricane	2017-08-26 09:27:00	'CST-6'
99	TEXAS	2017	'August'	Hurricane	2017-08-25 17:00:00	'CST-6'
100	TEXAS	2017	'August'	Hurricane	2017-08-25 18:00:00	'CST-6'

:
:

```
sum(df.Injuries)
```

```
ans = 158
```

```
sum(df.Deaths)
```

```
ans = 77
```

Which year there were more deaths?

```
stm= groupsummary(df, 'Year', 'sum', "Deaths")
```

stm = 5×3 table

	Year	GroupCount	sum_Deaths
1	2014	6	0
2	2015	7	5
3	2016	33	6
4	2017	45	28
5	2018	60	38

```
sortrows(df, "Deaths", "descend")
```

ans = 151×19 table

...

	State	Year	Month	Event_Type	Begin_Date_Time	Timezone
1	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
2	FLORIDA	2016	'October'	Hurricane	2016-10-06 22:00:00	'EST-5'
3	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
4	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
5	FLORIDA	2017	'September'	Hurricane	2017-09-10 06:00:00	'EST-5'
6	FLORIDA	2017	'September'	Hurricane	2017-09-09 10:15:00	'EST-5'
7	GUAM	2015	'March'	Hurricane (Typhoon)	2015-03-26 00:00:00	'GST10'
8	FLORIDA	2017	'September'	Hurricane	2017-09-10 08:00:00	'EST-5'
9	FLORIDA	2017	'September'	Hurricane	2017-09-10 10:00:00	'EST-5'
10	FLORIDA	2017	'September'	Hurricane	2017-09-09 09:30:00	'EST-5'
11	SOUTH CA...	2018	'September'	Hurricane	2018-09-14 18:45:00	'EST-5'
12	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
13	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
14	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
15	FLORIDA	2017	'September'	Hurricane	2017-09-10 11:00:00	'EST-5'
16	TEXAS	2017	'August'	Hurricane	2017-08-25 17:00:00	'CST-6'

	State	Year	Month	Event_Type	Begin_Date_Time	Timezone
17	NORTH CA...	2018	'September'	Hurricane	2018-09-25 12:00:00	'EST-5'
18	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
19	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
20	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
21	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
22	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
23	FLORIDA	2017	'September'	Hurricane	2017-09-10 08:00:00	'EST-5'
24	FLORIDA	2017	'September'	Hurricane	2017-09-08 23:00:00	'EST-5'
25	FLORIDA	2017	'September'	Hurricane	2017-09-10 06:00:00	'EST-5'
26	FLORIDA	2017	'September'	Hurricane	2017-09-09 10:00:00	'EST-5'
27	FLORIDA	2017	'September'	Hurricane	2017-09-09 16:00:00	'EST-5'
28	FLORIDA	2017	'September'	Hurricane	2017-09-09 16:00:00	'EST-5'
29	TEXAS	2017	'August'	Hurricane	2017-08-25 18:00:00	'CST-6'
30	GEORGIA	2016	'October'	Hurricane	2016-10-08 07:00:00	'EST-5'
31	GUAM	2015	'May'	Hurricane (Typhoon)	2015-05-04 00:00:00	'GST10'
32	NORTH CA...	2018	'September'	Hurricane	2018-09-14 12:35:00	'EST-5'
33	SOUTH CA...	2018	'September'	Hurricane	2018-09-14 08:00:00	'EST-5'
34	NORTH CA...	2018	'September'	Hurricane	2018-09-13 08:00:00	'EST-5'
35	NORTH CA...	2018	'September'	Hurricane	2018-09-14 06:15:00	'EST-5'
36	NORTH CA...	2018	'September'	Hurricane	2018-09-14 06:00:00	'EST-5'
37	NORTH CA...	2018	'September'	Hurricane	2018-09-13 08:00:00	'EST-5'
38	NORTH CA...	2018	'September'	Hurricane	2018-09-13 08:00:00	'EST-5'
39	NORTH CA...	2018	'September'	Hurricane	2018-09-13 08:00:00	'EST-5'
40	NORTH CA...	2018	'September'	Hurricane	2018-09-13 08:00:00	'EST-5'
41	HAWAII	2018	'August'	Hurricane	2018-08-23 22:40:00	'HST-10'
42	GEORGIA	2018	'October'	Hurricane	2018-10-10 20:00:00	'EST-5'
43	GEORGIA	2018	'October'	Hurricane	2018-10-10 19:00:00	'EST-5'
44	HAWAII	2018	'August'	Hurricane	2018-08-24 05:26:00	'HST-10'
45	HAWAII	2018	'August'	Hurricane	2018-08-24 09:00:00	'HST-10'
46	HAWAII	2018	'August'	Hurricane	2018-08-24 14:00:00	'HST-10'
47	HAWAII	2018	'August'	Hurricane	2018-08-24 09:00:00	'HST-10'
48	GEORGIA	2018	'October'	Hurricane	2018-10-10 22:00:00	'EST-5'
49	GEORGIA	2018	'October'	Hurricane	2018-10-10 21:00:00	'EST-5'

	State	Year	Month	Event_Type	Begin_Date_Time	Timezone
50	GEORGIA	2018	'October'	Hurricane	2018-10-10 20:00:00	'EST-5'
51	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
52	HAWAII	2018	'August'	Hurricane	2018-08-24 09:00:00	'HST-10'
53	HAWAII	2018	'August'	Hurricane	2018-08-24 09:00:00	'HST-10'
54	HAWAII	2018	'August'	Hurricane	2018-08-24 10:10:00	'HST-10'
55	GEORGIA	2018	'October'	Hurricane	2018-10-10 22:00:00	'EST-5'
56	GEORGIA	2018	'October'	Hurricane	2018-10-10 21:08:00	'EST-5'
57	GEORGIA	2018	'October'	Hurricane	2018-10-10 23:15:00	'EST-5'
58	GEORGIA	2018	'October'	Hurricane	2018-10-10 21:00:00	'EST-5'
59	GEORGIA	2018	'October'	Hurricane	2018-10-10 23:00:00	'EST-5'
60	HAWAII	2018	'August'	Hurricane	2018-08-23 22:00:00	'HST-10'
61	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
62	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
63	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
64	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
65	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
66	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
67	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
68	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
69	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
70	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
71	GEORGIA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
72	HAWAII	2018	'August'	Hurricane	2018-08-24 16:30:00	'HST-10'
73	ALABAMA	2018	'October'	Hurricane	2018-10-10 07:00:00	'EST-5'
74	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
75	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
76	FLORIDA	2018	'October'	Hurricane	2018-10-10 05:00:00	'EST-5'
77	HAWAII	2018	'August'	Hurricane	2018-08-23 22:00:00	'HST-10'
78	HAWAII	2018	'August'	Hurricane	2018-08-23 22:21:00	'HST-10'
79	PUERTO R...	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
80	PUERTO R...	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
81	PUERTO R...	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
82	PUERTO R...	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'

	State	Year	Month	Event_Type	Begin_Date_Time	Timezone
83	PUERTO R...	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
84	PUERTO R...	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
85	PUERTO R...	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
86	PUERTO R...	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
87	PUERTO R...	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
88	PUERTO R...	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
89	PUERTO R...	2017	'September'	Hurricane	2017-09-20 11:00:00	'AST-4'
90	FLORIDA	2017	'September'	Hurricane	2017-09-10 06:00:00	'EST-5'
91	FLORIDA	2017	'September'	Hurricane	2017-09-10 07:00:00	'EST-5'
92	FLORIDA	2017	'September'	Hurricane	2017-09-10 10:00:00	'EST-5'
93	FLORIDA	2017	'September'	Hurricane	2017-09-10 06:00:00	'EST-5'
94	FLORIDA	2017	'September'	Hurricane	2017-09-10 05:00:00	'EST-5'
95	FLORIDA	2017	'September'	Hurricane	2017-09-10 07:00:00	'EST-5'
96	FLORIDA	2017	'September'	Hurricane	2017-09-10 05:00:00	'EST-5'
97	FLORIDA	2017	'September'	Hurricane	2017-09-10 08:00:00	'EST-5'
98	FLORIDA	2017	'September'	Hurricane	2017-09-10 07:00:00	'EST-5'
99	FLORIDA	2017	'September'	Hurricane	2017-09-09 06:00:00	'EST-5'
100	FLORIDA	2017	'September'	Hurricane	2017-09-09 09:00:00	'EST-5'

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As we can see, the hurricane 'Michael' in 2018 in Florida caused a significant damage to life and property.

```
wordcloud(df.Episode_Narrative(53))
```
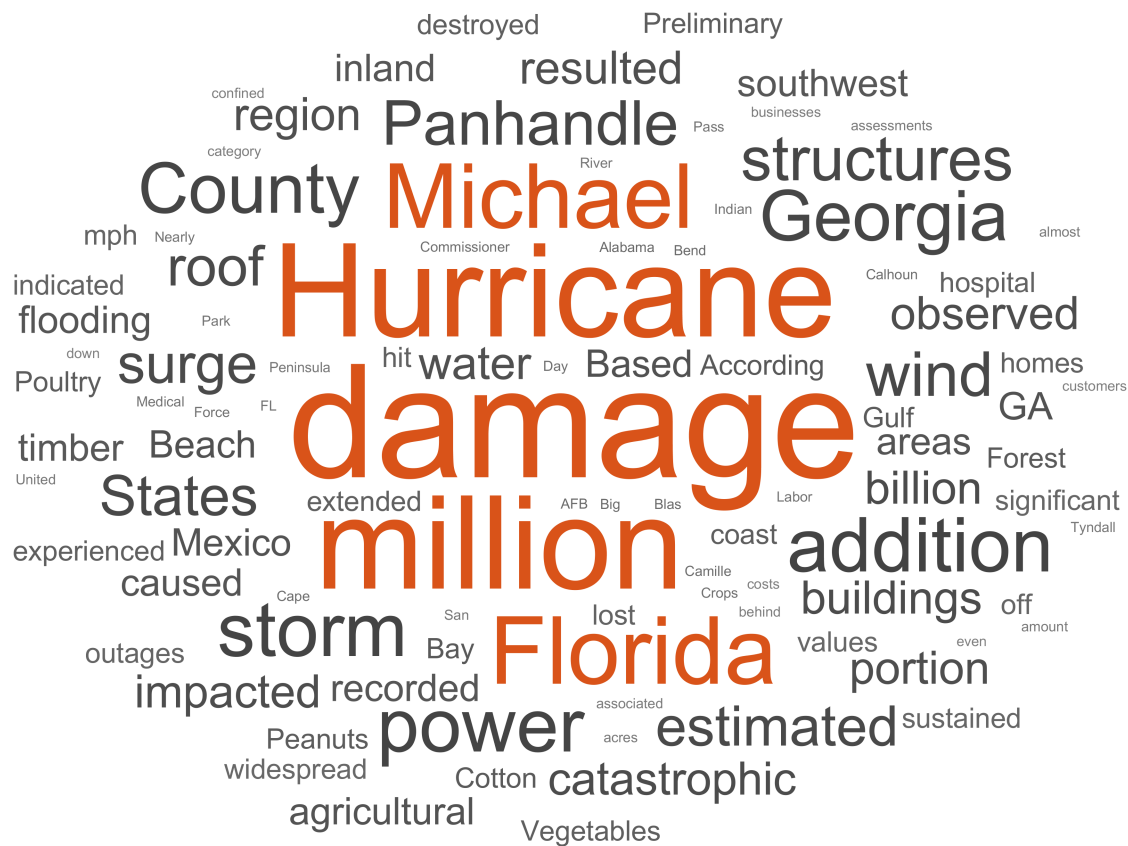
Property Cost

```
stp= groupsummary(df, 'Year', 'sum', "Property_Cost")
```

stp = 5×3 table

	Year	GroupCount	sum_Property_Cost
1	2014	6	970000
2	2015	7	31560000
3	2016	33	815692000
4	2017	45	5.7879e+09
5	2018	60	6.1347e+09

```
sts= groupsummary(df, "State", 'sum', "Property_Cost")
```

sts = 11×3 table

	State	GroupCount	sum_Property_Cost
1	FLORIDA	49	5.4005e+09
2	MISSISSIPPI	1	0
3	PUERTO RICO	11	5000000
4	TEXAS	9	4.1411e+09

	State	GroupCount	sum_Property_Cost
5	ALABAMA	1	2940000
6	GEORGIA	30	1.5162e+09
7	HAWAII	12	0
8	NORTH CARO...	19	1.4662e+09
9	SOUTH CARO...	7	207040000
10	AMERICAN S...	2	0
11	GUAM	10	31860000

```
stp18= groupsummary(data_18_hurricane, 'State', 'sum', "Property_Cost")
```

stp18 = 6×3 table

	State	GroupCount	sum_Property_Cost
1	'ALABAMA'	1	2940000
2	'FLORIDA'	14	3.1500e+09
3	'GEORGIA'	22	1.5162e+09
4	'HAWAII'	12	0
5	'NORTH CARO...	9	1.4655e+09
6	'SOUTH CARO...	2	40000

```
bar(sts.State,sts.sum_Property_Cost,'DisplayName','sts.sum_Property_Cost')
```