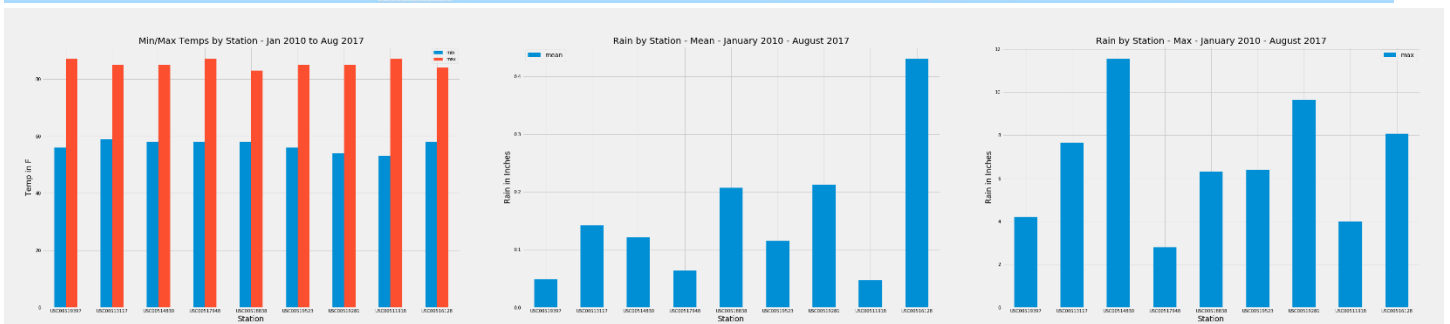
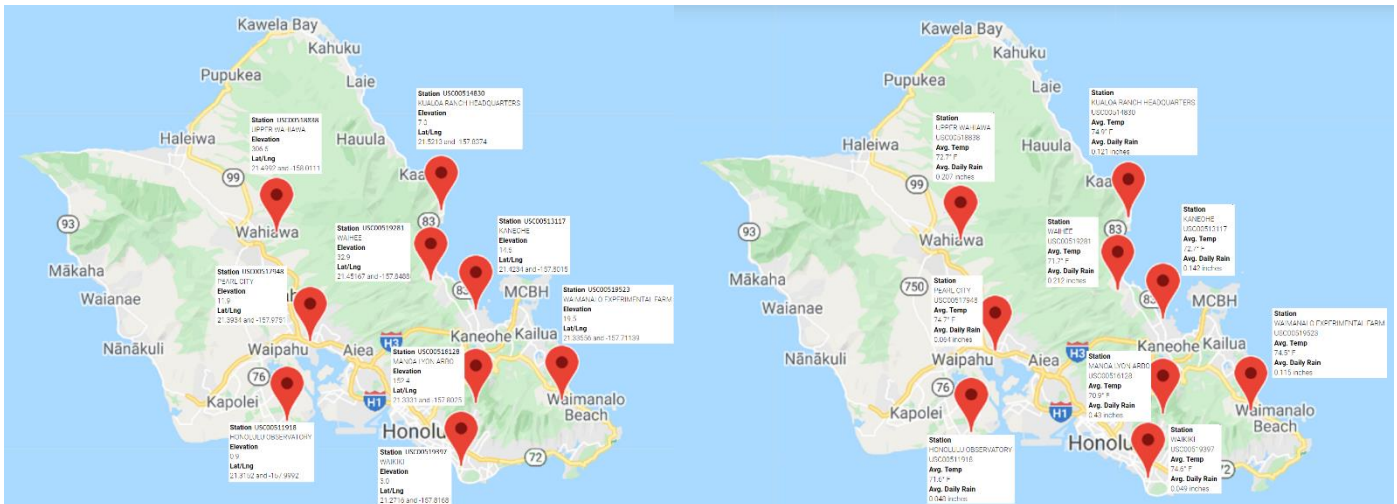


Surfs Up – Oahu Location Study

There are 9 weather stations on Oahu that provided tracking information for conditions from January 2010 through August of 2017. There are 2 copies of an Oahu map below, the first of which gives longitude/latitude and elevation information for each station. The other provides average temperature and daily rainfall for each station over the nearly 8-year span. There are a couple of station locations that are inland and at higher elevations that encourage rainfall. These, quite obviously, would not be good locations for a surf shop. The next 3 images offer max/min temperatures, average rain, and maximum rain by station over the entire study period.



An objective laid down is to study the weather patterns for the months of June and December. I have used the describe function to list all of the essential weather data for the group of stations as a whole and then for each station individually. Average temperatures were nearly 4 degrees higher in June than in December and average daily rainfall was more than 50% greater in December than in June.

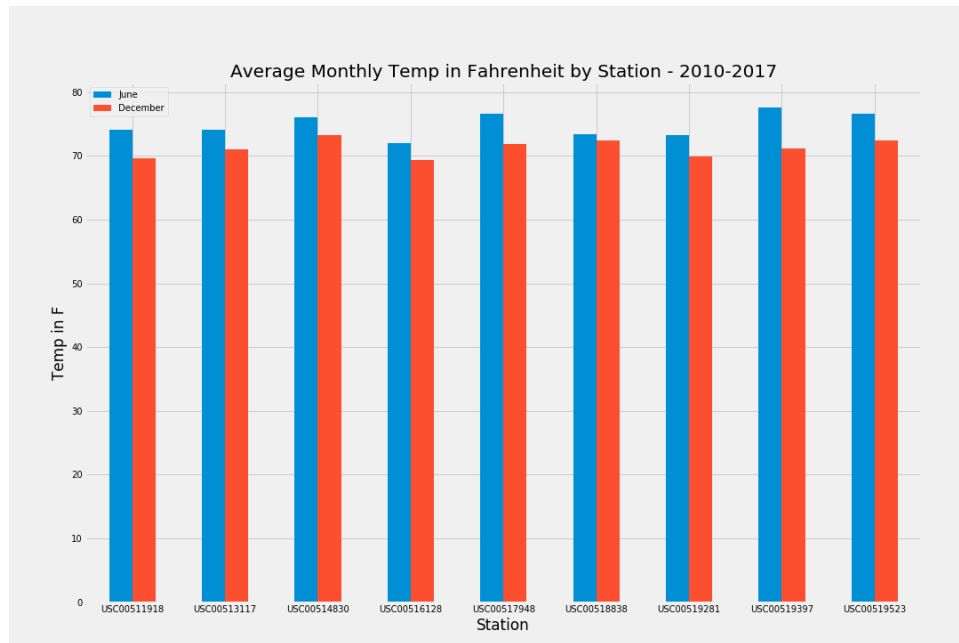
Box and whisker plots were prepared to look at the temperature and rainfall data for each station and bar charts were produced listing June and December data, side by side, for daily average temperatures and rainfall. This helps identify warmest locations and those with lower amounts of rainfall, which would elevate a site's potential for a surf and ice cream shop.

Additional research that needs to be done includes collecting data on surfing conditions and demographic information. Also, a SWOT marketing analysis should be prepared for each location, looking at strengths, opportunities, weaknesses, and threats.

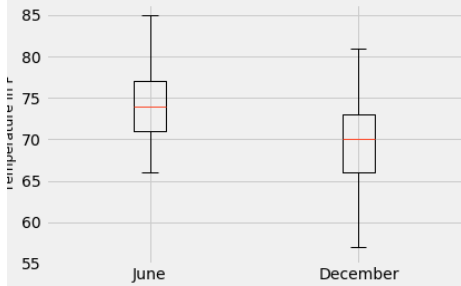
Surfs Up – Oahu Location Study

June 2010 - 2017 - All Stations				Dec 2010 - 2017 - All Stations				June 2010 - 2017 - Station USC00511918				Dec 2010 - 2017 - Station USC00511918			
	precipitation	temp	month		precipitation	temp	month		precipitation	temp	month		precipitation	temp	month
count	1574.000000	1700.000000	1700.0	count	1405.000000	1517.000000	1517.0	count	159.000000	165.000000	165.0	count	151.000000	152.000000	152.0
mean	0.136360	74.944118	6.0	mean	0.216819	71.041529	12.0	mean	0.015157	74.139394	6.0	mean	0.138146	69.684211	12.0
std	0.335731	3.257417	0.0	std	0.541399	3.745920	0.0	std	0.053425	4.072359	0.0	std	0.551093	4.494914	0.0
min	0.000000	64.000000	6.0	min	0.000000	56.000000	12.0	min	0.000000	66.000000	6.0	min	0.000000	57.000000	12.0
25%	0.000000	73.000000	6.0	25%	0.000000	69.000000	12.0	25%	0.000000	71.000000	6.0	25%	0.000000	66.000000	12.0
50%	0.020000	75.000000	6.0	50%	0.030000	71.000000	12.0	50%	0.000000	74.000000	6.0	50%	0.000000	70.000000	12.0
75%	0.120000	77.000000	6.0	75%	0.150000	74.000000	12.0	75%	0.010000	77.000000	6.0	75%	0.010000	73.000000	12.0
max	4.430000	85.000000	6.0	max	6.420000	83.000000	12.0	max	0.580000	85.000000	6.0	max	4.000000	81.000000	12.0
June 2010 - 2017 - Station USC00513117				Dec 2010 - 2017 - Station USC00513117				June 2010 - 2017 - Station USC00514830				Dec 2010 - 2017 - Station USC00514830			
	precipitation	temp	month		precipitation	temp	month		precipitation	temp	month		precipitation	temp	month
count	234.000000	236.000000	236.0	count	216.000000	216.000000	216.0	count	167.000000	186.000000	186.0	count	147.000000	178.000000	178.0
mean	0.118248	74.050847	6.0	mean	0.203241	71.069444	12.0	mean	0.114192	76.005376	6.0	mean	0.154966	73.224719	12.0
std	0.407513	2.162927	0.0	std	0.518405	2.878920	0.0	std	0.335829	2.688308	0.0	std	0.370831	3.313226	0.0
min	0.000000	68.000000	6.0	min	0.000000	63.000000	12.0	min	0.000000	67.000000	6.0	min	0.000000	62.000000	12.0
25%	0.000000	73.000000	6.0	25%	0.000000	69.000000	12.0	25%	0.000000	74.000000	6.0	25%	0.000000	71.000000	12.0
50%	0.030000	74.000000	6.0	50%	0.030000	71.000000	12.0	50%	0.030000	76.000000	6.0	50%	0.040000	73.000000	12.0
75%	0.100000	75.000000	6.0	75%	0.152500	73.000000	12.0	75%	0.120000	78.000000	6.0	75%	0.155000	76.000000	12.0
max	4.430000	83.000000	6.0	max	4.940000	80.000000	12.0	max	3.600000	81.000000	6.0	max	2.550000	79.000000	12.0
June 2010 - 2017 - Station USC00516128				Dec 2010 - 2017 - Station USC00516128				June 2010 - 2017 - Station USC00517948				Dec 2010 - 2017 - Station USC00517948			
	precipitation	temp	month		precipitation	temp	month		precipitation	temp	month		precipitation	temp	month
count	214.000000	223.000000	223.0	count	197.000000	206.000000	206.0	count	79.000000	148.000000	148.0	count	55.000000	109.000000	109.0
mean	0.495748	71.937222	6.0	mean	0.507005	69.291262	12.0	mean	0.057975	76.655405	6.0	mean	0.152727	71.834862	12.0
std	0.553942	2.41161	0.0	std	0.825186	3.073509	0.0	std	0.201070	2.851692	0.0	std	0.456531	3.494741	0.0
min	0.000000	66.000000	6.0	min	0.000000	60.000000	12.0	min	0.000000	64.000000	6.0	min	0.000000	64.000000	12.0
25%	0.090000	70.000000	6.0	25%	0.010000	68.000000	12.0	25%	0.000000	76.000000	6.0	25%	0.000000	69.000000	12.0
50%	0.295000	72.000000	6.0	50%	0.150000	69.000000	12.0	50%	0.000000	77.000000	6.0	50%	0.020000	71.000000	12.0
75%	0.740000	73.000000	6.0	75%	0.630000	71.000000	12.0	75%	0.045000	78.000000	6.0	75%	0.070000	74.000000	12.0
max	2.800000	79.000000	6.0	max	6.420000	83.000000	12.0	max	1.710000	82.000000	6.0	max	2.800000	82.000000	12.0
June 2010 - 2017 - Station USC00518838				Dec 2010 - 2017 - Station USC00518838				June 2010 - 2017 - Station USC00519281				Dec 2010 - 2017 - Station USC00519281			
	precipitation	temp	month		precipitation	temp	month		precipitation	temp	month		precipitation	temp	month
count	26.000000	38.000000	38.0	count	11.000000	19.000000	19.0	count	236.000000	236.000000	236.0	count	217.000000	217.000000	217.0
mean	0.094615	73.394737	6.0	mean	0.638182	72.421053	12.0	mean	0.151525	73.271186	6.0	mean	0.244931	69.903226	12.0
std	0.173441	2.706743	0.0	std	0.826920	3.132549	0.0	std	0.213496	2.989801	0.0	std	0.489789	3.803609	0.0
min	0.000000	67.000000	6.0	min	0.020000	63.000000	12.0	min	0.000000	65.000000	6.0	min	0.000000	58.000000	12.0
25%	0.000000	72.000000	6.0	25%	0.075000	72.000000	12.0	25%	0.010000	71.000000	6.0	25%	0.010000	68.000000	12.0
50%	0.035000	73.000000	6.0	50%	0.160000	73.000000	12.0	50%	0.060000	73.000000	6.0	50%	0.070000	70.000000	12.0
75%	0.087500	75.750000	6.0	75%	1.105000	74.000000	12.0	75%	0.212500	75.000000	6.0	75%	0.230000	73.000000	12.0
max	0.820000	78.000000	6.0	max	2.500000	78.000000	12.0	max	1.390000	82.000000	6.0	max	3.140000	79.000000	12.0
June 2010 - 2017 - Station USC00519397				Dec 2010 - 2017 - Station USC00519397				June 2010 - 2017 - Station USC00519523				Dec 2010 - 2017 - Station USC00519523			
	precipitation	temp	month		precipitation	temp	month		precipitation	temp	month		precipitation	temp	month
count	233.000000	236.000000	236.0	count	207.000000	210.000000	210.0	count	226.000000	232.000000	232.0	count	204.000000	210.000000	210.0
mean	0.022661	77.559322	6.0	mean	0.075314	71.109524	12.0	mean	0.050044	76.668103	6.0	mean	0.162010	72.433333	12.0
std	0.089427	1.819714	0.0	std	0.242803	3.554417	0.0	std	0.098610	2.303248	0.0	std	0.483051	3.624456	0.0
min	0.000000	70.000000	6.0	min	0.000000	56.000000	12.0	min	0.000000	71.000000	6.0	min	0.000000	56.000000	12.0
25%	0.000000	77.000000	6.0	25%	0.000000	69.000000	12.0	25%	0.000000	75.000000	6.0	25%	0.000000	71.000000	12.0
50%	0.000000	78.000000	6.0	50%	0.000000	72.000000	12.0	50%	0.000000	76.500000	6.0	50%	0.030000	73.000000	12.0
75%	0.010000	79.000000	6.0	75%	0.035000	74.000000	12.0	75%	0.067500	78.000000	6.0	75%	0.102500	75.000000	12.0
max	0.890000	84.000000	6.0	max	2.010000	77.000000	12.0	max	0.510000	82.000000	6.0	max	4.950000	79.000000	12.0

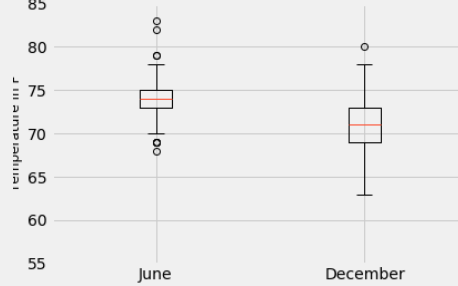
Surfs Up – Oahu Location Study



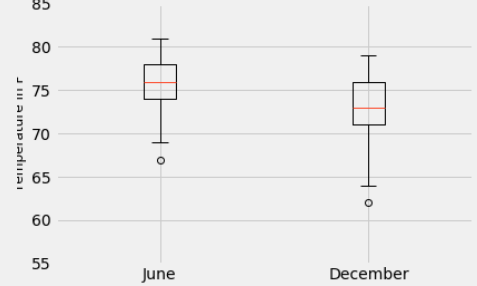
Honolulu Observatory Temperature Comparison - 2010-2017
USC00511918



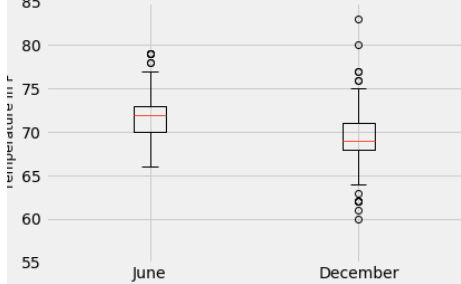
Kaneohe Temperature Comparison - 2010-2017
USC00513117



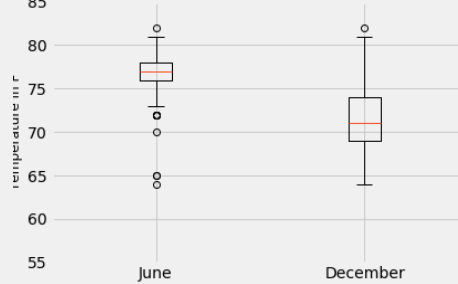
Kualoa Ranch HQ Temperature Comparison - 2010-2017
USC00514830



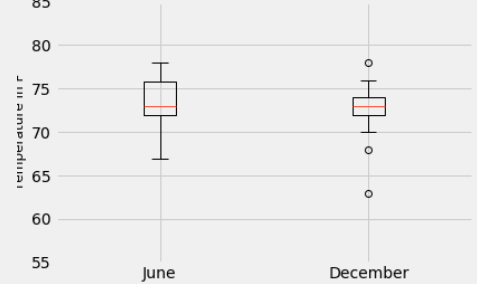
Manoa Lyon Arbo Temperature Comparison - 2010-2017
USC00516128



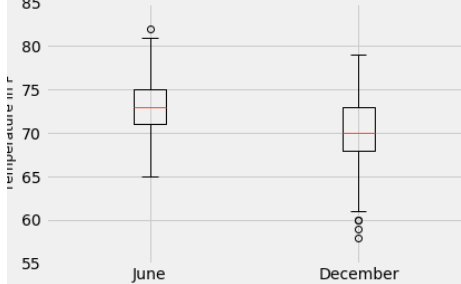
Pearl City Temperature Comparison - 2010-2017
USC00517948



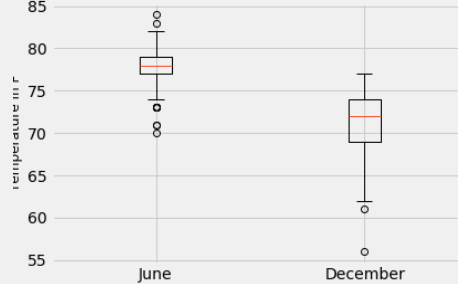
Upper Wahiawa Temperature Comparison - 2010-2017
USC00518838



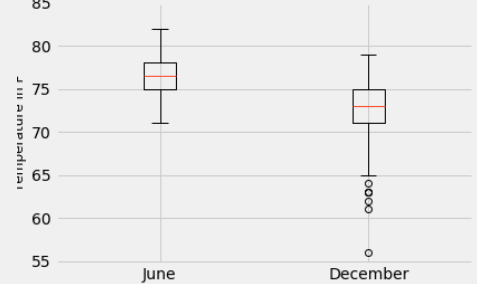
Waihee Temperature Comparison - 2010-2017
USC00519281



Waikiki Temperature Comparison - 2010-2017
USC00519397



Waimanalo Temperature Comparison - 2010-2017
USC00519523



Surfs Up – Oahu Location Study

