**I want to know if more tourists visit Disney World than go to Universal Studios theme park. I have the attendance numbers for 50 years for both theme parks. The variance is unequal. The p-value is 0.042.**

**H0:** average attendance at Disney <= average attendance Universal

**Ha:** average attendance at Disney > average attendance at Universal

t.test(Universal,Disney,var.equal=FALSE,alternative=”greater”) <- wrong code for this example

t.test(Disney,Universal,var.equal=FALSE,alternative=”greater”) <-correct code for this example

**Result:** Reject the null hypothesis, p-value: 0.042< 0.05

**Conclusion:** There is enough evidence to say that Disney receives statistically significantly more average tourists that Universal.

**WE want to know if green sea turtles that hatch in Hawaii on Oahu weigh more than green sea turtles that hatch on Maui (Oahu and Maui are two separate islands). P-value is 0.02.**

**H0:** mean turtle hatchling Oahu <= mean turtle hatchling Maui

**Ha: m**ean turtle hatchling Oahu > mean turtle hatchling Maui

**Result:** reject <0.05

**Conclusion:**  There is enough evidence to say that the turtles that hatch in Oahu weigh a statistically significant amount more than the turtles hatched in Maui

**Sea surface temperatures every day 2011 and 2016. Interested in if 2011 is warmer than 2016🡨** not paired, 2 samples

**To be paired- we would be wondering if the difference in calendar days was warmer in 2016 than 2011 (interested in specific days)**

**Average monthly temperature- interested in if months are different between years 🡨** paired

**Lengths of salmon at aquaculture farm and caught in wild🡨** not paired, 2 samples

**Fish in a growth trial- measured at time (1) and time (2). 🡨** paired

**Say we have 50 sites- and we measure # species in 2011 and then in 2012 at each site. 🡨** paired

**We have 50 sites- we have average length in 2011 and 2015 at each site – we want to know if the fish at each site grew 🡨**paired

**Josh likes to eat cereal. He wants to know if his box of Cheerios contains as much cereal as the manufacturer claims, to make sure he is not being ripped off. He buys 50 boxes to compare with the manufacturers published weight. The p-value is 0.06.**

**H0:** average cereal weight >= manufacturer weight

**Ha:** average cereal weight < manufacturer weight

**Result:**  fail to reject

**Conclusion:**

There is not enough statistical evidence to say that the average cereal weight is significantly lower than the manufacturer weight