**IEE 380 Team Project Summary Memo Spring 2015**

Team #67

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**Background**

The group decided that it would be beneficial to test the difference in average processing speeds between iMac desktop CPUs and Alienware desktop CPUs. The brand of desktop was considered the population in order to determine if there was a difference in the mean processing speed between the two variables (the CPU processing speeds).

**Hypothesis**

Our null and alternative hypothesis were:

Null Hypothesis: The average processing speed between CPUs is equal

Alternative Hypothesis: The average processing speed between CPUs is not equal

**Data**

|  |  |
| --- | --- |
| **Speed of iMac desktop CPUs in GHz** | **Speed of Alienware desktop CPUs in GHz** |
| 1.6 | 4.4 |
| 2.8 | 3.7 |
| 3.1 | 4.3 |
| 3.8 | 3.8 |
| 3.6 | 3.9 |
| 3.9 | 4.0 |
| 4.0 |  |

**Analysis**

In order to determine whether we had a Case 2 or Case 3, we conducted a Case 5 study.

The null and alternative hypothesis for the Case 5 were:

Null hypothesis:

Alternative hypothesis:

We used α = 0.05 and found p = .0267. Because the p-Value was smaller than α, we rejected the null hypothesis.

Therefore, we used a Case 3 to analyze our hypothesis concerning CPU speeds.

The null and alternative hypothesis for the Case 3 were:

Null hypothesis:

Alternative hypothesis:

,

,

> α

**Conclusion**

The p-value was 0.06 which is larger than α = 0.05 and therefore led us to fail to reject the null hypothesis. Due to this, we concluded that the two means were equal to each other and that the average processing speeds between iMac and Alienware desktop CPUs was equal.

**Bibliography**

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Compare Macs, Compare iPods, iPhones & iPads @ EveryMac.com. (n.d.). Retrieved November 23, 2015, from http://www.everymac.com/ultimate-mac-comparison-chart/