Memorandum

Date: October 29, 2010

To: Dr. Reese

Subject: Graphing and Charting Assignment

From: Daniel Morgan

Three different chart types were used to help display some questions in the most appropriate manner. Each question was asking a question with different types of information to be displayed. Not all data can be displayed using one chart type. The three chart types used were line chart to show a trend over time. A bar/column chart was used to show a direct comparison of numbers and the last is a pie chart which shows a comparison of percentages. Each chart was created using Microsoft Excel 2007 and inserted into Microsoft Word 2007 in a presentable format. All charts were given a figure ID for reference and properly introduced.

Figure 1 shows the currency exchange trends for USD to AU and NZD over the last year based on first of month. As you can see in figure 1 a U.S student should travel to Australia and New Zealand in June for best value of U.S dollar. A line graph is used because it is showing a comparison of a trend over a period of time.

![Currency Exchange Rate USD to AU & NZD](http://www.oanda.com/currency/historical-rates)

Figure 1: USD to AU & NZD trends from November 1, 2009 to October 1, 2010 based on interbank exchange rates.

Figure 2 shows the number of search engine results using quotations and no quotations. There were four search engines used, google.com, search.yahoo.com, exalead.com/search, and scholar.google.com appearing in order of highest to lowest number of results. A bar/column chart was used to show a direct comparison of results as there is no trend.

![Bar chart showing search engine results](image)

**Figure 2:** Search engine results from September 23, 2010 with and without quotations based on four search engines.
Figure 3 shows the number of males to females in TSM/ACR 251 based on the current roster. The pie chart shows there are 6% more males in class than females and therefore it is displayed at the 12 o’clock position in a clockwise presentation. The pie chart is used because we are comparing percentages.

Figure 3: Number of males to females in TSM/ACR 251 based on current roster.
Figure 4 shows the annual cost of four different types of heating and cooling in four select US cities in different parts of the country. In all the results standard geoexchange system was the most cost effective and efficient in all US cities and electrical resistance and standard air conditioning was the most expensive to use in all four US cities. A bar/column chart was used to show a direct comparison of types of heating and cooling to how much they cost and where they are the most beneficial.

Figure 4: Annual Cost of Heating and Cooling in four US cities using different methods of heating and cooling.