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Instructions: Fill out your full name and SMC username above. Answer each question in its respective following space on this answer sheet. **Give a sufficient yet succinct answer for each question, and show figures / tables / graphs on this same sheet when appropriate or explicitly requested.** After completion, rename and save this file as **“Assignment 1\_BUSAD 040\_*your full name*” in either MS Word (.docx or .doc) or PDF (.pdf) format**, then upload and submit it **together with your completed Excel files** on Moodle by the due date. No other file formats will be accepted. Late submission will not be accepted.

Note: This answer sheet and the three accompanying Excel files are the only files you need to submit on Moodle after completion.

**Total possible points: 110 points**

1. **Chapter 1 questions (30 points in total)**

1.1 J.D. Power and Associates conducts vehicle quality surveys to provide automobile manufacturers with consumer satisfaction information about their products (Vehicle Quality Survey, January 2010). Using a sample of vehicle owners from recent vehicle purchase records, the survey asks the owners a variety of questions about their new vehicles, such as those shown below. **For each question below, state whether the data collected are categorical or quantitative, and indicate the scale of measurement being used.** (20 points in total, 4 points for each)

a. What price did you pay for the vehicle?

**Quantitative: Dollars $**

b. How did you pay for the vehicle? (Cash, Lease, or Finance)

**Categorical: Cash, Lease, or Finance**

c. How likely would you be to recommend this vehicle to a friend? (Definitely Not, Probably Not, Probably Will, and Definitely Will)

**Categorical: Definitely Not, Probably Not, Probably Will, and Definitely Will**

d. What is the current mileage?

**Quantitative: Miles**

e. What is your overall rating of your new vehicle? A 10-point scale, ranging from 1 for unacceptable to 10 for truly exceptional, was used.

**Quantitative: 1-10 scale**

1.2 Pew Research Center is a nonpartisan polling organization that provides information about issues, attitudes, and trends shaping America. In a recent poll, Pew researchers found that 47% of American adult respondents reported getting at least some local news on their cell phone or tablet computer (Pew Research website, May 14, 2011). Further findings showed that 42% of respondents who own cell phones or tablet computers use those devices to check local weather reports and 37% use the devices to find local restaurants or other businesses. (10 points in total)

a. One statistic concerned using cell phones or tablet computers for local news. What population is that finding applicable to? (3 points)

**47%**

b. Another statistic concerned using cell phones or tablet computers to check local weather reports and to find local restaurants. What population is this finding applicable to? (3 points)

**37%**

c. Do you think the Pew researchers conducted a census or a sample survey to obtain their results? Why? (2 points)

**Census because they found data from a large group and tried to get the information from the whole population.**

d. If you were a restaurant owner, would you find these results interesting? Why? How could you take advantage of this information? (2 points)

**Yes I would because it would show me where a percentage of my traffic can be derived from. I would capitalize on the market of cell phones and tablets by pushing more advertisements and updating the website for mobile users.**

1. **Chapter 2 questions (80 points in total)**

2.1 In alphabetical order, the six most common last names in the United States are Brown, Johnson, Jones, Miller, Smith, and Williams (The World Almanac, 2012). Assume that a sample of 50 individuals with one of these last names provided the data as in the given ***2012Names.xlsx*** Excel file. Summarize the data by constructing the following: (20 points in total)

a. **Relative** and **percent** frequency distributions (10 points)

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b. A bar chart (4 points)

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c. A pie chart (4 points)

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d. Based on these data, what are the three most common last names? (2 points)

**Smith, Johnson, and Williams**

2.2 A startup company’s ability to gain funding is a key to success. The funds raised (in millions of dollars) by 50 startup companies are given in the ***StartUps.xlsx*** Excel file (The Wall Street Journal, March 10, 2011). (30 points in total)

a. Construct a frequency distribution and percent frequency distribution. **Use 15-44 as the first class and 255-284 as the last class.** (hint: figure out how many equal-size classes in this case) (10 points)

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b. Construct a histogram using the same classes. (5 points)

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Histogram

c. Comment on the shape of the distribution. (5 points)

**It is like a hill that goes up in the 2nd class which is around 45 to 74 million dollars and then sharply goes down.**

d. Which class has the most counts and how many counts are there in that class? (5 points)

**The 2nd class has the most at 20 in that class.**

e. Which class(es) has/have the fewest count(s) and how many count(s) is/are there in the class(es)? (5 points)

**the 6th and 8th class are the lowest and they have 2 and one respectively.**

* 1. The given ***Colleges.xlsx*** Excel file contains a sample of 103 private colleges and universities. The data include the name of the college or university, the year the institution was founded, the tuition and fees (not including room and board) for the most recent academic year, and the percentage of full time, first-time bachelor’s degree-seeking undergraduate students who obtain their degree in six years or less (The World Almanac, 2012). (30 points in total)

a. Construct a crosstabulation with Year Founded as the row variable and Tuition & Fees as the column variable. **Use classes starting with 1600 and ending with 2000 in increments of 50 for Year Founded. For Tuition & Fees, use classes starting with 1 and ending 45000 in increments of 5000.** (10 points)

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b. Compute the row percentages for the crosstabulation in part (a). (5 points)

c. What relationship, if any, do you notice between Year Founded and Tuition & Fees? (5 points)

**the newer the college the cheaper the tuition is roughly.**

d. Prepare a scatter plot (diagram) to show the relationship between Tuition & Fees and %

Graduate. (5 points)

A close up of a map

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e. Comment on any relationship between the variables using the scatter plot in (d). (5 points)

**The general trend is that the higher the tuition and fees the greater the graduation rate is.**