SPSS Assignment

General Instructions

For this assignment you will be required to show how creative you are by developing and analyzing your own **fictitious** data sets. Please read each question carefully and label and submit all the appropriate SPSS materials required. Please realize that if you fail to provide all the necessary SPSS information and/or explain it will be extremely difficult for us to evaluate your answer.

Here are a few things that we'll be looking for when we evaluate your answers:

1. An original research idea **for each** of the research scenarios below. In other words, please provide us with the following for each statistical test you are asked to perform. Note: your Assignment should be divided into 8 sections, each section detailing your research scenario, the statistical test being perform, and an description/explanation of the most relevant SPSS output.
    a. A brief introduction and your research question. By brief we mean not more than 2 – 3 sentences!
    b. State your Null (Ho) and Research (Ha) hypotheses (we need this to determine p-values in some cases).
    c. State and label the names of your independent and dependent variables.
2. Data. You'll need to create reasonable fictitious data for each your research and enter it into SPSS. By reasonable we mean data that might actually approximate the variability one would expect to see in your variables if you were conducting an actual study.
3. SPSS outputs. Be sure to submit, **in either Word or a PDF**, only the relevant SPSS outputs (Note: Do Not Submit the SPSS notes). By relevant we mean those outputs that summarize the statistical evidence of your research for each question. **NOTE: only submit 1 document to the Assignment dropbox.** So you'll have to organize your answer into its various parts. If you are having trouble formatting SPSS outputs, try 'Exporting' from SPSS.
4. SPSS explanations. In your own words, please explain what the crucial components of the SPSS output actually means. Some things that come immediately to mind include:
    a. Explanation of Graphs (e.g., interaction) and Tables (e.g. Chi-square) when appropriate
    b. Explanation of checks for violations of statistical assumptions (e.g., Levene's).
    c. State and describe the meaning of the most important statistics (e.g., group means, df, t statistics, F statistics, p-values).
5. Draw accurate conclusions based on your SPSS output in terms of your study variables. In other words, do you reject the null hypothesis or is your study inconclusive? And, what does that actually mean in terms of the variables contained in your study?
6. Try to have fun with the Assignment – be creative. You will have 'real' data for your honour theses, this is a good stepping stone to familiarize yourself with SPSS.

Part 1: T-Test

1. (10 Marks) Generate a research scenario where you create a data set of 30 participants, and use a **t-test for a single-sample** to analyze the data. You'll need to be very clear about why you are using this test – so your Introduction is really important.

2. (10 Marks) Generate **a repeated measures** research scenario where you create a data set of 30 participants. Use the appropriate t-test to analyze your findings.

3. (10 Marks) Generate a research scenario of 48 participants that should be analyzed using a **t-test for independent means**. See your class notes for an example.

Part 2: ANOVA

1. (10 Marks) Generate a research scenario of 40 participants where a **one-way ANOVA** needs to be employed. Your data **must produce** a significant overall result, and there should be a post-hoc test performed and interpreted.
2. (10 Marks) Generate a **2X2 factorial research scenario** of 40 participants. Your **interaction must be significant**. Be sure to produce all cell and marginal means and explain all interactions and main effects. A graph of the interaction is expected too.

Part 3: Nonparametric test

1. (5 Marks) Generate a research scenario of 30 participants where a **chi-square test for goodness of fit** must be used.
2. (5 Marks) Generate a research scenario of 30 participants where a **chi-square test for independence** must be used.
3. (5 Marks) Generate a research scenario of 30 participants where a **Mann-Whitney U** test needs to be used.