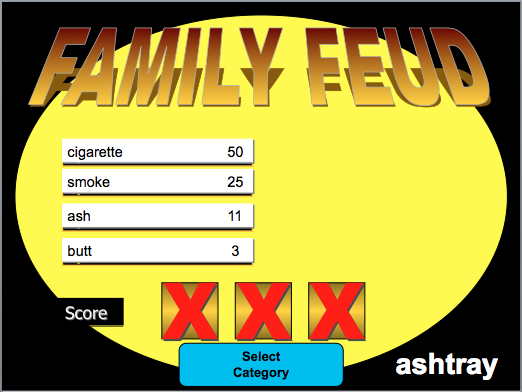
**Research Question:**

Participants were recruited to play Family Feud with research assistants. They were told to compete for the high score by guessing the most common words related to a category word. See below for example … they would not see the words until they got them correct:



Remember to paste your output in this document and upload your R script to blackboard to complete this assignment.

**Between Subjects IV(s):**

* Group: Different types of Family Feud were given to participants
  + Without numbers: traditional Family Feud without the scores they would receive for getting it right
  + With numbers: Family Feud modified to show participants the scores they would receive if they got them right
* Helpers:
  + Singles: participants worked alone
  + Doubles: participants worked in pairs

**Repeated Measures IV(s):**

* Forward: Strength of relationship between words that you would normally be guessing in family feud (i.e. ashtray to cigarette)
  + Levels: High, Medium, Low (first part of variables H\_, M\_, L\_)
* Backwards: strength of reverse relationship (i.e. cigarette to ashtray)
  + Levels: High, Medium, Low (last part of variables H, M, L)

**Between Subjects DV:**

* Total Score: participants final score in the family feud game, higher scores indicate they did better (0-640).

**Repeated Measures DV:**

* Percent correct: the number of each combination of forward and backwards relationships they guessed correctly (0-1).

**Research Question for this Assignment:**

* Mixed: Is there an interaction between group and the low forward – different backward strength variables (L\_H, L\_M, L\_L)? Or which backward strength helps people get the words the best, depending on group?

**Data Screening:** Be sure to screen only the data for this analysis question (i.e. get rid of the other columns you are not using).

**Accuracy:**

1. Check the data for out of range scores.
   1. Include a summary showing you do/do not have out of range scores.
   2. If necessary, fix the out of range scores.
      1. Indicate what the problems were in the dataset.
      2. Make all out of range values NA.
      3. Include a summary showing that you fixed the accuracy issues.

**Missing data:**

1. Include a table of the missing data by participant.
2. Include a table of the missing data by column after you exclude participants with too much missing data.
3. Exclude all missing data.

**Outliers:**

1. Calculate Mahalanobis distance scores for your data.
   1. What is your *df* for the cut off score?
   2. What is the cut off score?
   3. How many outliers did you have? You can include the summary of the mahal < cutoff.
   4. Delete the outliers.

**Additivity:**

1. Include a symnum table of the continuous variables.
2. Are any of the variables too highly correlated?

**Normality:**

1. Include the multivariate normality histogram.
2. Interpret the graph. Does it indicate multivariate normality?

**Linearity:**

1. Include the multivariate QQ plot.
2. Interpret the graph. Does it indicate multivariate linearity?

**Homogeneity:**

1. Include the multivariate residuals plot.
2. Interpret the graph. Does it indicate homogeneity?

**Power:**

1. Calculate the number of participants you would need for the research question, assuming a large effect size.
   1. Include a screen shot or summary of the numbers you typed into G\*Power, so we can give you partial credit if you get a different sample size than us.

**ANOVA:**

1. Run the ANOVA for the research question and include the output.
2. Make sure Levene’s and Mauchly’s output is included when necessary.

**Post hocs:**

1. **Be sure to analyze the interaction even if it is not significant.**
2. Calculate the means, standard deviations, and group sizes for your conditions.
3. Include the tapply ouput.
4. Post hocs:
5. What type of post hoc *test* did you run?
6. What type of post hoc *correction* did you run?
7. Include the t-test output.
8. Effect size:
9. Calculate the effect size for your pairwise comparisons.
10. Include the effect size output (depends on analysis and combinations you picked).
11. Fill in the table below with the information from the above calculations (like the one from the notes):

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Mean 1 | Mean 2 | P-value | Explain? | Effect size |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

**Graph:**

1. Include a graph of the means and confidence interval for your ANOVA. Be sure to check the following:
2. X-axis label
3. Y-axis label
4. X-axis group labels
5. Error bars
6. Cleaned up graph (no gray backgrounds)

**Write up:**

1. Write up an analysis of what you find in this data, including all the information you answered above. Use the example in the notes for a guide. This write up should include the following for credit:
2. Result section style (APA and AMA):
3. Double space
4. Times New Roman 12 point
5. Two decimals
6. Centered, bolded Results
7. Short description of the study/variables.
8. Data screening summary:
9. Accuracy – did you have problems? What did you do to fix it?
10. Missing data - did you have problems? What did you do to fix it?
11. Outliers - did you have problems? What did you do to fix it?
12. Assumptions:
    * 1. Additivity
      2. Normality
      3. Linearity
      4. Homogeneity
      5. Levene’s/Mauchly’s
13. ANOVA
14. Overall F statistics
15. Post hoc tests / corrections and results
16. Effect size for all tests
17. Graph with reference to the figure in the text.