|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Introduction** | **Methods** | **Results** | **Discussion** | **Conclusion** |
| **E** | Provides robust description of data, collection methods, and context.  Well-articulated research question(s) correctly phrased for multiple linear regression analysis. | Outlines variables considered for analysis, including all relevant details regarding how they were collected and their associated units / levels.  Creates data visualizations requested; axis labels allow visualization to be interpreted independent of additional information.  Provides robust description of relationships seen in visualization, clearly connects what is seen in the visualizations to the statistical model chosen for analysis. | Correctly fits and obtains coefficients for model stated in *Methods* section. | Provides well written regression equation(s) which clearly indicate the context of the regression.  Interprets the coefficients associated with the regression model (intercept(s) and slope(s)) with few if any errors that do not bring into question understanding of the underlying concepts.  Provides a reasonable conjecture as to why the regression results were obtained, connecting to existing research. | Provides well-articulated description of how regression model connects to what was seen in visualization, reaches a conclusion for the research question stated in the *Introduction*.  Clearly states who the analysis can be inferred to, connecting to sampling methodology used.  Clearly states what relationships can be inferred between the variables, connecting to the design of the study.  Interpretations are all described in the context of the study. |
| **S** | Provides satisfactory description of data with small elements omitted.  Research question(s) articulated but contain instances of incorrect language for a multiple linear regression analysis. | Outlines variables considered for analysis, omitting some details regarding their collection, but includes units.  Creates data visualizations requested; some additional information is needed to supplement axis labels.  Provides description of relationships seen in visualization, but connections to the statistical model chosen for analysis are at times unclear. | Correctly fits and obtains coefficients for model stated in *Methods* section. | Provides regression equation(s) with some context, but meaning is sometimes unclear.  Interprets the coefficients associated with the regression model (intercept(s) and slope(s)), with some errors that bring into question understanding of underlying concepts.  Provides a reasonable conjecture as to why the regression results were obtained, with little connection to existing research. | Description of connection between regression model and visualization are mostly clear, but connections to the research question stated in the *Introduction* are at times unclear.  Statement regarding who the analysis can be inferred to is mostly clear, but some connections to the sampling methodology are incorrect.  Statement regarding what relationships can be inferred between the variables is mostly clear, but some connections to the design of the study are incorrect.  Interpretations are all described in the context of the study. |
| **P** | Provides poor description of data with multiple elements omitted.  Research question(s) poorly articulated, with little to no general connection to a multiple linear regression analysis. | Outlines variables considered for analysis, with very few details regarding their collection, but includes units.  Creates data visualizations requested; axis labels require additional information to understand the context.  Provides poor description of relationships seen in visualization, connections to the statistical model chosen for analysis are quite unclear. | Does not fit model stated in *Methods* section but obtains coefficients. | Provides regression equation(s) with little to no context, meaning is often unclear.  Interprets the coefficients associated with the regression model (intercept(s) and slope(s)), with many errors that bring into question understanding of underlying concepts.  Provides a reasonable conjecture as to why the regression results were obtained, with no connection to existing research. | Description of connection between regression model and visualization is unclear with little to no connection to the research question stated in the *Introduction*.  Statement regarding who the analysis can be inferred to is mostly unclear, with few if any connections to the sampling methodology used.  Statement regarding what relationships can be inferred between the variables is mostly unclear, with few if any connections to the design of the study.  Interpretations are done in general statements, not in the context of the study. |

|  | Introduction | Methods | Results | Discussion | Conclusions |
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| **Excellent** |  |  |  |  |  |
| **Satisfactory** |  |  |  |  |  |
| **Progressing** |  |  |  |  |  |
| **Novice** | Provides little to no description of data.  Research question(s) not articulated. | Outlines variables considered for analysis, with no details regarding their associated units / levels.  Creates data visualizations requested, axis labels are not changed.  Provides little to no description of relationships seen in visualization,with no connections to the statistical model chosen for analysis. | Does not fit model stated in *Methods* section and does not obtain coefficients. | Provides regression equation(s) with no context, meaning is almost entirely unclear.  Interpretations of coefficients associated with the regression model (intercept(s) and slope(s)) bring into question any understanding of underlying concepts. | Little to no description of connection between regression model and visualization, no connection to the research question stated in the *Introduction*.  Statement regarding who the analysis can be inferred to is mostly unclear, with no connections to the sampling methodology used.  Statement regarding what relationships can be inferred between the variables is mostly unclear, with no connections to the design of the study.  Interpretations are done in general statements, not in the context of the study. |

## Overall Project Grade

| **Excellent (A)** | **Satisfactory (B)** | **Progressing (C)** | **Novice (D)** |
| --- | --- | --- | --- |
| ***At most one*** ***section*** is marked “Satisfactory” the remainder are marked “Excellent” | ***At most one*** ***section*** is marked “Progressing” the remainder are marked “Satisfactory” or “Excellent”  No sections are marked “Novice” | ***At most three*** ***sections*** are marked “Progressing” the remainder are marked “Satisfactory” or “Excellent”  No sections are marked “Novice” | ***At most one section*** is marked “Satisfactory” or “Excellent” the remainder are marked either “Progressing” or “Novice”  No sections are marked “Novice” |