

Adding Formulas to an Object Type

Last Modified on 04/23/2025 10:05 am EDT

Overview

A formula uses numeric and variable values (e.g., select lists, numeric or date fields, or workflow states) to generate Incident Severity, Estimated Damage, or Incident Likelihood. Formulas are added to an object type through a Relationship or Reference.

A formula appears on a form as a number, label (e.g., Low, Medium, High), numbers and labels, gauge, or as a formula card.

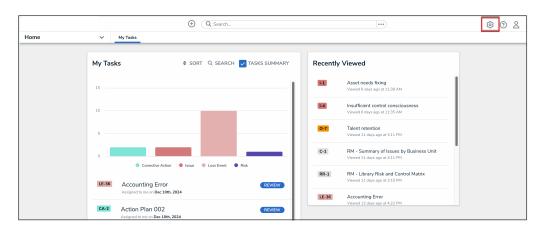
Related Information/Setup

For more information on formulas, see the following articles:

- Formulas Overview
- Variables, Operators & Functions
- Time Functions
- Null Values in Formulas
- Formula Examples
- Formulas on Forms

Navigation

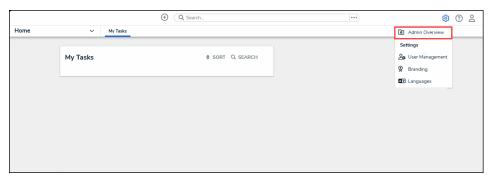
1. From the *Home* screen, click the **Administration** icon.



Administration Icon

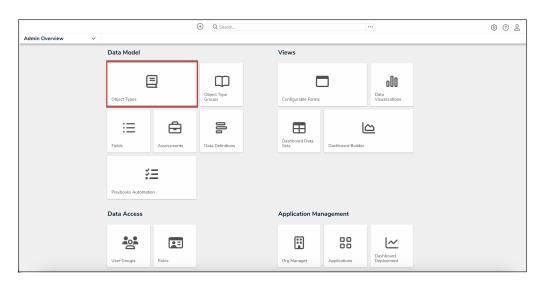
2. From the Administrator settings menu, click **Admin Overview**.





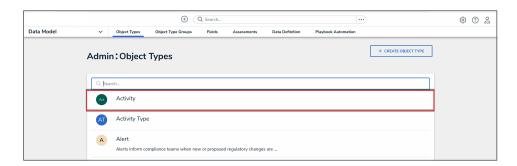
Administrator Settings Menu

3. From the *Admin Overview* screen, click the **Object Types** tile under the **Data Model** section.



Object Types Tile

4. From the *Object Types* screen, from the list of object types, click the object type that you want to add a formula to.

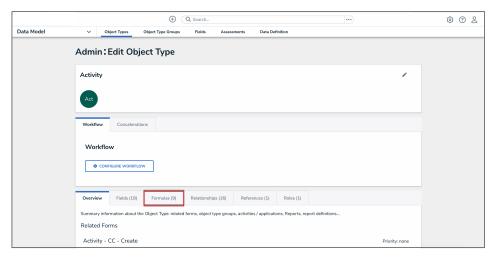


Object Types Screen

Adding a Formula to an Object Type

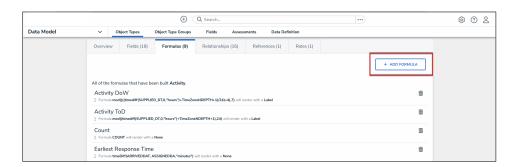
1. From the *Edit Object Type* screen, click the **Formulas** tab.





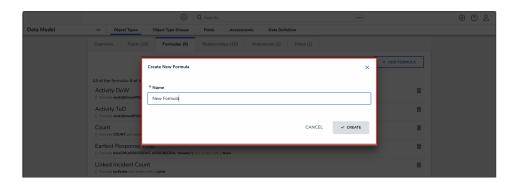
Formulas Tab

2. From the **Formulas** tab, click on the **Add Formula** button.



Add Formula Button

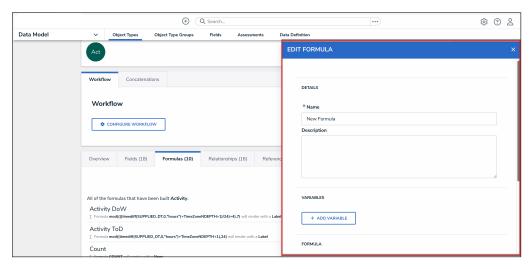
3. From the **Create New Formula** pop-up, enter a formula name in the **Name** field (e.g., Estimated Vehicle Damage) and click the **Create** button.



Create New Formula Pop-Up

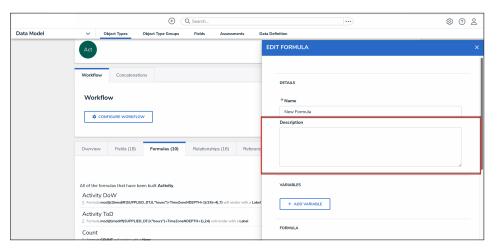
4. In the **Formulas** tab, click the new formula to open the **Edit Formula** pop-up.





Edit Formula Pop-up

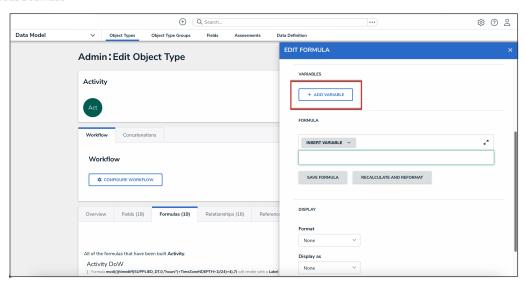
5. **(Optional):** Enter a description documenting the formula's internal use in the **Description** field.



Description Field

6. From the **Variables** section, click the **Add Variable** button. A variable is a value in which the formula calculations are performed.

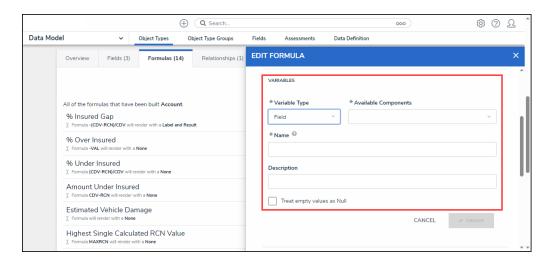




Add Variable Button

- 7. From the **Variables** section, select one of the following types from the **Variable Type** drop-down list:
 - Field: After selecting the Field variable, the following field will appear:
 - Available Components: Select a field or formula from the Available
 Components drop-down field adding it directly to the object type.

Note:
Fields can be added to formulas after they are added to an object type or if they are associated through a relationship or reference. Only numeric fields, date fields, and select lists with numeric values are accepted. For more information, see the Fields article.

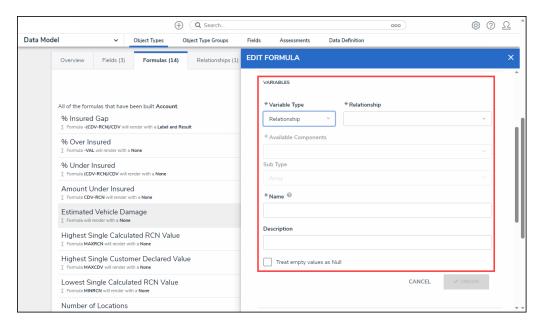


Field Variable Type

 Relationship: After selecting the Relationship variable, the following fields will appear:



- Relationship: Select the object type relationship from the Relationship drop-down list. Relationships connect two or more objects. The user must add a relationship to an object type to appear on the Relationship drop-down list.
 See the Add Relationships to an Object Type article for further information on adding a relationship to an object type.
- Available Components: Select a field or formula from the Available
 Components drop-down field adding it directly to the object type.
- Sub Type: Select a sub type from the Sub Type drop-down list. Sub types specify how the data from multiple objects are compiled, calculated, and displayed. For more information on sub types, see the sub type table in the Variables, Operations, & Functions article.
 - **Array:** Creates a set of values from the variable.
 - Sum: Calculates a total from the variable's set of values and returns a single number. Select list variables cannot use sum sub types.
 - **Count:** The number of times a variable has been added to an object.
 - Average: Calculates an average number from the variable's set of values. Select list variables cannot use average sub types.
 - **Every:** Checks if the variable contains a value on the objects in the relationship/reference.
 - Min: Calculates the lowest number from the variable's set of values.
 Select list variables cannot use min sub types.
 - Max: Calculates the highest number from the variable's set of values.
 Select list variables cannot use max sub types.

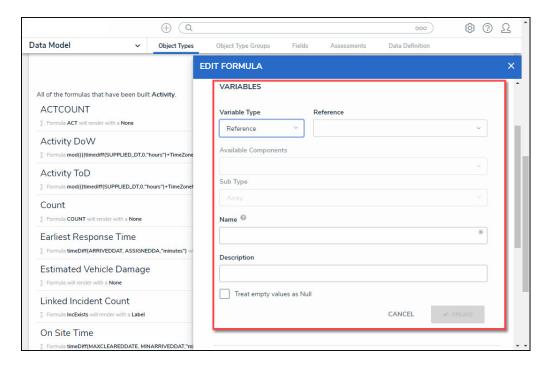


Relationship Variable Type

• **Reference:** After selecting the **Reference** variable, the following fields will appear:



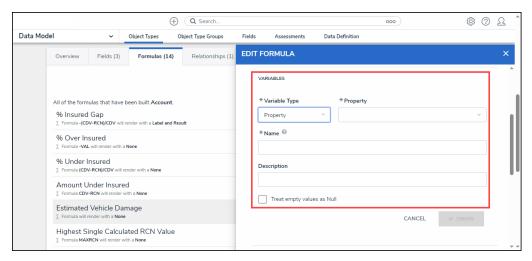
- Reference: Select the object type reference from the Reference drop-down
 list. References indicate that an object is connected to another object through a
 relationship. References are automatically created when a relationship is
 created. For further information on adding a relationship to an object type, see
 the Add References to an Object Type article.
- Available Components: Select a field or formula from the Available
 Components drop-down field adding it directly to the object type.
- Sub Type: Select a sub type from the Sub Type drop-down list. Subtypes specify how the data from multiple objects are compiled, calculated, and displayed.



Reference Variable Type

- **Property:** After selecting the **Property** variable, the following field will appear:
 - **Property:** Select a property type from the **Property** drop-down list:
 - Is Submitter Confidential: This property type creates a formula that compares the number of confidential submissions against the number of not confidential submissions for customers that use the Confidential Reporting Portal.





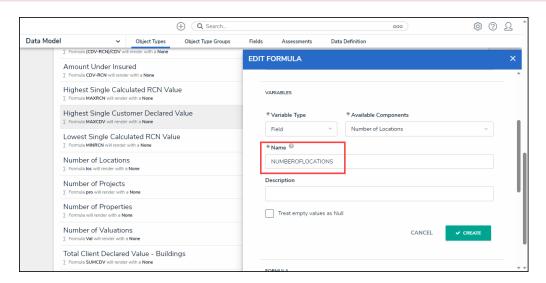
Property Variable Type

- 8. The system will automatically populate the **Name** field with the field or formula's unique ID by default.
- 9. (Optional): Enter a variable name in the Name field.



Warning:

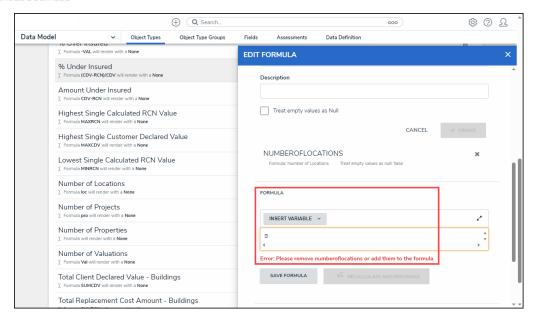
Using a function name (Sub Type Name) in the name field will cause an error.



Variable Name

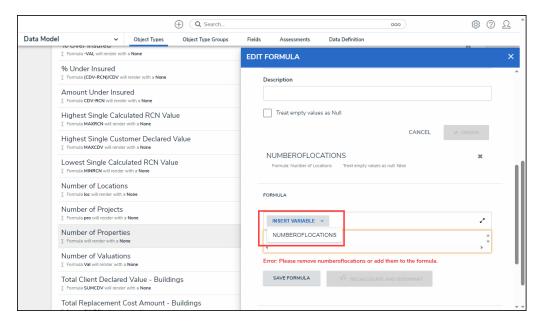
- 10. (Optional): Enter a variable description in the Description field.
- 11. **(Optional):** Select the **Treat empty values as Null** checkbox to exclude blank objects from a formula calculation. For more information, see the Null Values in Formulas article.
- 12. Click the **Create** button to add the variable. The system will perform the Syntax Validation function, and an error message will appear under the **Formula** field, reminding the user to add the variable name to the **Formula** field.





Variable Error Message

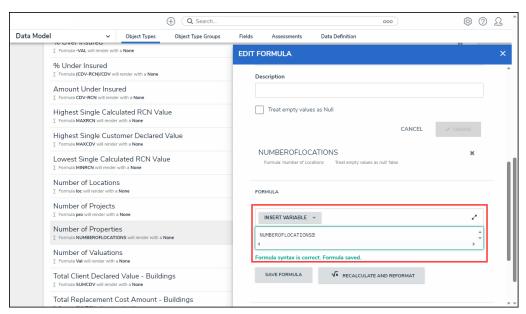
13. Click the **Insert Variable** button and select a variable from the drop-down menu. The selected variable will be added to the **Formula** field.



Insert Variable Button

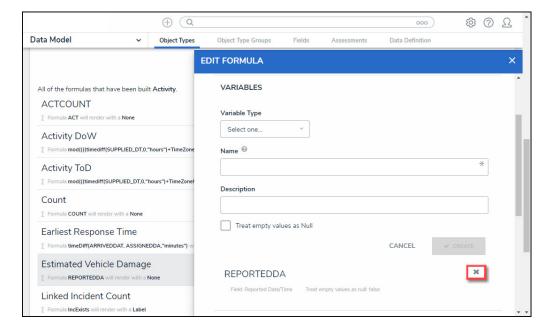
- 14. Click the **Save Formula** button. The **Formula** field will indicate if the formula syntax is correct. If the formula syntax is correct the formula will be saved.
 - Click the **Expand** icon on the **Formula** field to open the expandable screen mode.





Formula Syntax

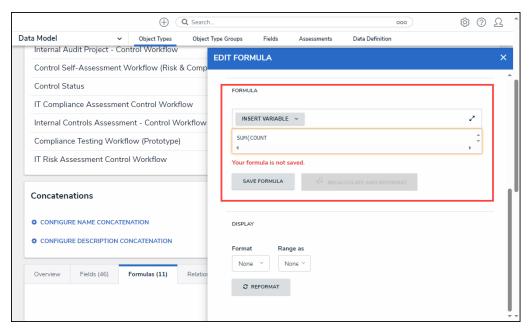
15. Click the **Delete** icon next to the variable to delete the variable.



Delete Icon

- 16. From the Formula section, enter a formula using the variable name(s) you entered in the Name field in the Variables section. Include operators and functions in the Formula field (e.g., INCIDENTSE==3). For more information on operators, see the operators table in the Variables, Operators, & Functions article.
- 17. A system notification will appear under the **Formula** field, indicating that **Your formula is not saved**.
- 18. The **Recalculate and Reformat** button will be greyed out, preventing invalid formulas from being sent to the processing queue and causing a potential slowdown.





System Notification - Your Formula is Not Saved

19. Click the Save Formula button.



Warning:

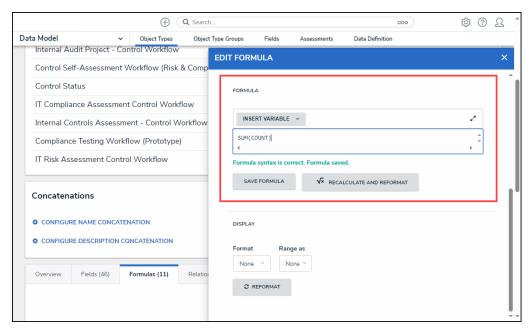
The **Autosave** function was removed from the **Edit Formula** pop-up. Changes to the **Formula** field require a user to click the **Save Formula** button.

Changes not manually saved will be discarded, and the system will revert to the previously saved state.

The system will perform a Syntax Validation on the formula to confirm if the formula is:

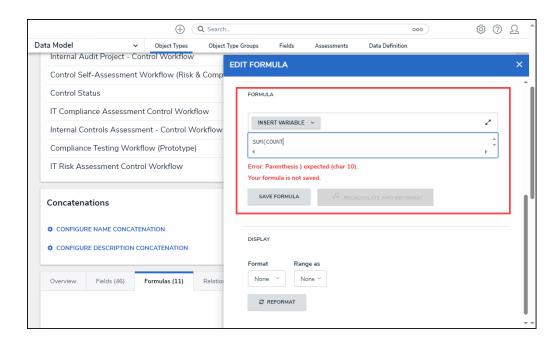
• Valid: A system notification will appear under the Formula field; Formula syntax is correct. Formula saved. The Recalculate and Reformat button will be active.





System Notification - Valid Formula

Invalid: A system notification will appear under the Formula field; Error Syntax
error in part (char 1). The formula is not saved. The error will indicate the
character (char) location of the error in the formula and that the formula is invalid and
not saved. The Recalculate and Reformat button will be greyed out, preventing
invalid formulas from being sent to the processing queue and causing a potential
slowdown.

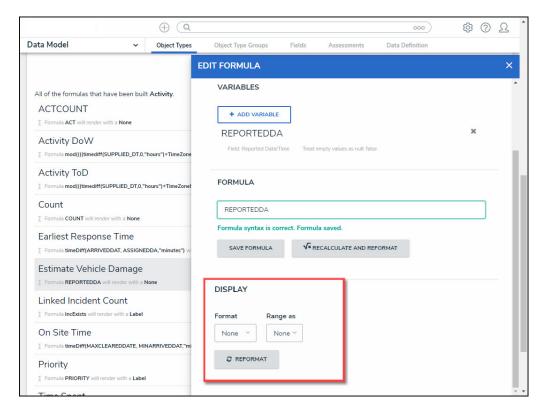


System Notification - Invalid Formula

20. **(Optional):** Click the **Recalculate and Reformat** button to recalculate all the formulas in your Org.



- 21. In the **Display** section, select a format from the **Format** drop-down list:
 - None: Uses no display formats.



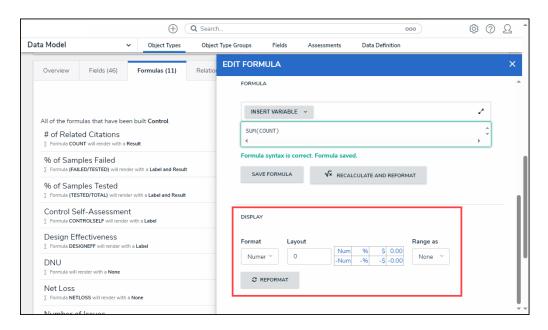
Format = None

- **Numeric:** Allows the user to choose how the numbers will be displayed using the options on the table.
 - Num: Displays numbers in numeric format.
 - %: Displays numbers using percentage format.
 - Cur: Displays numbers using currency format. Currency fields will be formatted as follows:
 - \$ AUD
 - \$ CAD
 - \$ HKD
 - \$ NZD
 - \$ USD
 - £ GBP
 - € EUR
 - F CHF
 - ¥ CNY
 - ¥ JPY
 - The format of the currency value will automatically change based on the currency selected:



Currency Type	Currency Value Format
\$ AUD, \$ CAD, \$ HKD, \$ NZD, \$ USD	\$ 1,234.56
£ GBP	£ 1,234.56
€ EUR	1.234,56 €
F CHF	1.234,56 F
¥ CNY, ¥ JPY	¥ 1,234.56

- **0.00:** Displays numbers using decimal format.
- Layout: Previews the number format selected.

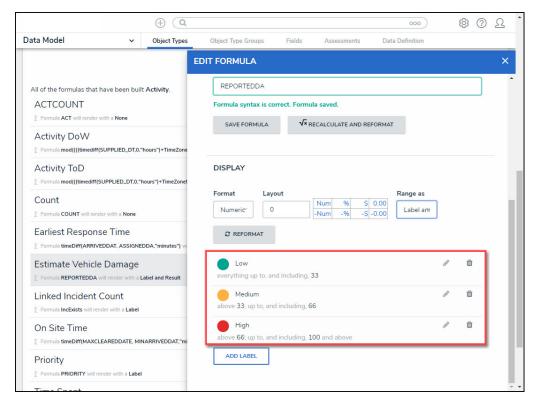


Format = Numeric

• Range as:

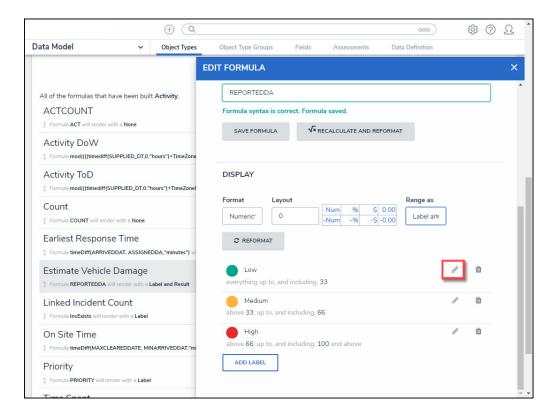
- **None:** The formula will display the numeric results only.
- **Label:** The formula will display the range labels only (e.g., Low, Medium, High) in the color selected for that range.
- Label and Result: The formula will display the numeric results and labels (e.g., Low – 1000) in the color selected for that range.
- **Result:** The formula will display the numeric results only in the color selected for that range.
- 22. If a user selects **Label**, **Label and Results**, or **Results** from the **Range as** drop-down list, the system will automatically add three default formula labels **Low**, **Medium**, and **High**.





Formula Labels

23. Click the Edit icon next to the Formula Label you want to edit.

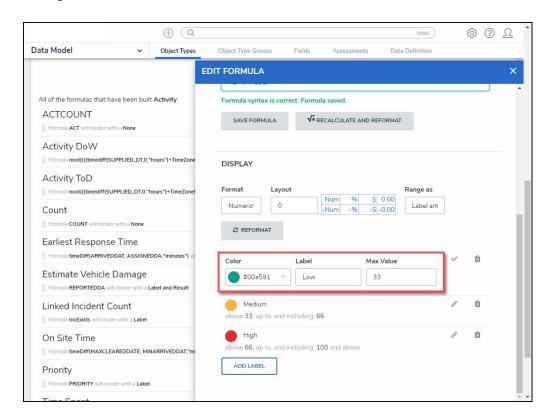


Edit Icon

24. The Formula Label fields will appear, allowing the user to edit the field values:



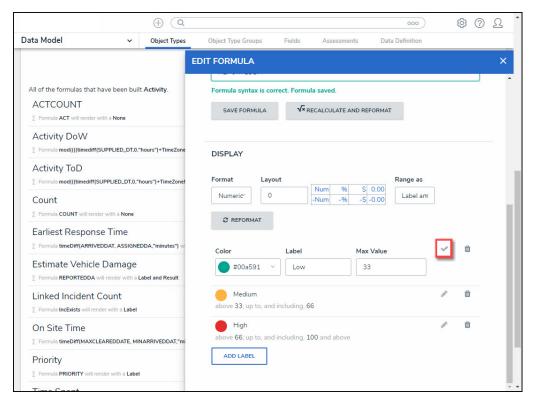
- **Color:** Click the **Color** drop-down to reveal the color picker and select a new color for the label. You can also type a hex color into this field to select a color.
- Label: Enter a new name for the label in the Label field.
- Max Value: Enter a maximum value in the Max Value field, creating a numeric value range for the Formula Label.



Formula Label Fields

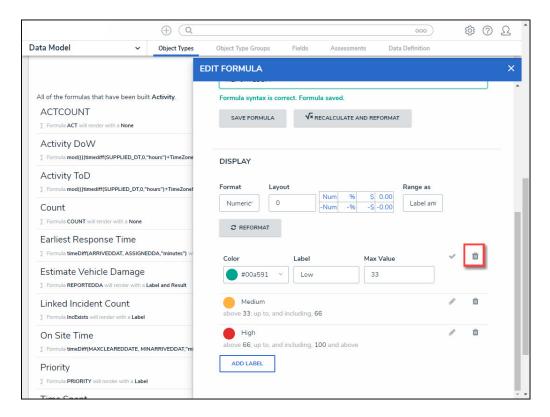
25. Click the **Save** icon to save your changes.





Save Icon

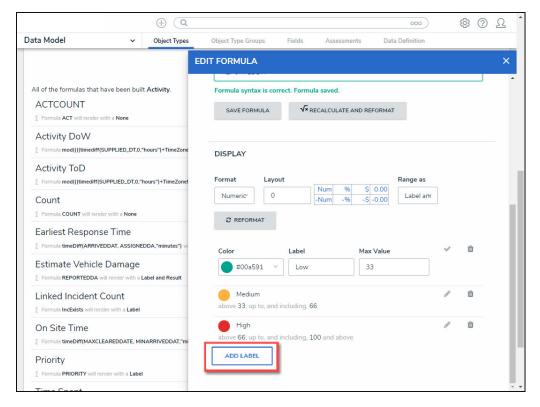
26. Click the **Delete** icon to delete a Formula Label.



Delete Icon

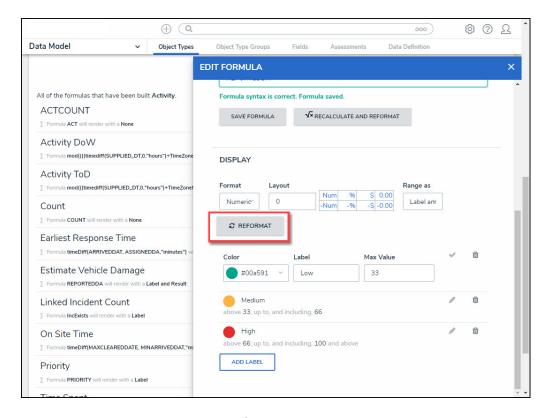
27. Click Add Label button to add a new label.





Add Label Button

28. If changes are made to the **Formula Label** on the **Display** section, you must click the **Reformat** button before the changes are displayed.



Reformat Button