

## **VLookUps with Designer**

### **The Find Replace Tool**

One of the most common tasks that a data analyst performs is associating data in one table with data in another to help answer a business question. This process is commonly known as a "Vlookup" or "Replace" function.

You may want to replace a known value in a dataset or append additional data when a value is found. In Alteryx, this type of process can be done in a couple of ways but using the Find Replace tool is one of the easiest.

### **A Good Match**

Even though it's a single tool, Find Replace uses a complex process to blend data from two inputs together. To configure the tool, four key pieces of information are required.

- 1) Identify a column in our dataset whose values we want to replace or associate with other values.
- 2) A lookup table. This table must contain the value you are searching for (values in the column from step 1 and the new value(s) you want to associate it with on the same row.
- 3) The parameters for determining a match between values.
- 4) What should happen to the associated data. E.g. Overwrite or append other value.

This dataset contains information on potential locations for a new storefront. Of particular interest is the column "Zoning Codes", which defines how the real estate may be used. These alphanumeric Zoning codes are not intuitive and should be replaced with the Zoning Names associated with those codes.

A lookup table includes corresponding Zoning Names for each code and some additional information on property taxes and land use categories.

Drag a Find Replace tool onto the canvas to associate the data from the 2 inputs.

### **Connecting the Data**

After connecting the Dataset and lookup table to the appropriate anchors, the Find Replace tool can be configured. When connecting data, ensure that the Find anchor is connected to the dataset you want to search and the lookup table containing the replacement value is connected to the Replace anchor. It is important that the connections are made properly because the dataset connected to the Find anchor will be output by the Find Replace tool. The configuration window is divided into the criteria for finding a match between the two inputs and the criteria for replacing matched values.

### **Find Options**

The search dropdown of the Find Replace tool's configuration window offers 3 options for identifying matching values in the two inputs. Click the options below to see how they match the values in the dataset.

Use the search dropdown to select "Entire Column" as the search type.

In the Find Within Section, use the dropdown to select "Zoning Code".

Find Within Section will search the Dataset connected to the Find input anchor. Next, use the "Find Value from Column" dropdown to select "Zoning Code".

The "Find Value From Column" section will search the column specified in the dataset connected to the replace input anchor.

### **Replace Options**

Now that the criteria for finding a match is `_ entered_`, the criteria for replacing matched values can be `_ entered_`. The default configuration replaces the matched text with a value from the specified column in the Lookup table. In this instance, the default settings are acceptable.

After running the workflow, the Zoning Codes have been replaced by the Zoning Names but the column name is unchanged. Closer inspection of the results reveals that not all values were replaced. The Find Replace tool is case sensitive by default. To replace all values, regardless of case, the Case Insensitive box is selected. After re-running, all Zoning Codes have been replaced.

### **Appends on What You're Trying to Do...**

The Find Replace tool can also append columns from a LookUp Table to a dataset when a match occurs. Select the "Append Column(s) to Row" and then select the columns to append.

After running the workflow, the desired columns appear in our dataset and the values in "Zoning Code" remain unchanged from the original dataset.

### **To Join, or Not to Join**

While the Find Replace tool and Join tool share similar functionality, each method offers unique advantages.

- 1) The biggest advantage to using the Find Replace tool is the flexibility in how matches between values in a dataset and a LookUp table are found. A Join requires an exact match: case, spelling, punctuation, whitespace... everything between two values in the different inputs must be the same. The Find Replace tool can be configured to

determine matches that are case insensitive and match on different placements of characters within a data cell.

- 2) The Find Replace tool's output configuration options allow for the direct replacement of data in one dataset with data from another, which is not an option in the Join tool.
- 3) The Find Replace tool can only identify matching values within columns that are string data types. Columns of other datatypes must be converted upstream and then converted again downstream.
- 4) Unlike the Join tool, the Find Replace tool does not contain an embedded Select window, which means that columns cannot be renamed or re-ordered prior to output. A separate Select tool must be used.
- 5) Only a single match can be used between a lookup table and a dataset. The Join tool, however, will return associated data from all matches that are found between the dataset and the LookUp table.