Arcade: An Introduction

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Arcade is a portable, lightweight, and secure expression language for the ArcGIS Platform.

- Evaluate mathematical equations
- Manipulate text
- Evaluate logical statements
- Query and manipulate geometries
- Alter symbology, transparency, rotation, etc
- Establish rules for attributes
- Format contents of popups

An interoperable expression syntax for

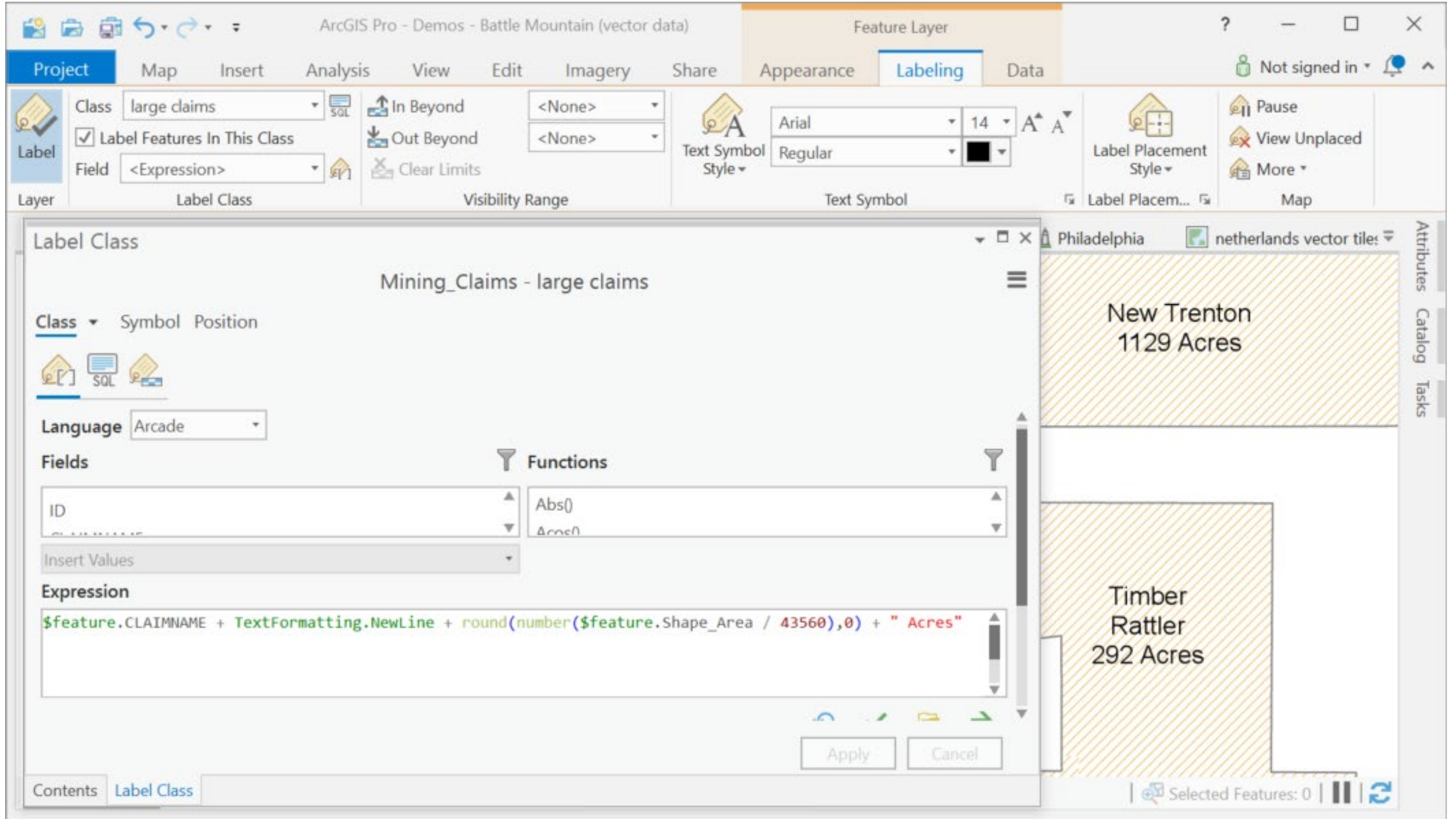
- ArcGIS Pro
- ArcGIS Runtime
- ArcGIS Online and ArcGIS Enterprise
- ArcGIS API for JavaScript
- Attribute Rules in the geodatabase
  - Automatic calculation of fields
  - Constraints and validation

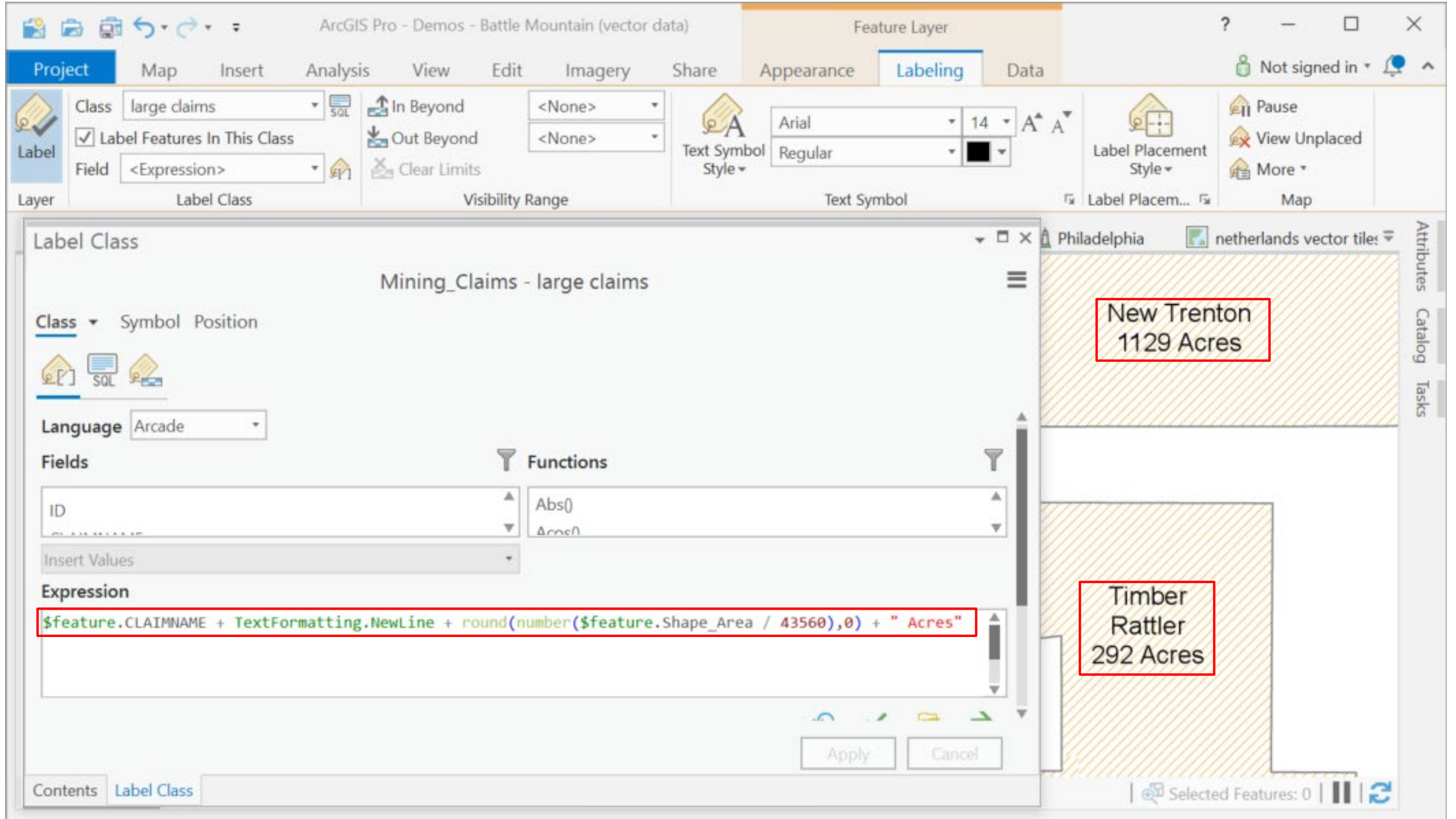
What Arcade is not

- Not a replacement for Python
- Not a stand-alone scripting environment

Arcade expressions run inside ArcGIS apps

… For example, a label expression in ArcGIS Pro


ArcGIS Pro - Demos - Battle Mountain (vector data)
Feature Layer
Project
Map
Insert
Analysis
View
Edit
Imagery
Share
Appearance
Labeling
Data
Not signed in
Label
Class
large claims
Label Features In This Class
Field
<Expression>
Layer
Label Class
In Beyond
Out Beyond
Clear Limits
<None>
<None>
Visibility Range
Text Symbol Style
Arial
Regular
14
Text Symbol
Label Placement Style
Label Placem...
Pause
View Unplaced
More
Map
Label Class
Mining_Claims - large claims
Class
Symbol
Position
SQL
Language
Arcade
Fields
Functions
ID
Abs()
Insert Values
Expression
$feature.CLAIMNAME + TextFormatting.NewLine + round(number($feature.Shape_Area / 43560),0) + " Acres"
Apply
Cancel
Contents
Label Class
Philadelphia
netherlands vector tile
New Trenton
1129 Acres
Timber
Rattler
292 Acres
Selected Features: 0
Attributes
Catalog
Tasks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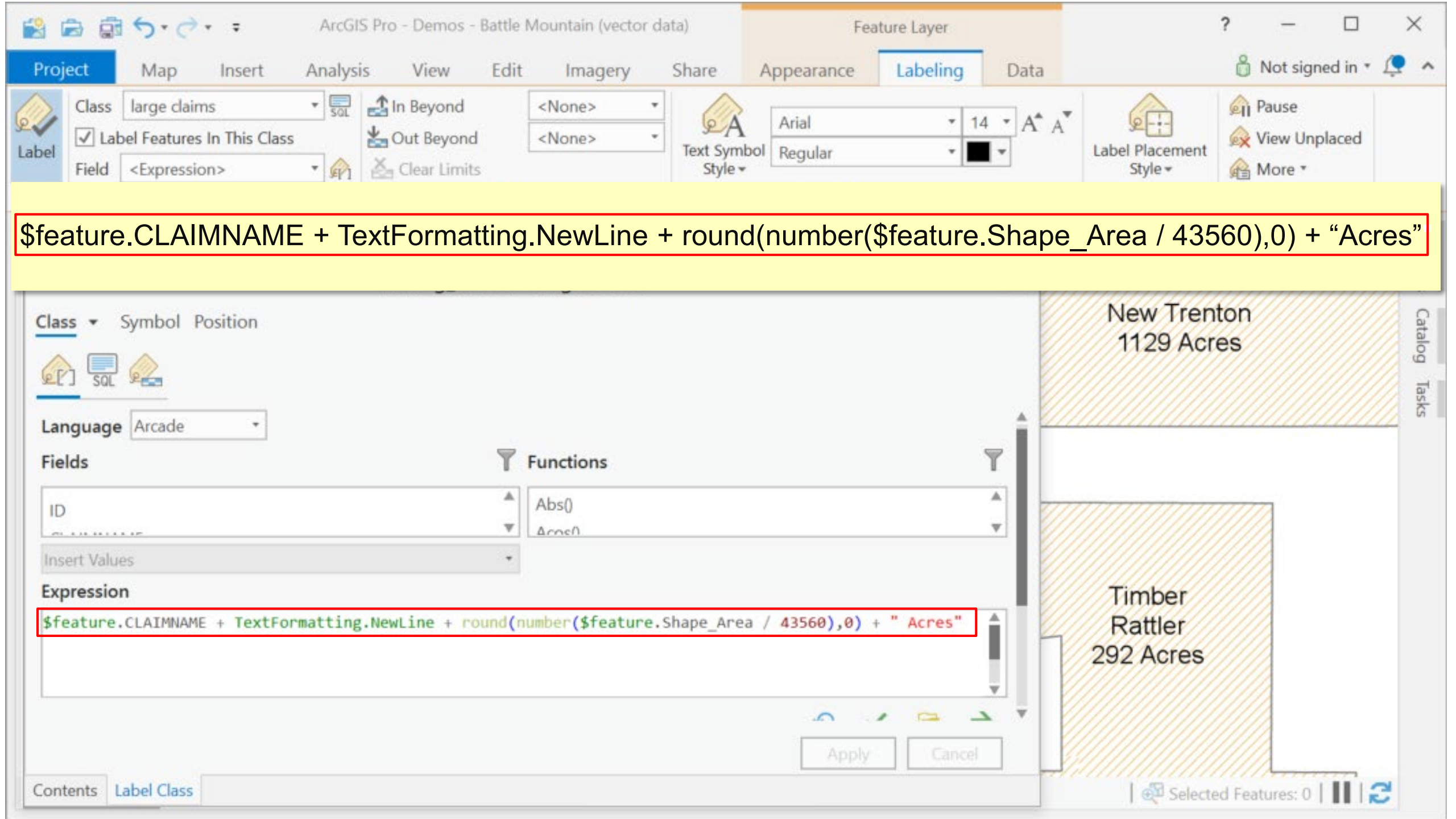
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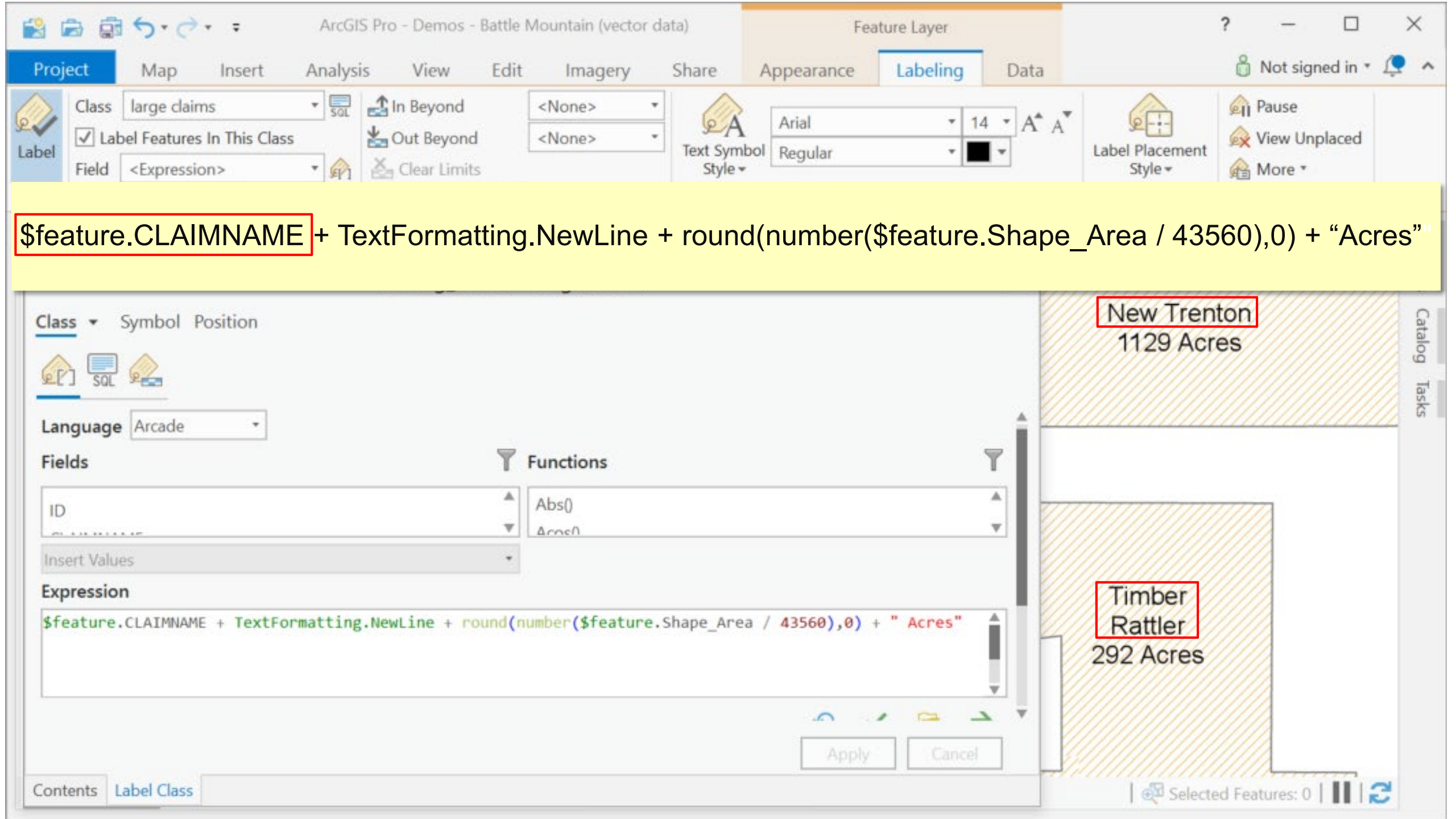
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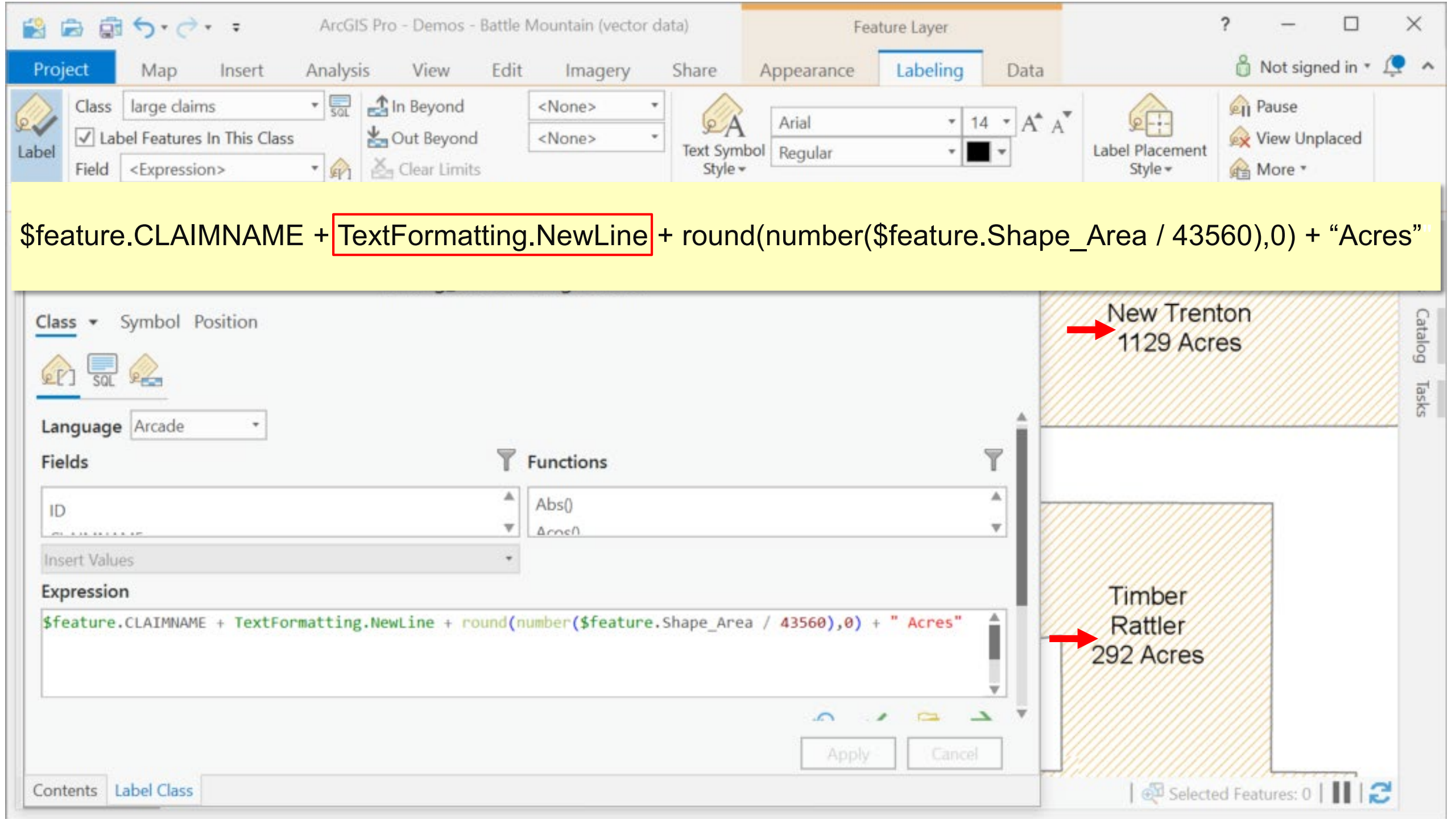
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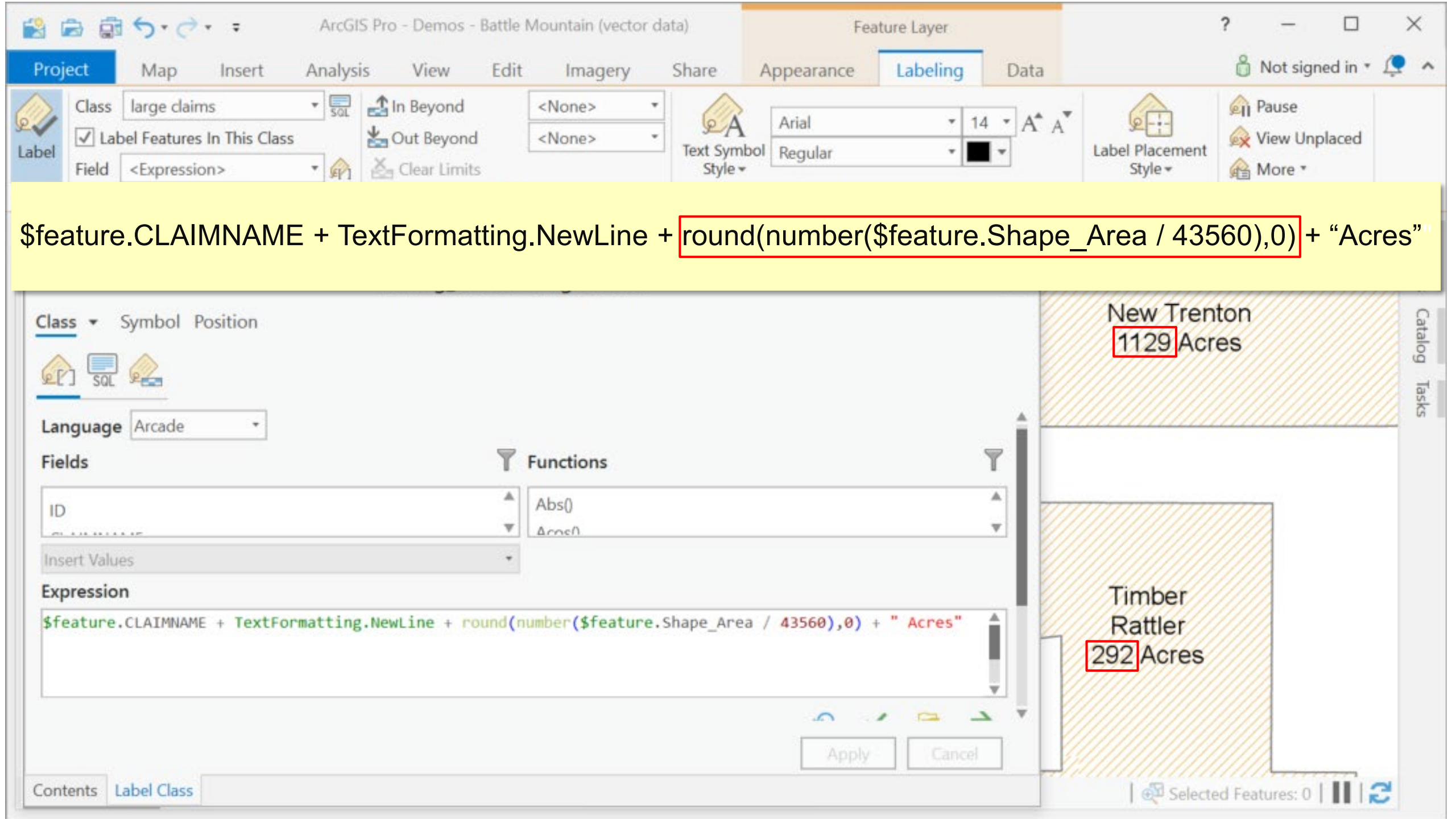
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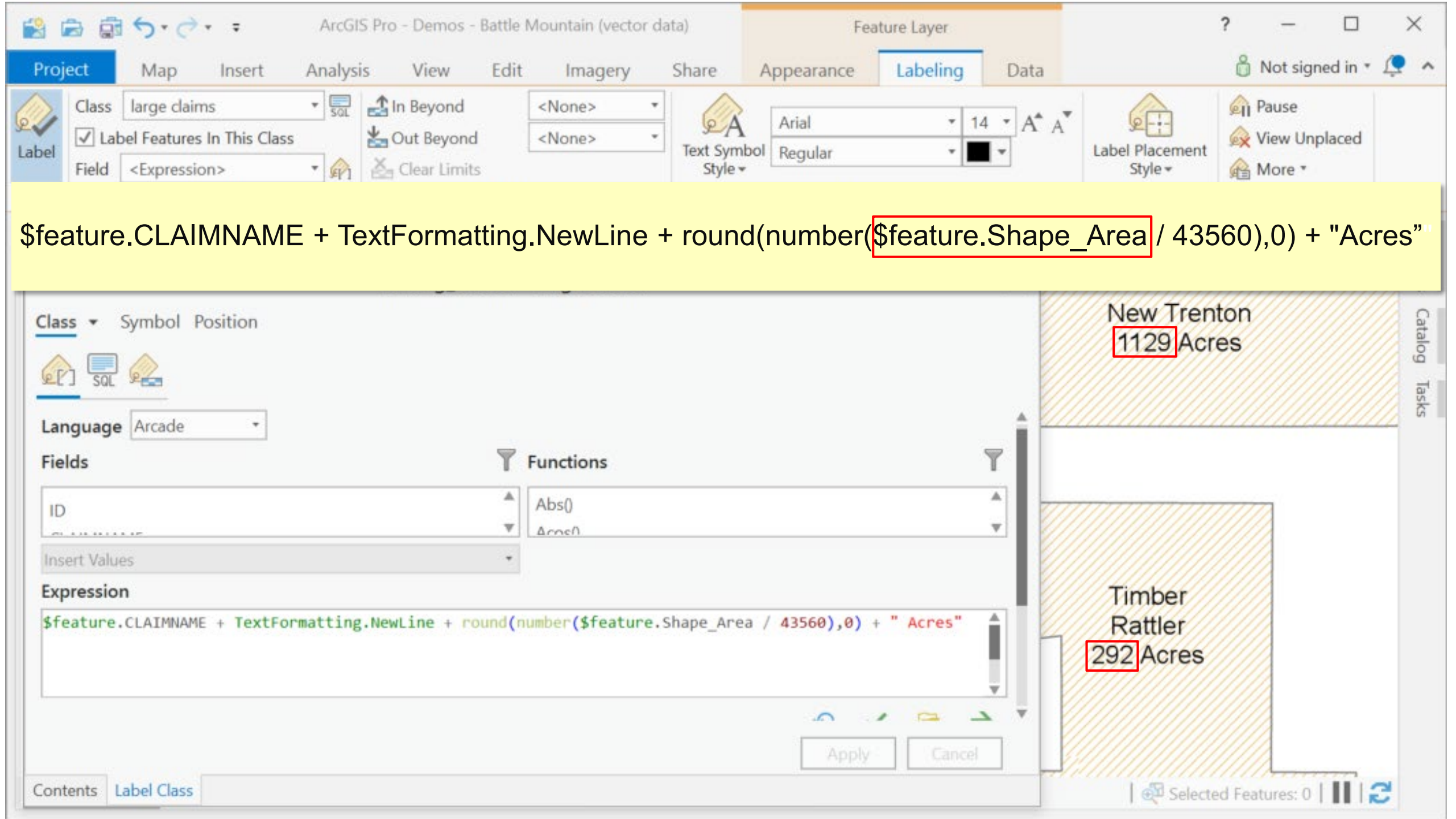
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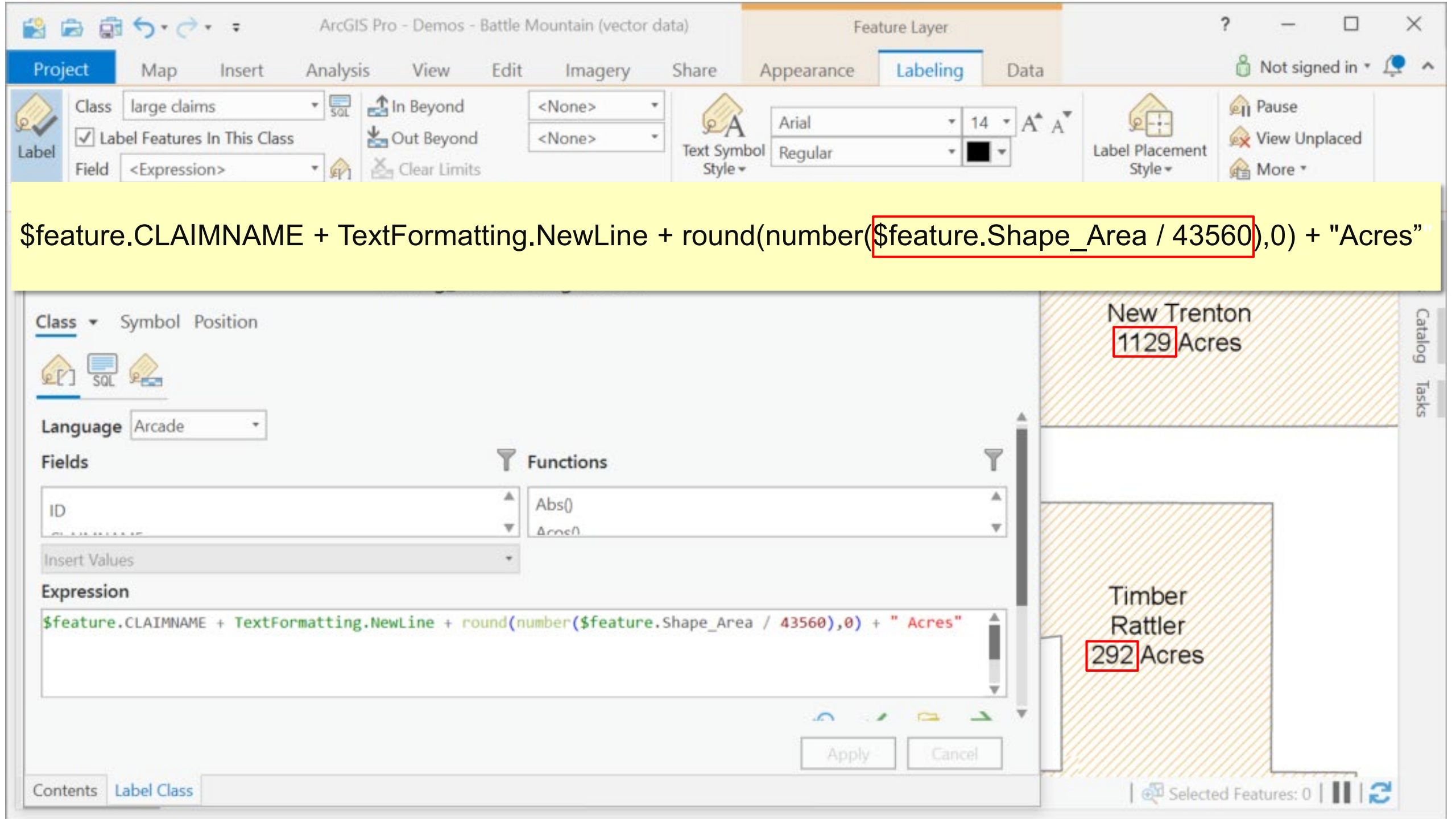
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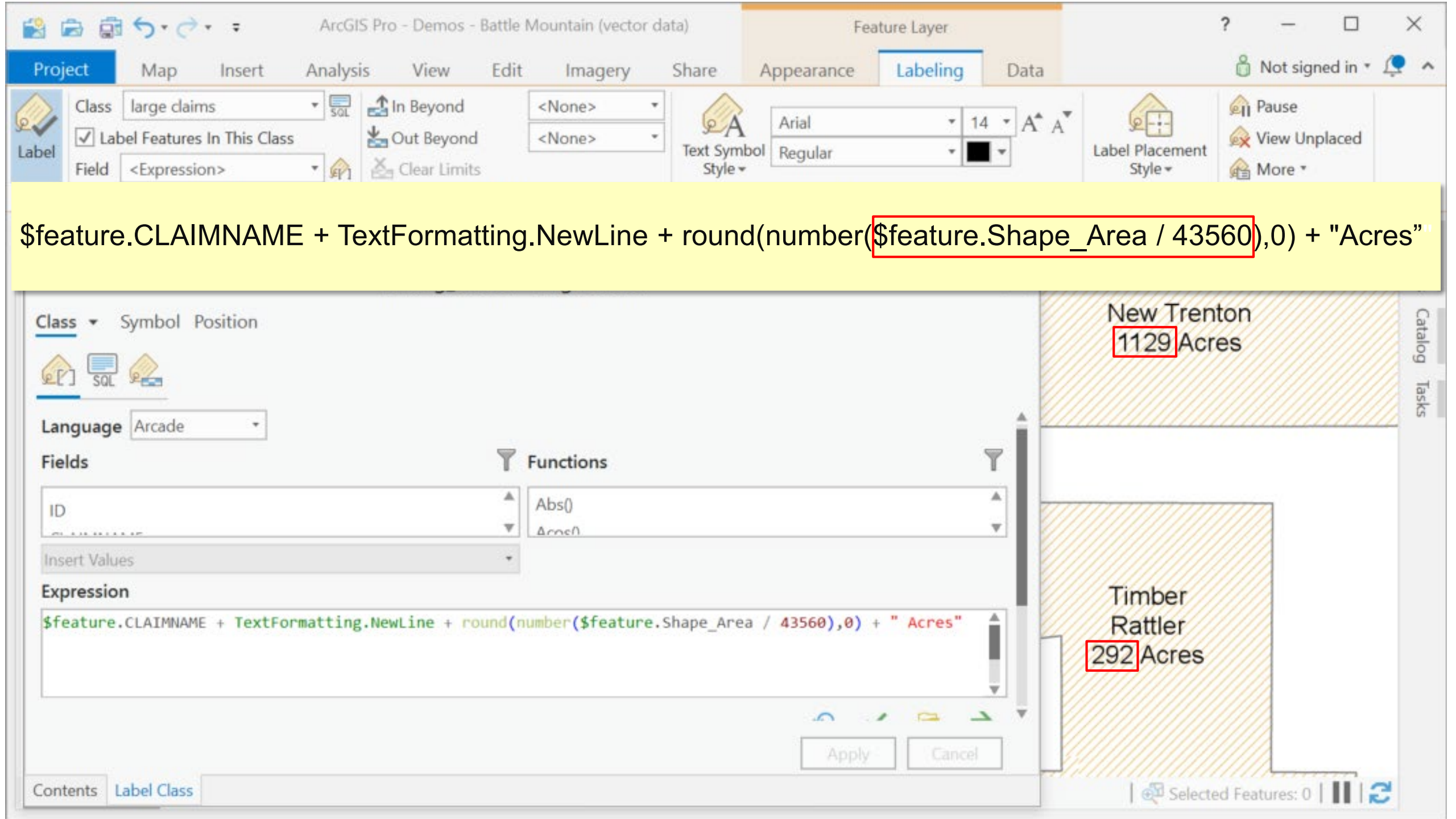
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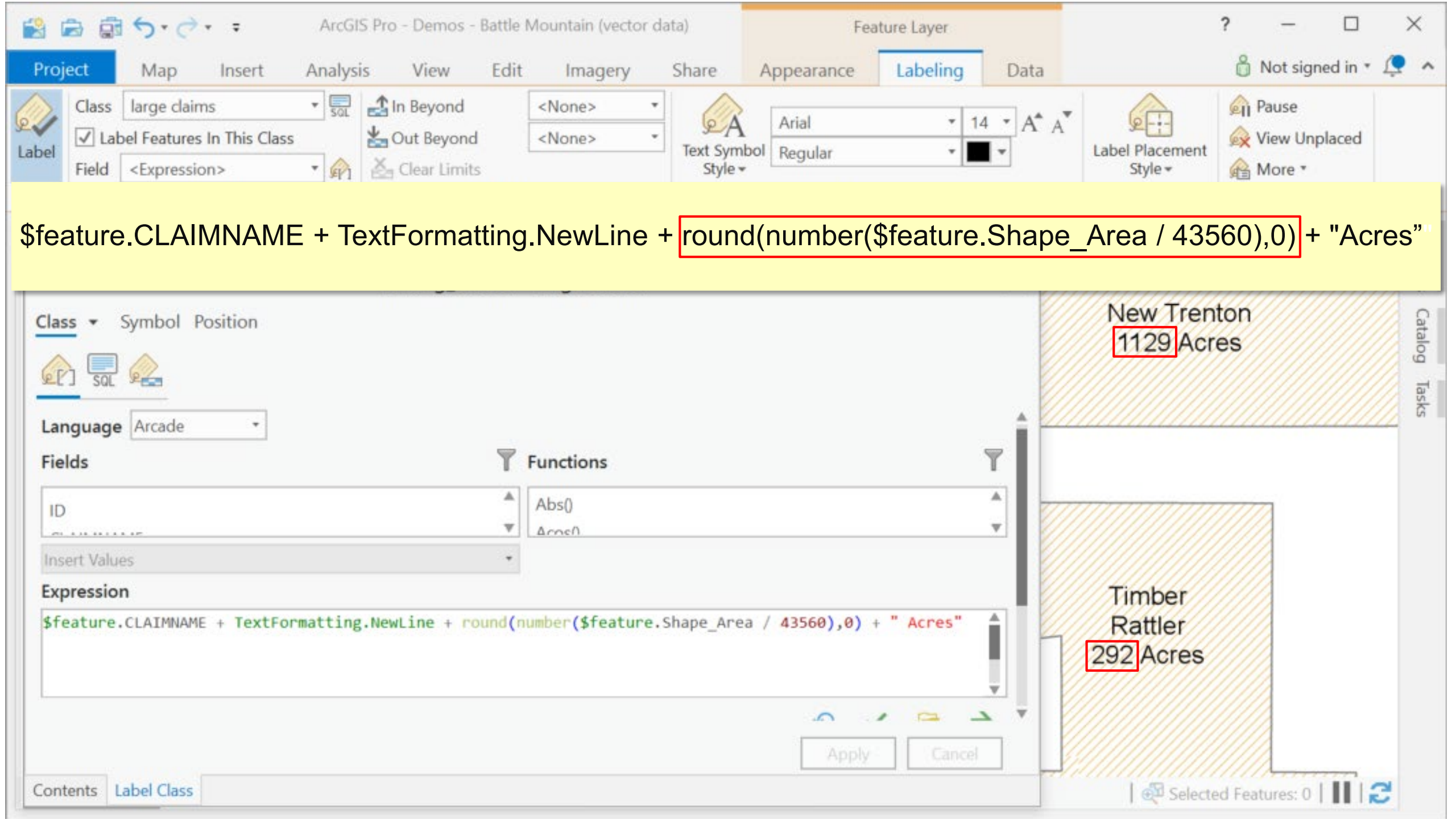
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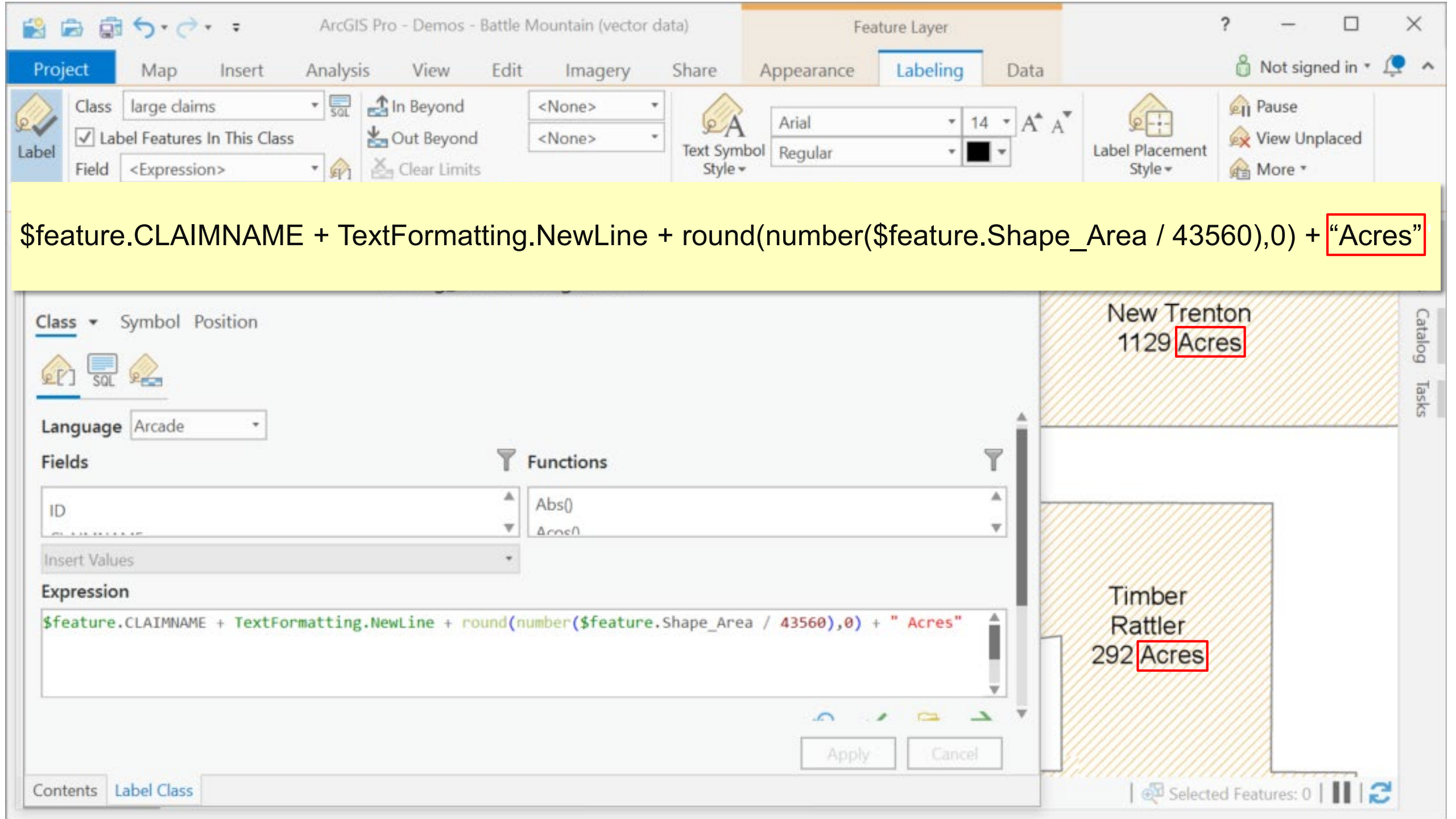
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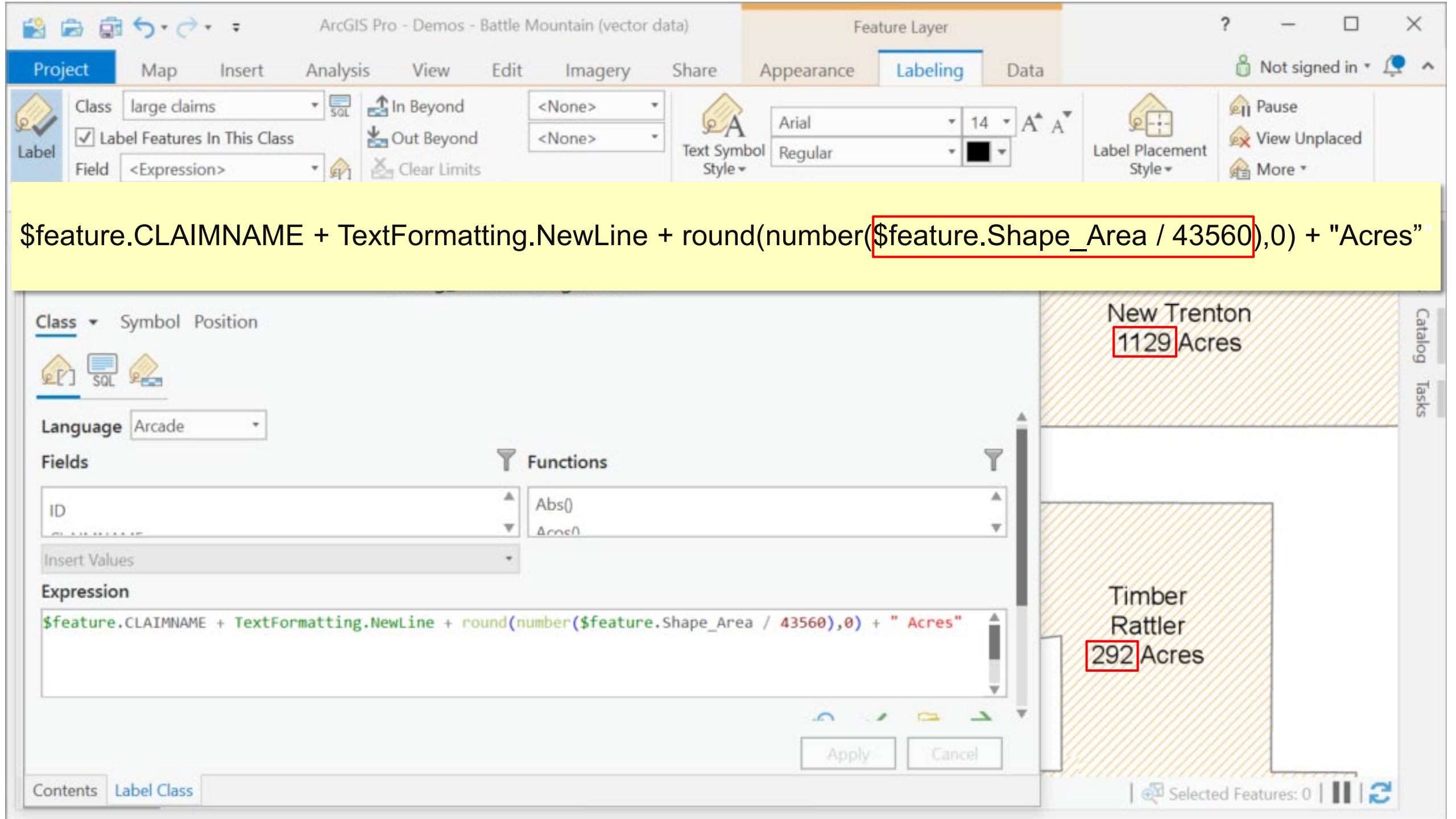
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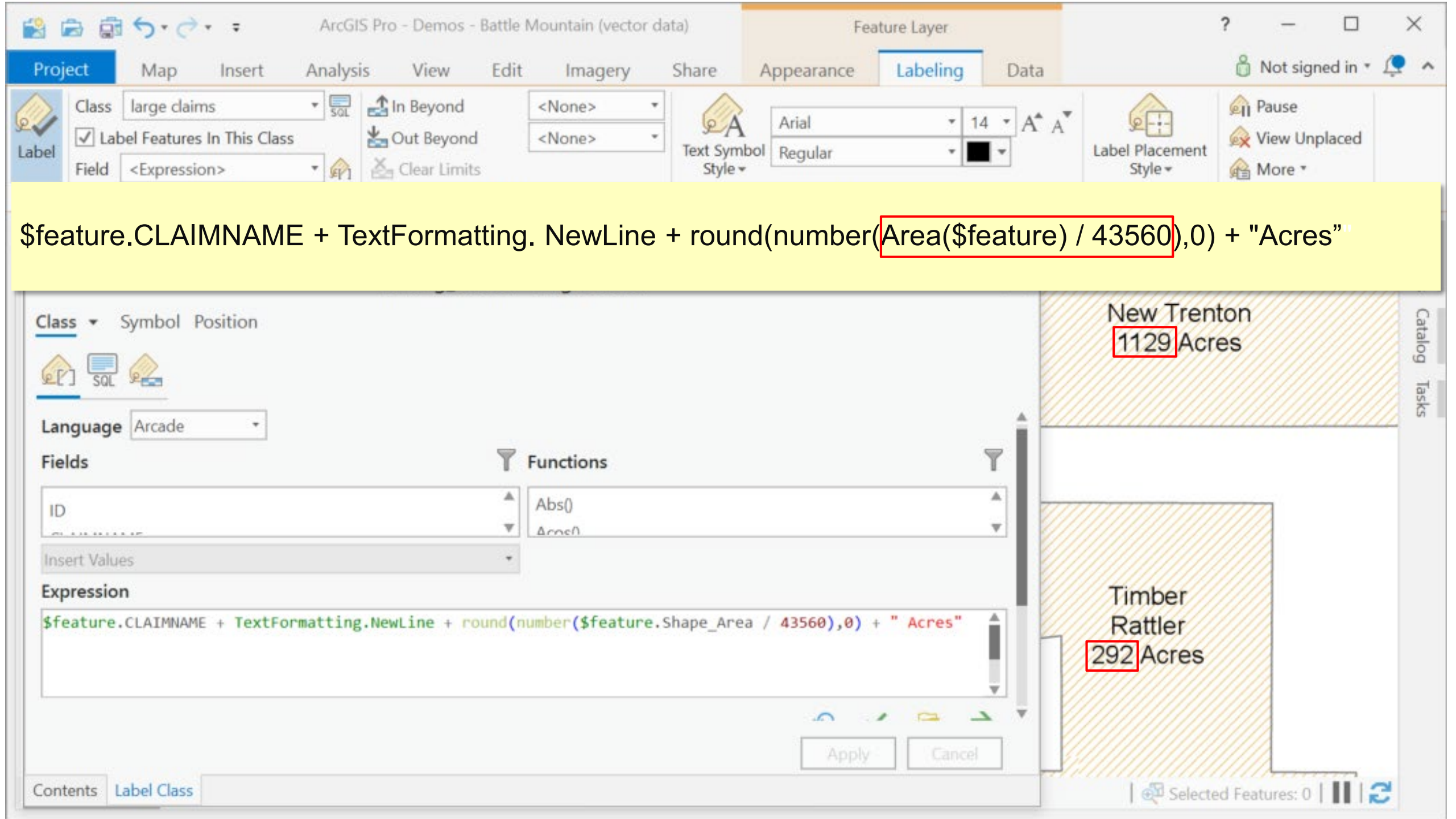
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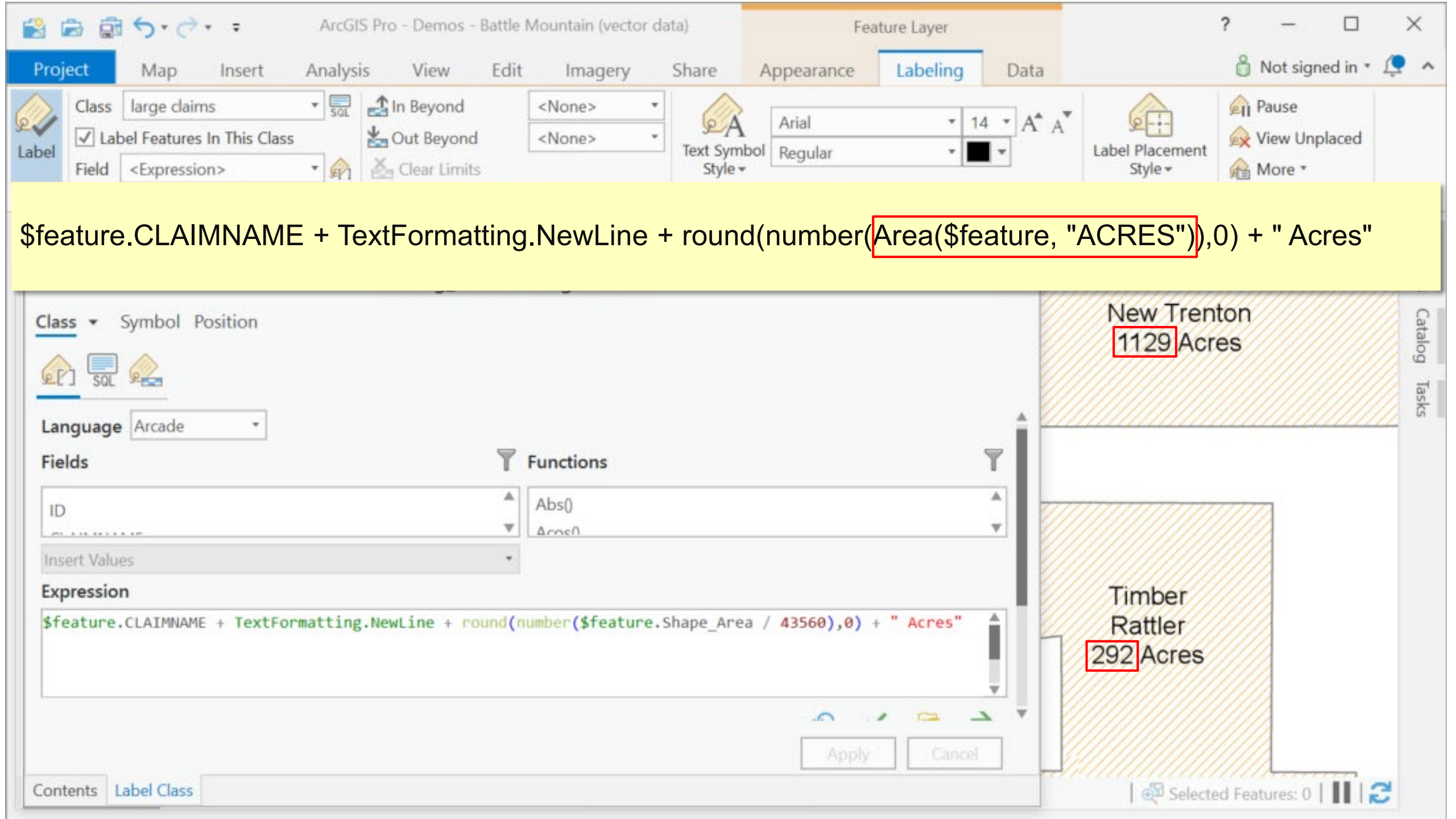
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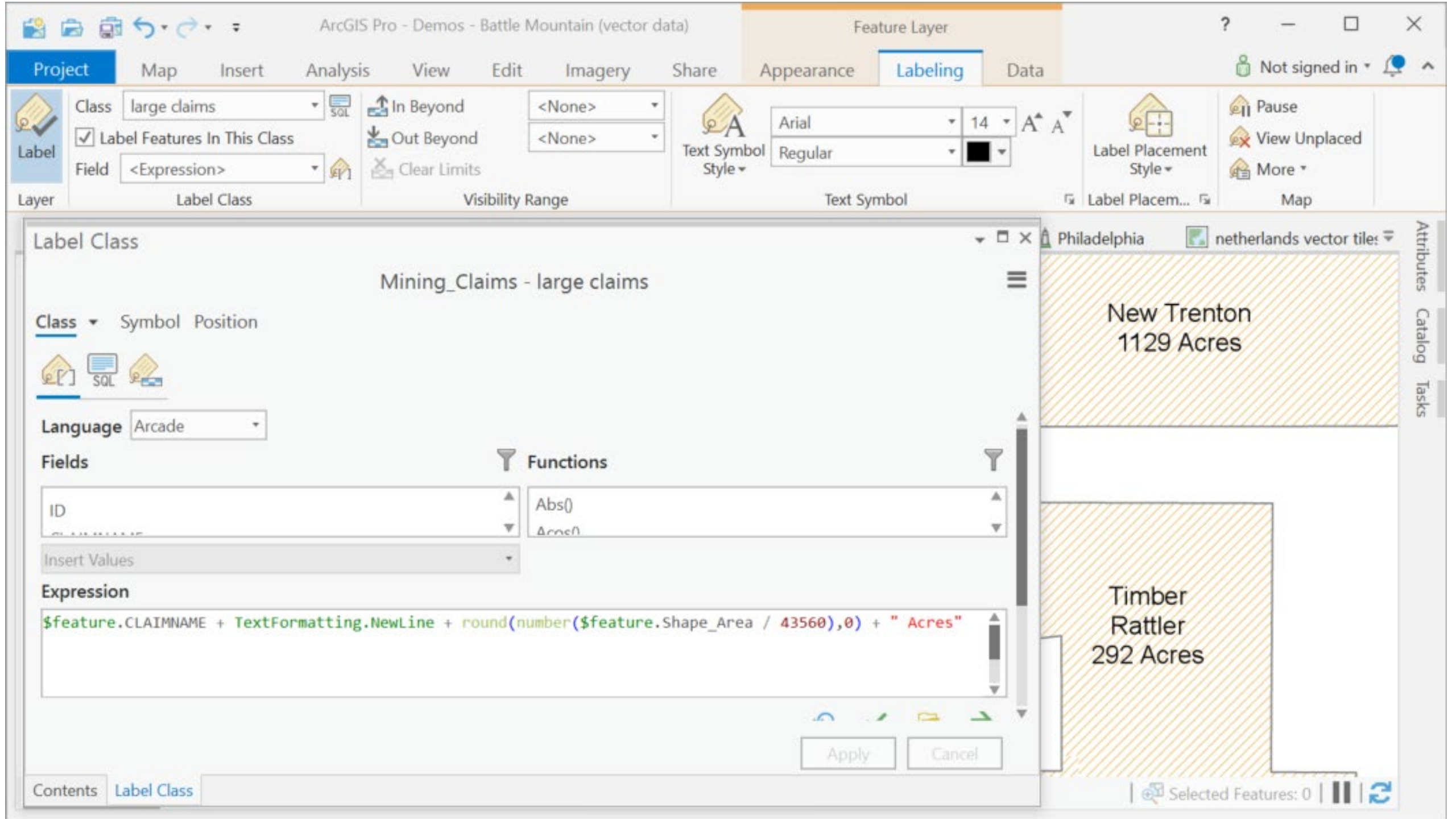
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Labeling is a Profile in Arcade

A context in which an Arcade expression is evaluated and understood

- A label expression is understood and evaluated in multiple applications
- Here is the same Arcade label expression in the ArcGIS API for JavaScript

```
var claimLabels =
  $feature.CLAIMNAME + TextFormatting.NewLine + round(number(Area($feature, "ACRES")),0) + " Acres";

const labelClass = new LabelClass({
  labelExpressionInfo: {expression: claimLabels},
  symbol: {type: "text", color: "black", haloSize: 1, haloColor: "white"}
});
featureLayer.labelingInfo = [ labelClass ]
```

Here are the profiles that are currently supported
We will show you examples of some of them

- Labeling
- Field Calculate
- Visualization
- Popups
- Alias
- Attribute Rules
- Constraint
- Feature Z

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How to get started

- On ArcGIS for Developers: https://developers.arcgis.com/arcade/
  - Includes a language playground for experimenting with the language