

Esri Developer Summit

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esri.com/events/devsummit



Troubleshooting Python Scripts

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A decorative graphic at the bottom of the slide. It features a curved orange border at the top, followed by a semi-transparent blue and green map background. Overlaid on the map is a snippet of Python code in a light green font, which is slightly blurred and tilted. The code appears to be related to Esri's ArcPy library, specifically dealing with symbols and features.

```
esri.symbol.SimpleLineSymbol([0,0,0,0.5]), 1));
new dojo.Color([0,0,0,0.5]), 1));
feature.setSymbol(polySymbolGreen);
} else if(f == 1) {
var polySymbolGreen =
polySymbolGreen.setOutline(
symbol.SimpleLineSymbol(esri.symbol.
Color([0,0,0,0.5]), 1));
polySymbolGreen.setColor(new dojo.
feature.setSymbol(polySymbolGreen);
} else if(f == 2) {
polyBlue = new esri.symbol.SimpleLineSymbol(
setOutline(new
esri.symbol.SimpleLineSymbol(
new dojo.Color([0,0,0,0.5]), 1));
```

Agenda

- **Identify and Resolve Common Python Errors**
 - **Syntax Errors**
 - **Runtime Errors**
 - **Logic Errors**

Syntax Errors

```
esri.symbol.SimpleLineSymbol,
new dojo.Color([0,0,0,0.5]),
polySymbol(feature.setSymbol(
} else if(f == 1) {
var polySymbolGreen =
polySymbolGreen.setOutline(
symbol.SimpleLineSymbol(esri.symbol.
Color([0,0,0,0.5]), 1));
polySymbolGreen.setSymbol(polySymbolGreen);
feature.setSymbol(polySymbolGreen);
} else if(f == 2) {
var polyBlue = new esri.symbol.SimpleLineSymbol(
polyBlue.setOutline(new dojo.Color([0,0,0,0.5]), 1));
polyBlue.setSymbol(polyBlue);
}
```

Python Syntax

- **Rules that defines how Python will be written and interpreted**
- **Designed to be a highly readable language**
 - **English keywords**
 - **Case-sensitive**
 - **Whitespace matters**

Finding Syntax Errors



Runtime Errors

```
esri.symbol.SimpleLineSymbol({
  color: [0, 0, 255],
  width: 2,
  style: 'solid'
});
feature.setSymbol(new dojo.Color([0, 0, 255], {
  alpha: 0.5
}));
else if(f == 1) {
  var polysymbolGreen = new esri.symbol.SimpleLineSymbol({
    color: [0, 0, 0.5],
    width: 2,
    style: 'solid'
  });
  polysymbolGreen.setOutlineColor([0, 0, 0.5]);
  feature.setSymbol(polysymbolGreen);
} else if(f == 2) {
  polysymbolBlue = new esri.symbol.SimpleLineSymbol({
    color: [0, 0, 255],
    width: 2,
    style: 'solid'
  });
  polysymbolBlue.setOutlineColor([0, 0, 255]);
  feature.setSymbol(polysymbolBlue);
}
```

Runtime Errors

- **An error that occurs during execution**
- **Results in an exception being raised**
- **Unhandled exceptions stop execution of script**
 - **Print to interactive window or GP result**

Understanding Exceptions

- **Exceptions come in different types**
 - **Built-in exceptions (NameError, TypeError)**
 - **ArcPy exceptions (ExecuteError, ExecuteWarning)**
- **Last line indicates what happen**
- **Preceding lines shows where the exception occurred**

Handling Exceptions

- **Utilize try/except clause**
 - **Code executes within try**
 - **If no exception occurs except clause is skipped**
 - **If exception occurs try clause is skipped and except clause is run**
- **try clause may have more than one except clause**
 - **Handlers for specific exception types**

Finding Runtime Errors



Logic Errors

```
esri.symbol.SimpleLineSymbol,
new dojo.Color([0,0,0,0.5]),
polySymbol.setColor([0,0,0,0.5]),
feature.setSymbol(polySymbol);
} else if(f == 1) {
var polySymbolGreen = new
polySymbolGreen.setColor([0,0,0,0.5]),
polySymbolGreen.setOutlineColor([0,0,0,0.5]),
polySymbolGreen.setSymbol(polySymbolGreen);
} else if(f == 2) {
var polySymbolBlue = new esri.symbol.SimpleLineSymbol,
polySymbolBlue.setOutlineColor([0,0,0,0.5]),
polySymbolBlue.setColor([0,0,0,0.5]),
polySymbolBlue.setSymbol(polySymbolBlue);
}
```

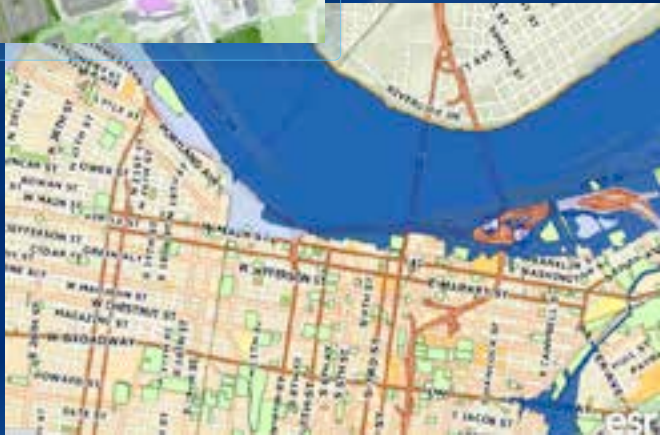
Logic Errors

- **Code executes without error but results are unexpected**
 - Using the wrong formula or algorithm
 - Conditional statement that can't be satisfied
 - Passing wrong variable to a function
- **Often subtle which can make them difficult to find**

Debugging Logic Errors

- **Simplify the code**
 - Remove unnecessary function calls
 - Hardcode variables when possible
 - Preprocess the data
- **Run in debugger**
 - Step through the code
 - Print the variables to the interactive window

Debugging Logic Errors





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