



## **API 5: Create Area Lines**

### Python in Dynamo

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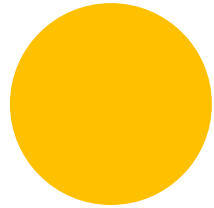
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PYTHON  
FUNDAMENTALS



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# Dynamo and Python

## Create Area Line (API 5)

# This video

- Navigate Revit API Docs
- Dynamo curves to Revit
- Create Revit elements
- Pass new elements to Dynamo as elements

```
Python Script
1 # Made by Gavin Crump
2 # Free for use
3 # BIM Guru, www.bimguru.com.au
4
5 #Reference for script name: https://github.com/Amoursol/dynamoPython/blob/master/dynamoAPI/dynamoAPICurrentGraphName.py
6 #Thanks to John Pierson for sharing the code for Dynamo file data
7
8 #Add CLR and Dynamo services for its API
9 import clr
10 clr.AddReference('DynamoRevitDS')
11 import Dynamo
12 from System import Environment
13
14 #Add document manager from Revit services
15 clr.AddReference('RevitServices')
16 import RevitServices
17 from RevitServices.Persistence import DocumentManager
18
19 # access to the current Dynamo instance and workspace
20 DynamoCurrent = Dynamo.Applications.DynamoRevit()
21 ActiveScript = DynamoCurrent.RevitDynamoModel.CurrentWorkspace
22 DynamoVersion = DynamoCurrent.RevitDynamoModel.Version
23
24 # ensure version 2.X, get name
25 if DynamoVersion.StartsWith("2."):
26     ScriptName = ActiveScript.Name + ".dyn"
27 else:
28     ScriptName = "Version not supported"
29
30 # get system user name
31 UserName = Environment.UserName
32
33 # get active document name and path
```

Let's get into  
the example!

## Rooms to Areas

### *3 part API based workflow*

1. Room boundaries
- 2. Area lines from bounds**
3. Areas from rooms

# Area Boundaries

We need to use  
*NewAreaBoundaryLine* method for  
*Revit.Creation* namespace

NewAreaBoundaryLine Method

[Document Class](#) | [See Also](#)

Creates a new boundary line as an Area border.

Syntax

C#

```
public ModelCurve NewAreaBoundaryLine(  
    SketchPlane sketchPlane,  
    Curve geometryCurve,  
    ViewPlan areaView  
)
```



# Sketch Planes

We need to use  
*SketchPlane.Create* method from  
*SketchPlane* namespace

Create Method (Document, ElementId)

---

[SketchPlane Class](#) | [See Also](#)

Creates a sketch plane from a grid, reference plane, or level.

Syntax

C#

```
public static SketchPlane Create(  
    Document document,  
    ElementId datumId  
)
```





# Level ID

We need to obtain the *.Id* property from the *Elements* namespace

## Id Property

---

[Element Class](#)

[Example](#)

[See Also](#)

A unique identifier for an Element in an Autodesk Revit project.

## Syntax

**C#**

```
public ElementId Id { get; }
```

# Future Videos

Basic  
samples

Revit API

Advanced  
samples

And  
more!



Crumple is on  
github

<https://github.com/aussieBIMguru>



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