Step by Step Guide for Chair Numbering
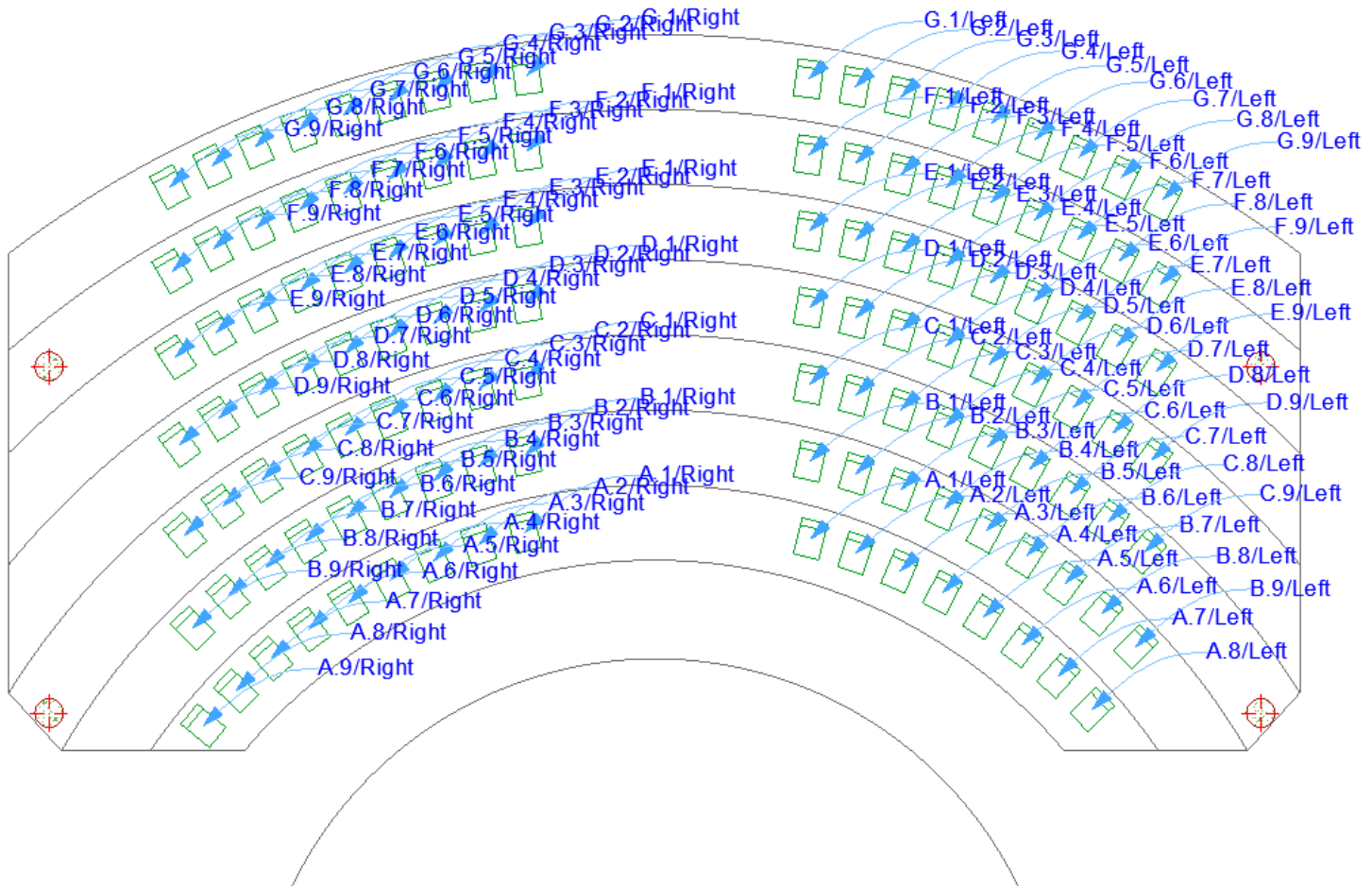
Short Description

Generates unique ordered numbers for the element IDs of all elements classified as "Chair" in the ARCHICAD Classification System. The result is shown here:

The chairs of the example auditorium project after the script was executed

Files to Download

Python Script

https://graphisoftse-my.sharepoint.com/:u:/g/personal/tlorantfy_graphisoft_com/EYkWQqztEfFDuGiAHn40Y5kB92VNwOL5HLNZRbRJNHaRTg?e=b55hfG

Example ARCHICAD Project

https://graphisoftse-my.sharepoint.com/:u:/g/personal/tlorantfy_graphisoft_com/EbxAUXcDdO1FvNE_fDhFU94BaVqgvrVzCVVuFdfQ0yPPpw?e=Kxfs9q

Step by Step Tryout Guide

1. Download the Python script.
2. Download the example project file and open it in ARCHICAD.
3. Run the Python script (from Python Palette or in any external application).

4. The element IDs of the chairs will be automatically set.
    The labels in the example project display the value of element ID on the floor plan view.

Demo Video

https://ttprivatenew.s3.amazonaws.com/pulse/tlorantfy-graphisoft/attachments/13795740/chair_numbering_demo.mp4

Details

Requirements

To execute the script successfully without any customization, the following requirements must be met. See the Customization section to change or eliminate these requirements.

- A classification system named ARCHICAD Classification
- A classification named Chair in the ARCHICAD Classification System
- ARCHICAD 24.2310 or above
- ARCHICAD-Python Connection (from the Archicad package) version 24.2310 or above

Element ID is a built-in property, which means that all elements in all projects have this information.

Customization

Feel free to open the script in any text editor and customize it. Each example script has a well-separated section, named "CONFIGURATION". Change the values in that section for customization.

```python
############################## CONFIGURATION ##############################
propertyId = acu.GetBuiltInPropertyId('General_ElementID')
classificationItem = acu.FindClassificationItemInSystem(
    'ARCHICAD Classification', 'Chair')
elements = acc.GetElementsByClassification(
    classificationItem.classificationItemId)


ROW_GROUPING_LIMIT = 0.25


def GeneratePropertyValueString(rowIndex: int, indexInRow: int, isRight: bool) -> str:
    return f'{string.ascii_uppercase[rowIndex]}.{indexInRow}/{"Right" if isRight else "Left"}'

##########################################################################
```

By default, this script sets the element IDs of all project elements classified as Chair in ARCHICAD Classification System. To set IDs for elements by type (instead of Classification), change GetElementsByClassification to GetAllElements or GetElementsByType:

```python
elements = acc.GetElementsByType("Object")
```

This table explains the meaning of each variable and values in the configuration section to help customization.

Name of the variable	Description	Default value
propertyId	The identifier of the property to be modified.	By default, the script modifies the element ID property of the elements. Its identifier is General_ElementID.

`classificationItem`	The classification to query the elements.	Chair classification in ARCHICAD Classification System.
`elements`	The elements to be modified.	Elements with the given classification.
`ROW_GROUPING_LIMIT`	The maximum difference between the Z coordinates of the chairs in the same row. The implemented numbering logic needs to detect rows.	0.25 meter
`GeneratePropertyValueString`	This function generates the string property value from the parameters of the chair.	`C.8/Left`

Possible Errors

If the script fails to execute and returns an error, please make sure the script's requirements have been met.

The following are possible errors and how to resolve them.

StopIteration, return next(system.classificationSystemId for system in …

The required classification system is not defined in the user's project file. It is possible that the user has modified the project's classification systems. Double check to see if the name of the classification system defined in the project matches that in the script configuration.

AttributeError: 'NoneType' object has no attribute 'classificationItemId'

Same error as above, but here, the required classification itself is not defined in the given classification system of the project file. It is possible that the user has modified the classifications. Double check to see if the name of the classification defined in the project matches that in the script configuration.