

Architectural Design Academy: Hour of Code

Instructions: Visit walkerarch.weebly.com/hour-of-code and follow the steps. Use this sheet for reference.

Sample code:

`def draw_stairs`

def – Defines the new command, in this case the command is draw_stairs.

Create some variables.

`stairs = 12
rise = 8
run = 11
width = 60
thickness = 2`

In this example variables are pre-set. Another common way is to use user input. i.e. Name:

Get handles to our model and the Entities collection it contains.

`model = Sketchup.active_model
entities = model.entities`

This begins a loop function. It sets the start point “step” to 1 and runs until it matches the number set in the variables section. In this example it will run till it hits 12. (This will repeat all of the code until the 1st “end”)

*# Loop across the same code several times
for step in 1..stairs*

Calculate our stair corners.

`x1 = 0
x2 = width
y1 = run * step
y2 = run * (step + 1)
z = rise * step`

This creates more variables. (x1, x2, y1, y2, and z)
Please note the math.

Create a series of "points", each a 3-item array containing x, y, and z.

`pt1 = [x1, y1, z]
pt2 = [x2, y1, z]
pt3 = [x2, y2, z]
pt4 = [x1, y2, z]`

Call methods on the Entities collection to draw stuff.

`new_face = entities.add_face pt1, pt2, pt3, pt4
new_face.pushpull thickness
end`

`end`

Make it better

Add an input box: (replace the variables with the code below)

```
inputs = UI.inputbox(["Stairs", "Rise", "Run", "Width", "Thickness"], [0.inch, 0.inch, 0.inch, 0.inch, 0.inch], "Make some stairs")
stairs = inputs[0].to_f
rise = inputs[1].to_f
run = inputs[2].to_f
width = inputs[3].to_f
thickness = inputs[4].to_f
```

Questions:

1. What is a variable?
2. What does an input box do?
3. List of all of the variables in the sample code on the front of this sheet.
4. Explain how you could use code in the future.
5. Using the code from the top of this page, `stairs = inputs[0].to_f` what does *the .to_f* mean?