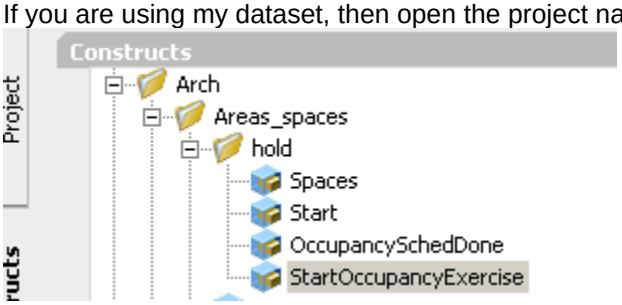
Creating an Occupancy table

Per the student's requests in the AU Finding your Way around Architectural Desktop Areas class, this document is provided to illustrate how to create the occupancy schedule table along with the style based property set definitions you need to create the schedule table style.
For a dataset you can use either my AU dataset, or any drawing with a couple areas it in that are different styles. – You will be using the styles to assign the occupant/SF variable, so make the area styles names make sense with the occupancy table.
Just one last note:
I am using Autodesk Building Systems to create these datasets. I have been as careful as I can be about not populating these drawings with anything from ABS. I have hacked the registry so these modules do not load. However, I cannot test to see if there is anything in them. If you get a proxy message about ABS not loaded on your machine, be careful with the drawings, and don't copy parts from these drawings into your working drawings. I hope this will not be the case, if it is, let me know and I will need to recreate these from scratch. This is not a major disaster, it is just a display representation that ADT does not understand. There are no Objects from ABS in these drawings.

If you are using my dataset, then open the project navigator



Start in the StartOccupanceExercise Drawing. The OccupancySchedDone has the end result of the exercise in it.

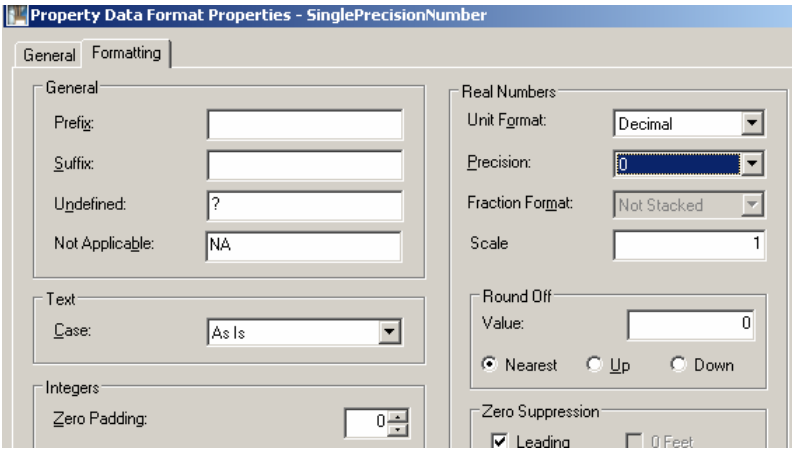
Schedule Table				
Name	Project Level ID	Base Area	Occ. Fact.	Occupants
Tenant Space	1	3248.07 SF	100	32
Tenant Space	1	15568.02 SF	100	156
Corridor	1	1976.88 SF	300	7
Restroom	1	884.74 SF	300	3

There are four main steps to creating this schedule table.
Create the Property Set Definitions
Create the schedule table style
Apply the property sets (Add the schedule data)
Add the table to the drawing.

Create the Property Set Definitions and Data Formats

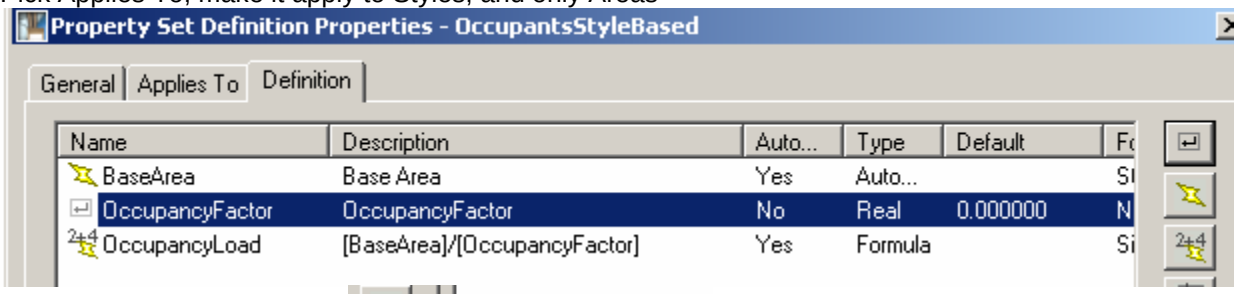
There are 5 columns in the schedule table, so we will need to make or find 5 property sets to create the schedule. I have inserted the Area & Area Group Styles - BOMA (Imperial).dwg from the styles folder in the content directory … enu\Styles\Imperial so I already have some property set definitions to work with that apply to areas and area groups. The others I will create here.

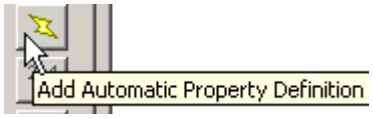
Open the StartOccupancyExercise.dwg from the project navigator.
Format>Style manager>Documentation Objects>Property Data Formats
Create new, rename to SinglePrecisionNumber set values as below



You may want precision to 0.0 – but I am putting it to 0 to show what I skipped in class. Normally for my building department I would show 1 decimal point.

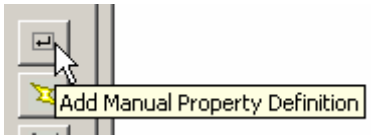
OK back to style manager.
Move down to the next category, Property Set Definitions
Create new, rename to OccupantsStyleBased
Pick Applies To, make it apply to Styles, and only Areas



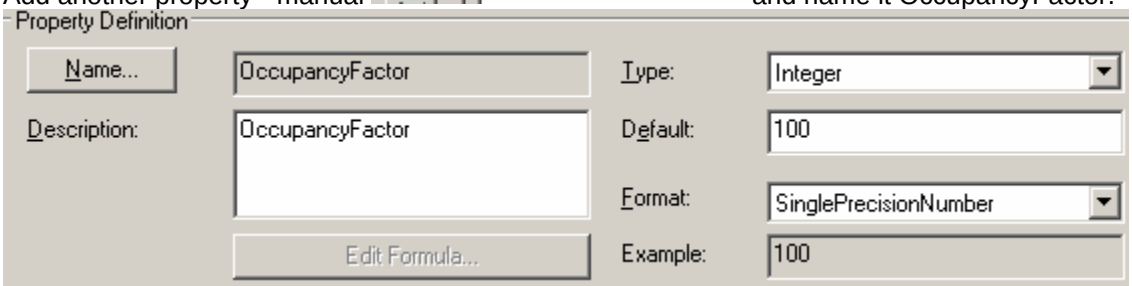
Create new property with the 

button, Set source to the BaseArea. Use the default name BaseArea. – let the format of this stay at standard so you can have a few decimal points to work with.

If you have inserted the BOMA drawing noted above, you will already have a BOMA_AreaStyles with this value, but it is formatted differently. I like to keep my PropertySetDefs and such separate for different uses, so I just create a new one here.

Add another property - manual 

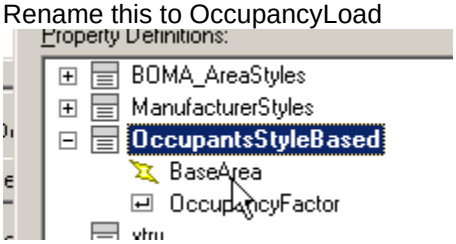
and name it OccupancyFactor.



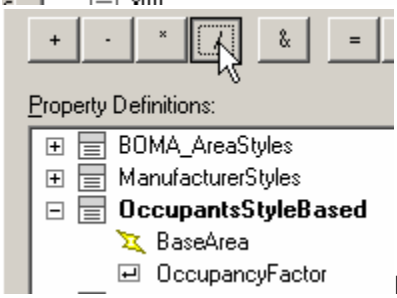
Set the Type to Integer and the format to SinglePrecisionNumber (could be Standard as the format is integer should keep the decimal points at bay) – set the default value to 100.

Add yet another Property using the formula based property definition 

Rename this to OccupancyLoad



pick OccupantsStyleBased>BaseArea



Pick the / symbol,

Pick OccupantsStyleBased>OccupancyFactor
Should look like this:

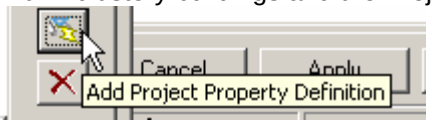
do not type these in, picking the property below and the / from the toolbar establish functions and relationships that are behind the scenes that you will not get from typing these values in.

> Also – a side note – I have found that if I need to modify a formula based property sometimes the formula stops working. If I recreate it from scratch, it will work. I think this has to do with some of the behind the scenes functions getting left in the property even after I have erased or replaced something in the formula, but cannot quite be sure, I have not tracked this down.

OK back to the property set definition properties (not style manager) and set this formula based properties format to SinglePrecisionNumber

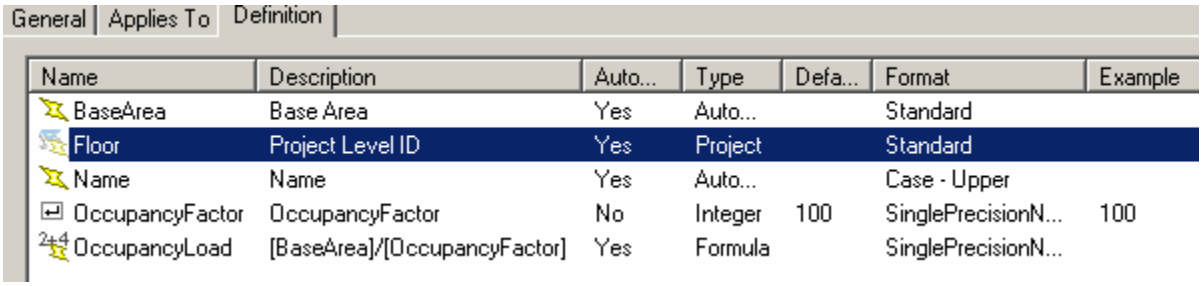
Add another Property (automatic) and select Name as the property source, set the format as Case Upper if you have it in your drawing otherwise leave it as standard. – I do this because the name might be different than the style. For example the style might be “OfficeSpace” and get the 100 SF/Occupant factor, but there may be Admin offices, Open Offices and other individual areas with different names of the same style, but will all have the same occupancy factor.

> – Note that you are pulling a property from an individual area, but are applying the property to the style based property set. This is OK, and I do this often, as well as working it the other way – you can pull some information from a style into an Object based property set if needed (for a “type” schedule for example).

If you are mostly working with multistory buildings and the Project Navigator, Add Another Property using the Project based button 

Select Level ID as the source.

So, backcheck, the Property Definition should look like this, more or less



OK,OK back to the drawing and save because you have done a bunch of work and don't want to lose it.

Create the Schedule Table Style

Format>Style Manager>Documentation Objects>Schedule Table Styles
New, and rename to Occupancy Table, RC>Edit
Applies To tab… Clear All, select only Area
Columns tab:
Pick Add column, select OccupantsStyleBased>Name (if you are using my dataset you have to scroll way down the list). Heading and Data Format are fine as is, OK back to table style properties

Add columns OccupantsStyleBased>… Floor and Base Area – just as they are, no change to heading or data format.

Add column OccupantsStyleBased>>OccupancyFactor, change heading to SF / Occupant (with spaces). Pick the Override Cell Format and put a value of 1.25 in the Fixed Width Column to force the header to word wrap.

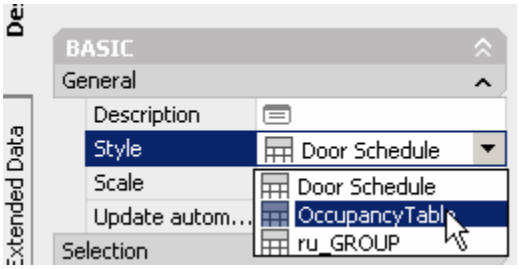
Add Column OccupantsStyleBased>[BaseArea]/[OccupancyFactor]. Change heading to Occupants and pick the Total check box below the override button.
Verify this format is set to SinglePrecisionNumber.

> You could have left the format for property [BaseArea]/[OccupancyFactor] as standard, and then overridden the property here in the schedule if you wanted. The important thing is to have all the values used in the formula based property as the same type of value so [BaseArea] will return a REAL number (decimal) and [OccupancyFactor] is set to Integer, so dividing these should not be a problem, but will return a REAL number which then you tell the property Occupant load to reformat as a SinglePrecision. You want to make sure that you don't take a value like Base Area out of the BOMA – NRA property set because it has a different property Format that includes a Character prefix and suffix and will present data to the formula that it will not understand.

While you are in the style manager drag the schedule table style onto a toolbar – this will only be useful for this drawing, but creating tools is a completely different lesson.
OK back to the drawing and Save

Add the schedule table

Change to the model tab layout (so you have the Medium display configuration and can see the schedule)
If you did not make a tool, Hit the door schedule tool, then move over to the properties and use the drop down to select the schedule table style you just made.

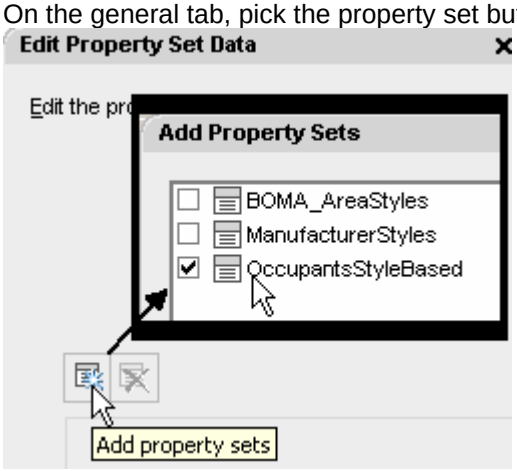


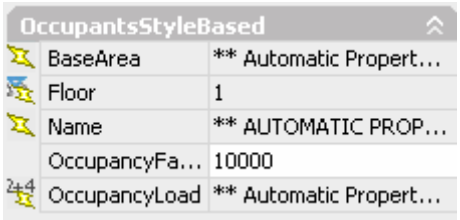
Type ALL at the select objects prompt, place the schedule table
Everything is ? because the Property Set Definition has not been applied to any of the Area Styles in the drawing

Apply Property sets to all Area Styles

You can do this from the drawing by right clicking on each space and choose Edit Style off the pop up menu, but I will do this in style manager because it is faster.

In style manager, expand documentation objects and Area Styles.
Pick the Vertical Area Style, RC>edit
On the general tab, pick the property set button and then the add button





pick the Occupants Style Based and then change the OccupancyFactor to 10000. I do this to make this essentially an Accessory space that will return a 0 for occupants and does not get included in the Occupancy calculation. – repeat this for the Corridor and OfficeCommon Area Styles - Bathrooms and other non-occupied.

> OK, this dataset was set up for the BOMA calcs and not necessarily with the styles I would use to do this, but you get the picture.

Repeat for the OfficeArea style giving it a 100 Occupancy Factor
Repeat for BuildingCommon, giving it a 300 Occupancy Factor
OK back to the drawing, select the schedule table RC>update – id should now look something like…the image on the next page.

Schedule Table				
Name	Project Level ID	Base Area	SF / Occupant	Occupants
TENANT SPACE	1	2546.99	100	25
TENANT SPACE	1	15568.015	100	156
TENANT SPACE	1	3248.074	100	32
RESTROOM	1	884.743	10000	0
COPY ROOM	1	199.948	300	1
MAIN LOBBY	1	2025.269	300	7
CHASE	1	109.511	10000	0
ELECTRICAL CLOSET	1	324.363	300	1
CORRIDOR	1	1976.882	10000	0
ELEVATOR	1	180.417	10000	0
STAIR	1	219.885	10000	0
STAIR	1	256.896	10000	0
STAIR	1	266.396	10000	0
				223