

Visio 2010 Tutorial

ISE 453

Design of PLS Systems

This tutorial is designed to teach you to use Visio to draw a facility layout. It was adapted for Visio by Derek Shields and for older Visio versions by Xiaoqing Yang and is based on an earlier FactoryCAD/AutoCAD tutorial developed by Tiffany Sargent.

Step 1: Getting Started:

After launching Visio, under file menu select

New → Template Categories → Maps and Floor Plans → Plant Layout

Right Click the page tab. Click Page Setup. Click on the Drawing Scale Tab on the pop-up. Then:

Drawing Scale → Custom Scale → 1" = 15'

To Draw the Facility's Outer Walls:

(Select "Walls, Shell and Structure" on the left, choose "Exterior wall")

Left click the wall and drag it onto the layout. When selecting walls, click on the wall itself and do not click the nearby dimension. The outer walls of the facility are **300' × 200'** (outside dimensions) with **10"** thickness. Right click the wall and choose "Properties" to specify the wall length and wall thickness.



Tip 1: Group & Ungroup

Using the "shift" key to select all the 4 sides of your walls, right click mouse and select "Group" (Group → Group) to combine these 4 objects as one. It makes it easier to manage your layout. You can always ungroup them when needed.

Draw the Office Walls

Draw the office walls according to the dimensions shown in Figure 1. The wall thickness for the inner wall is 8".

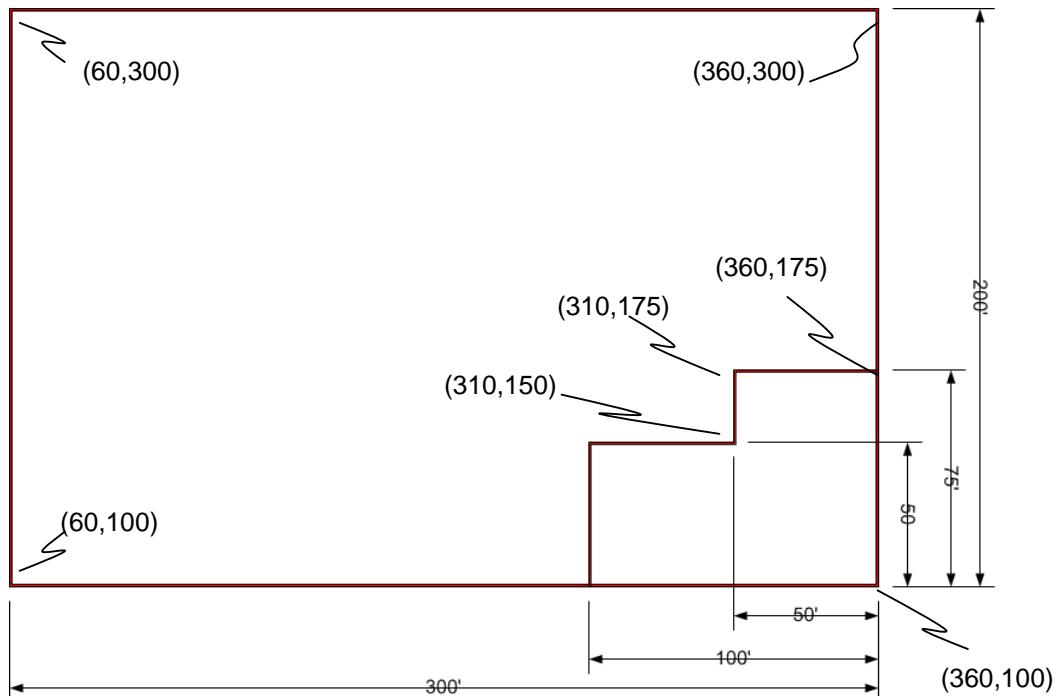


Figure 1: The facility walls with office.



Tip 2: Using "layers" to control shapes.

Layers enable you to assign shapes to same or different layers, and you can make any layer to be visible or invisible, in this way you can hide and show shapes according to the layer they're assigned to. To do this, just:

1. Create a new layer by clicking Layer -> Layer Properties from the Home Tab.
2. Select the shape(s) that you want to assign to a layer, click Layer -> Assign to Layer and select the layer(s) you want to assign to.
3. To make a layer visible or invisible, just click on "Layer->Layer Properties", check "Visible" for the layer(s) you want to show.

Note:

* A shape can be assigned to more than one layer.

Step 2: Add Office Door

(Walls, Shell and Structure → Door)

The width of the door is 4'. Remember the thickness of the wall is 8".

Offset the door by 1' of the office's top left interior corner as shown in Figure 2, by typing in the insertion location.

Add Office Window

(Walls, Shell and Structure → Window)

Now place a window centered on the top sidewall as shown in Figure 2, and the window width is 4'.

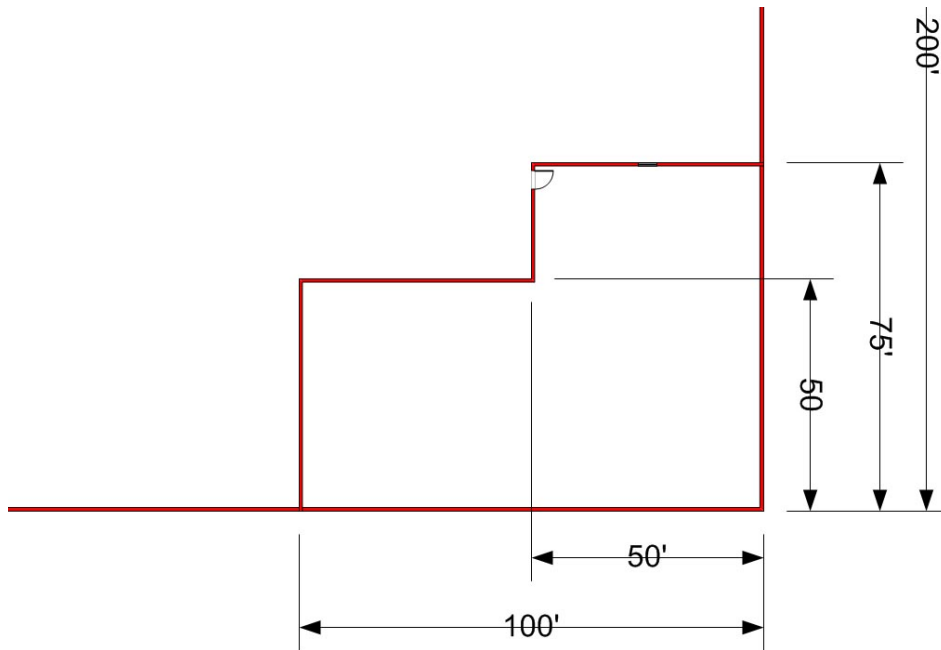


Figure 2: Office with door and window added.

Step 3: Shipping and Receiving Dock Doors

Insert the receiving and shipping dock doors (**Shapes (on the left side of the screen), Warehouse – Shipping and Receiving → Loading bay**) as shown in Figure 3. These doors do not stick to the walls. All the doors are 10' wide. The three receiving doors begin 20' from the bottom left corner of the facility and are 12' apart. The two shipping doors begin 40' to the left of the outer wall of the office and are also 12' apart.

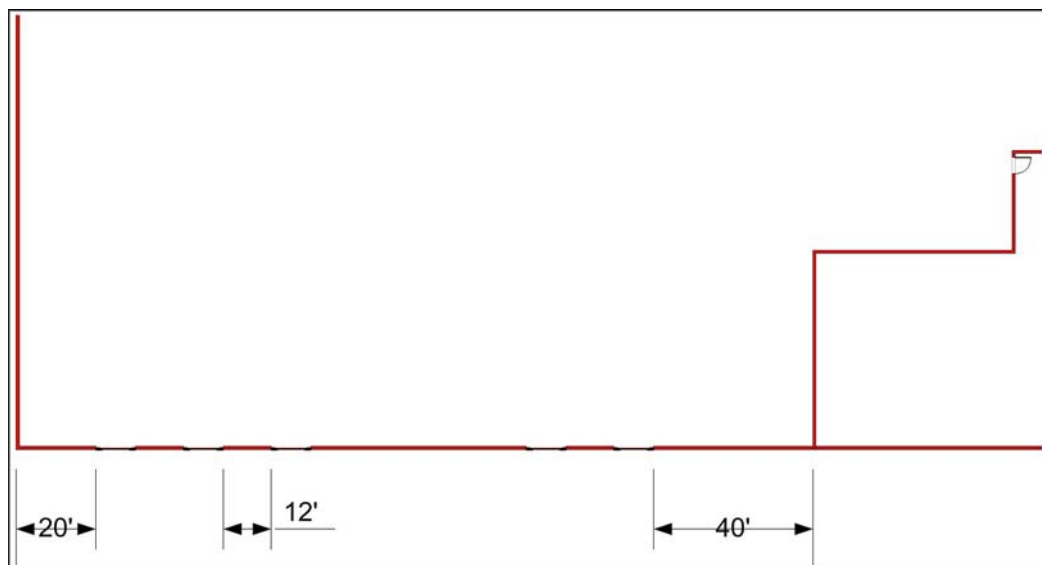


Figure 3: Receiving and Shipping Docks

Step 4: Conveyor Lines

(Shapes -> More Shapes -> Maps and Floor Plans -> Building Plans ->Shop Floor – Storage and Distribution (US Units) → Conveyor belt, Roller conveyor, Angled conveyor)

Choose and connect them to determine the path you want your conveyor to flow (be creative). Insure that the conveyor is placed at least **20'** from the shop wall and no more that 45' from the Receiving and Shipping Doors.

See Figure 4.

Adding Operators and Pallets. There are two people working at the end of the line unloading on to **4' x 4'** pallets. You can also load the built-in stencil for operators (search for “operator” in the shpaes search) and for pallets (**Shapes -> More Shapes -> Maps and Floor Plans -> Building Plans ->Shop Floor – Storage and Distribution (US Units) → Standard pallet**) at the end of the main conveyor line.

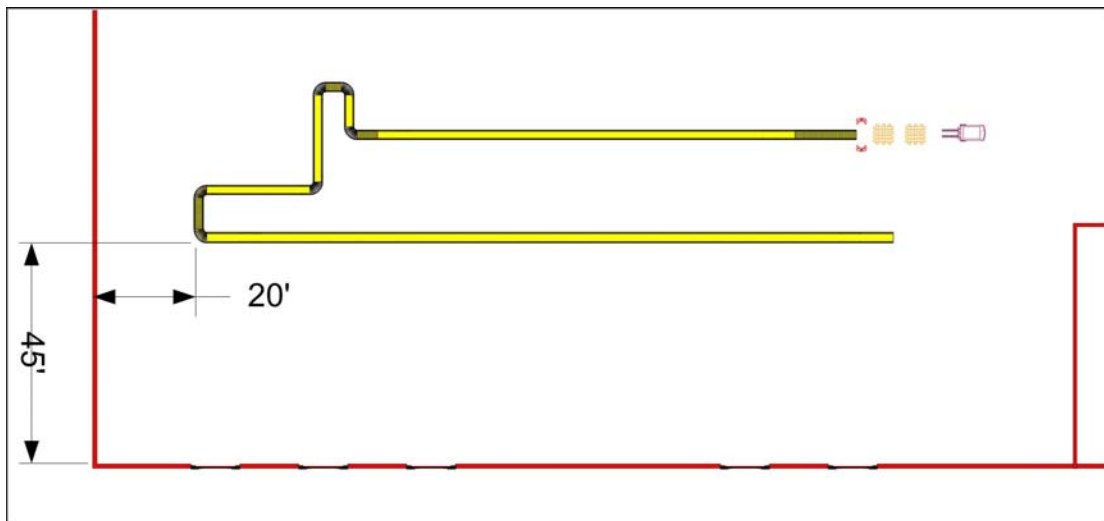
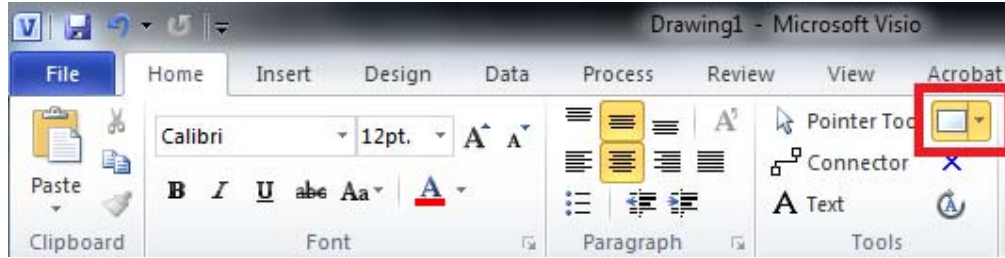


Figure 4: Receiving Conveyor Line with workers (belts may appear gray in Visio 2010).

Step5:InsertStorageRacks



Click on “Home” tool bar, and select the “Rectangle tool” icon from the list of tools in the top right of the Tools section. Draw the storage racks. The storage racks are at least 98' from the interior of the Receiving wall and 10' off the interior of the left wall. The bay depth is 8' – 10". The bay span is 8'.

Insert the first storage rack with a bay width of 1 and racks deep should be 10. Using shift to select multiple boxes, copy and paste will help. Group these 10 racks by first selecting them and then right clicking to choose “Group” → “Group”.

The bay width is 2 for the other three racks. Insert the second rack 12' from the first one, and each rack after that should be placed 14' apart as shown in Figure 5.

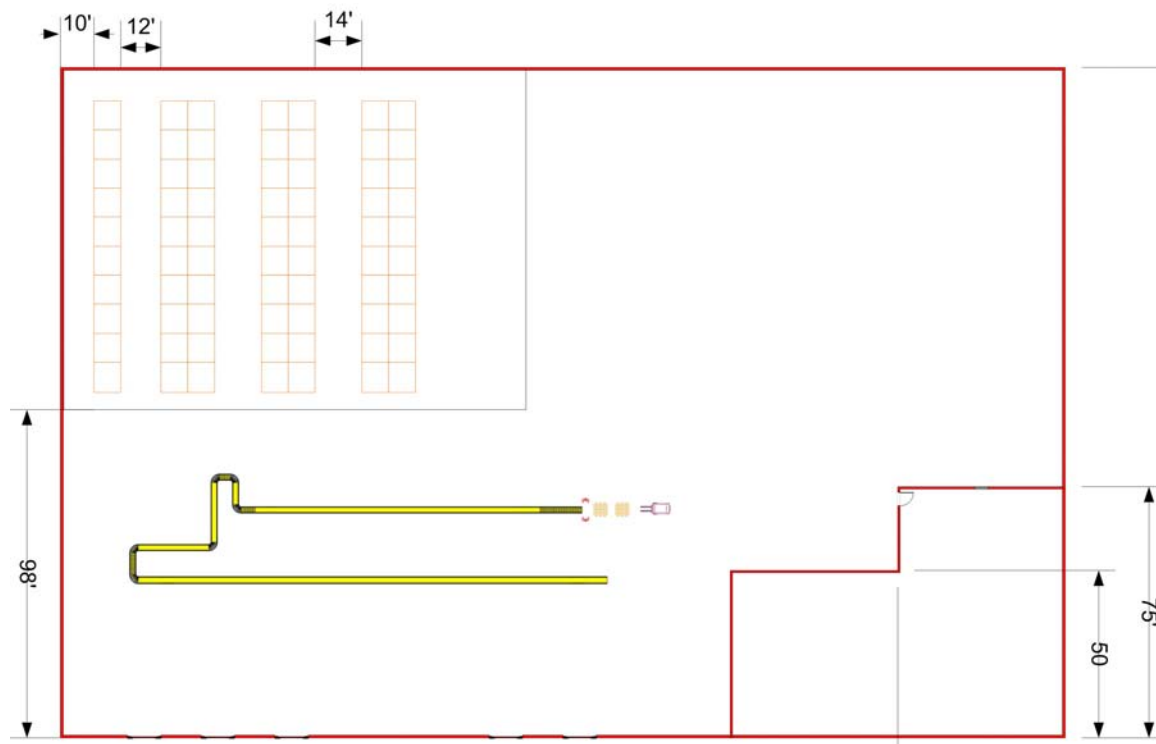


Figure 5: Storage Racks added.

Step 6: Add Machines to Layout

Insert 3–5 machines (**Shapes -> More Shapes -> Maps and Floor Plans -> Building Plans ->Shop Floor – Machines and Equipment (US Units)**). Use your imagination and come up with a set of machines to insert into your facility. See Figure 6.

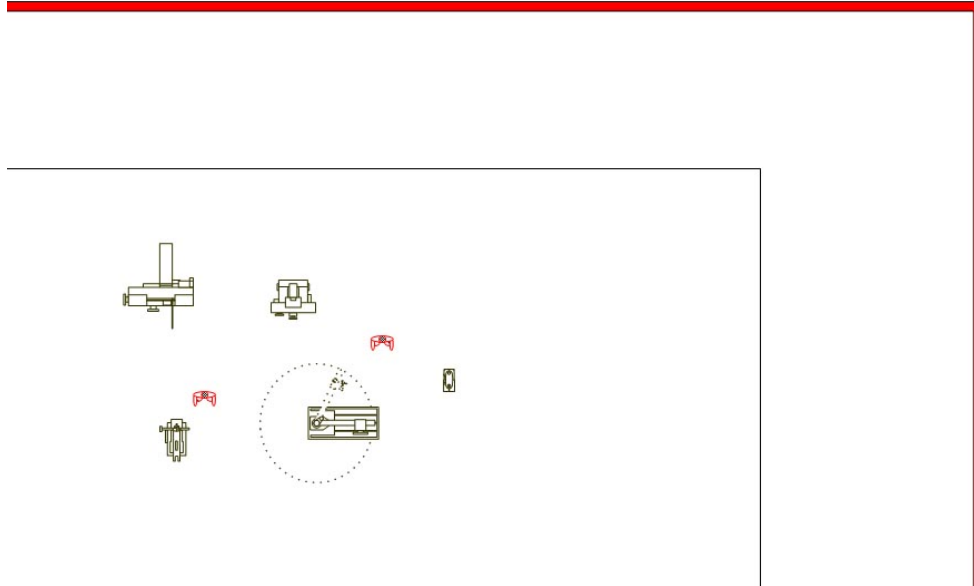


Figure 6: Machines added to Facility.

Step 7: Draw Borders and Label Areas

Draw the Area borders (polygon or rectangle), using the tools on the top right of the Tools area of the Home tab. Label the areas using “Text tool” in the Tools area.

Step 8: Add Operations and Equipment

Insert at least two operators and two pallet jacks or forklifts. Operators can be added as discussed in Step 4.

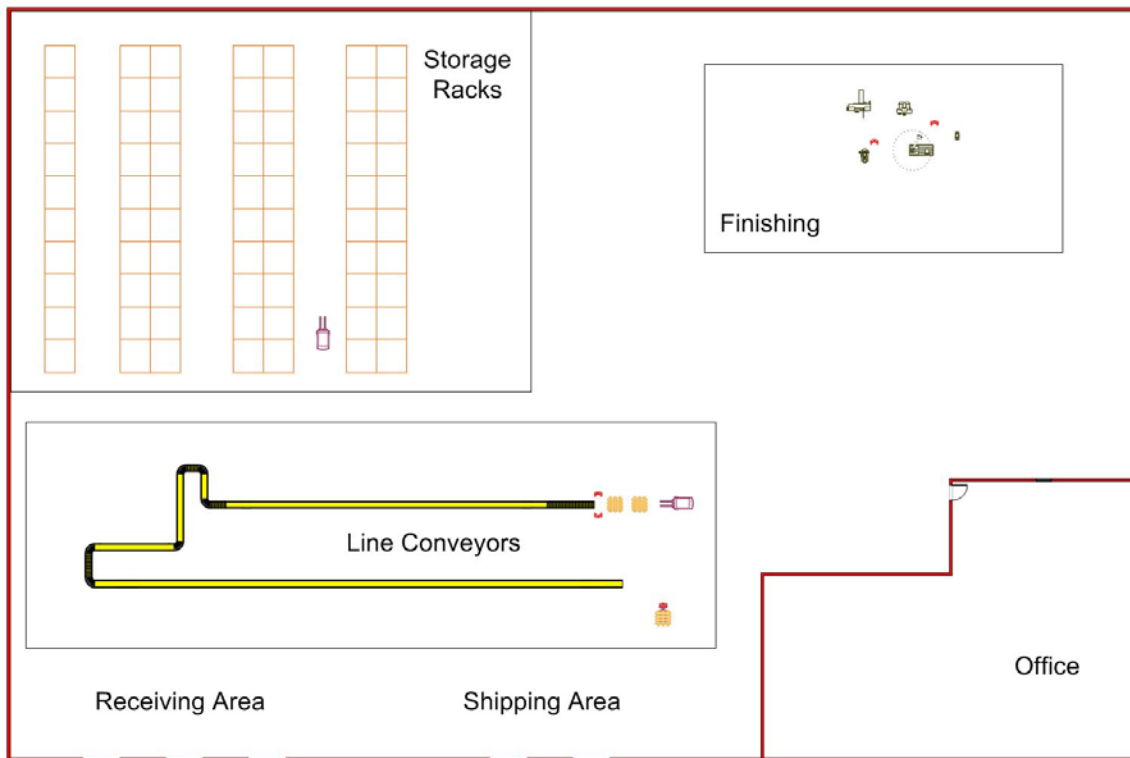


Figure 7: Area Borders, Labels, Operators, and Equipment added.

Step 9: Dimension the Layout

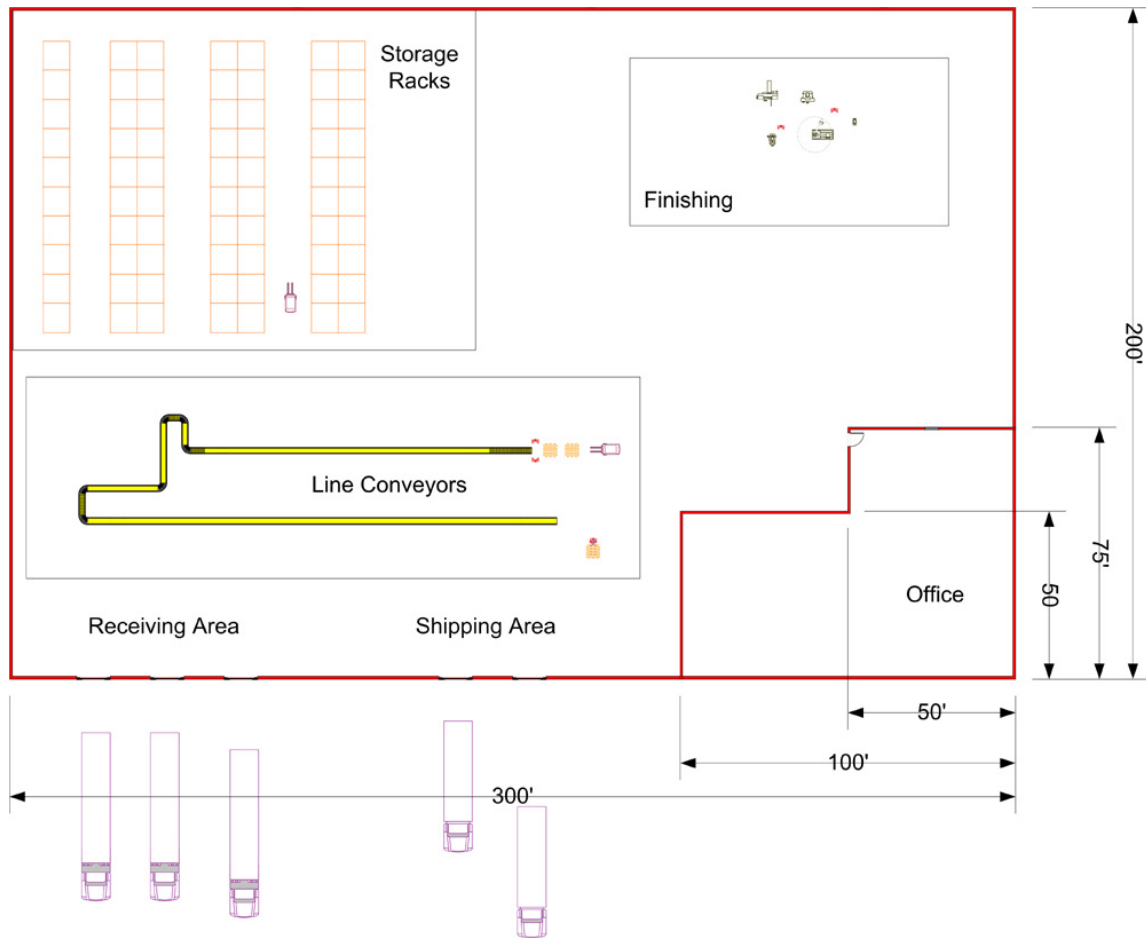


Figure 8: Layout with dimensions.

Step 10: Save your file.

Step 11: Printing your drawing

You can print your entire drawing directly in Visio. It is not possible to print or copy just a portion of your drawing in Visio. To print or copy a portion of your drawing you should first save it as a JPEG or bitmap file and then use an image editing program like Photoshop to select and print portions of your drawing. You can also drag individual items and groups, selected together, into other Microsoft programs, such as Word.