DEPARTMENT OF ELECTRICAL AND ELECTRONIC ENGINEERING
BANGLADESH UNIVERSITY OF ENGINEERING & TECHNOLOGY
EEE 414: Electrical Service Design

EXPERIMENT NO.2: DRAWING OF A SIMPLE FLOOR PLAN

OBJECTIVE:

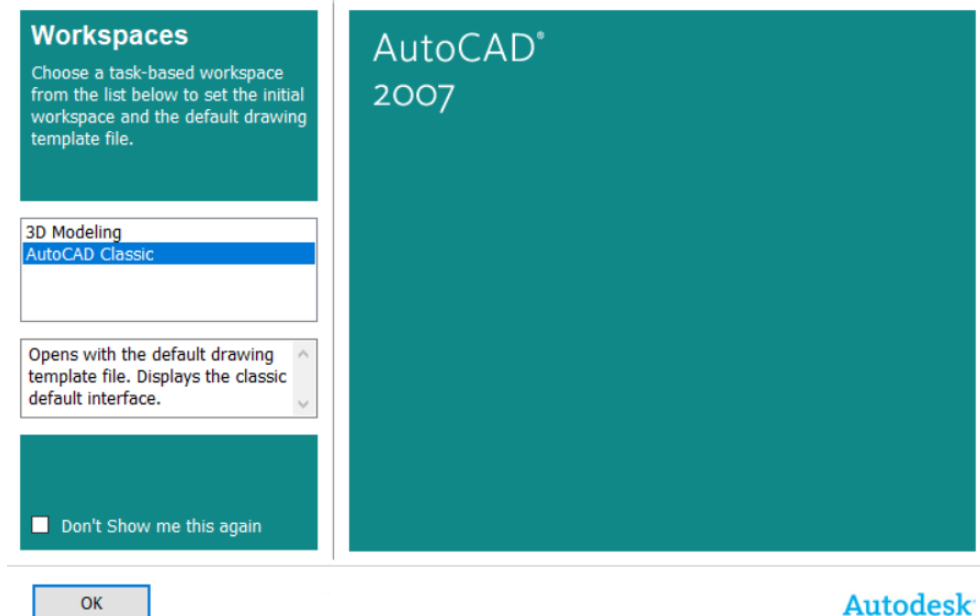To draw a simple floor plan using AutoCAD 2007

INTRODUCTION:

CAD tools can be used for a variety of purposes. In this laboratory, we will learn specifically the use of AutoCAD for designing electrical services. Before designing the electrical fixtures and layouts, we will learn how we can design a simple floor plan in AutoCAD. This will be a stepping stone for our next experiments.
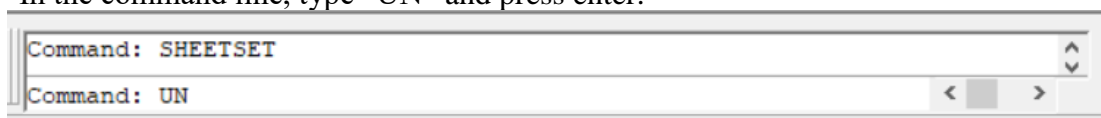
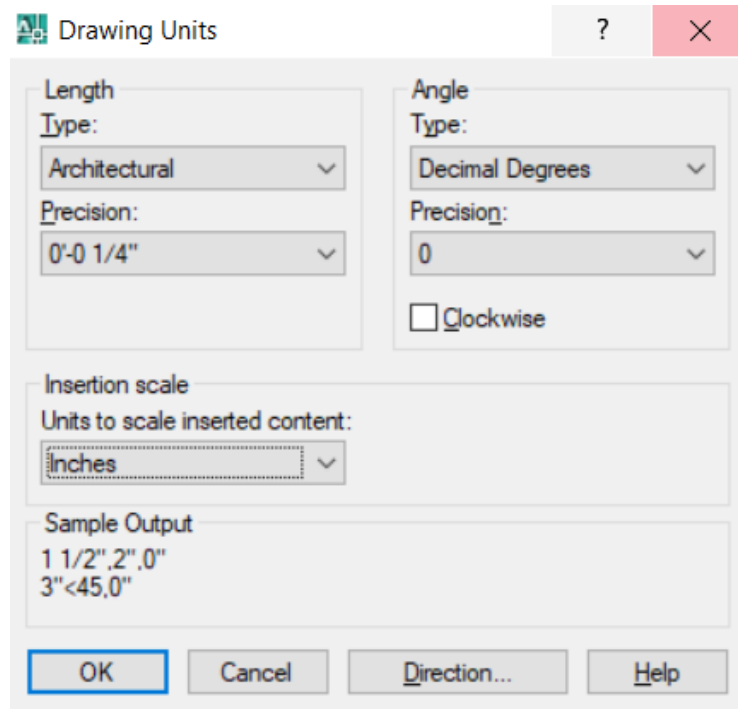PROCEDURE:

Creating the floor plan

1. Start AutoCAD 2007 and select "AutoCAD Classic" from the start menu and click "OK".
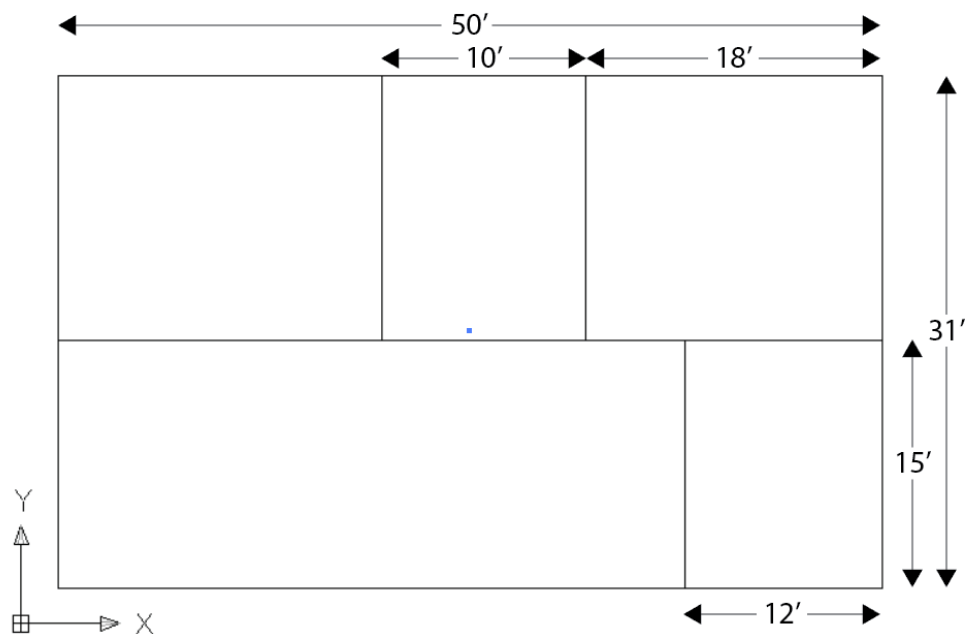

2. In the command line, type "UN" and press enter.

3. In the Drawing Units window, select Type as "Architectural", Precision as 0'-0 ¼", and Units to scale inserted content to "Inches". Click "OK".
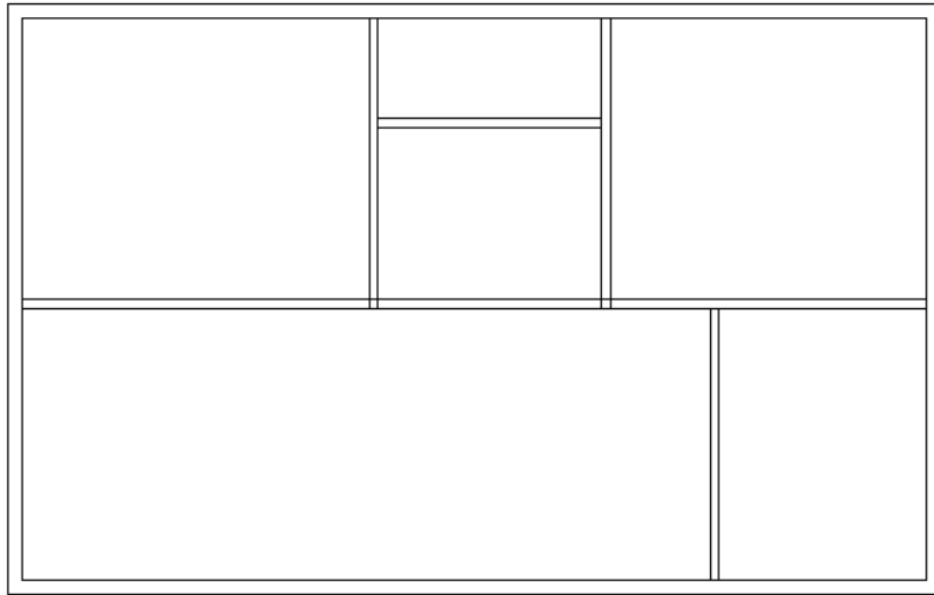

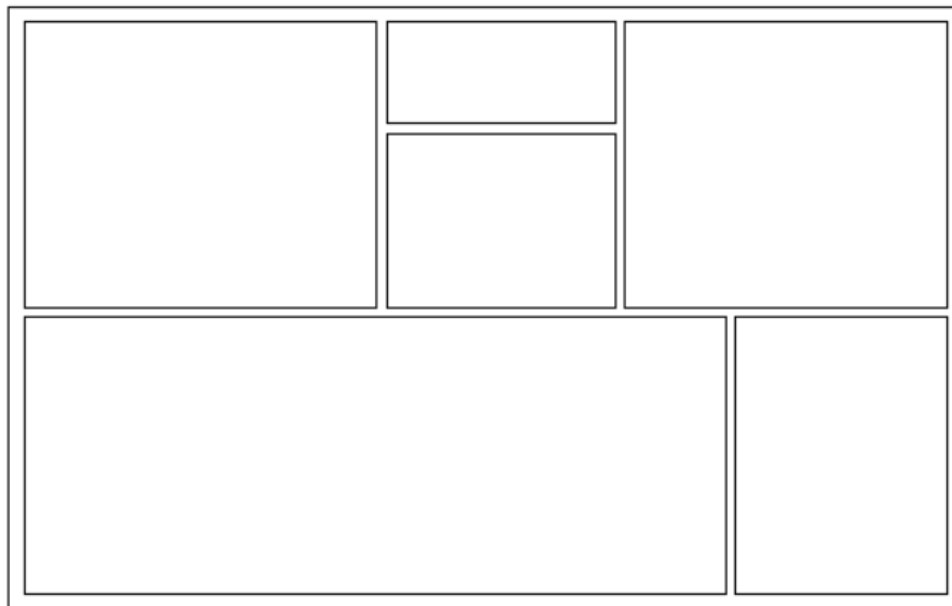4. Using the rectangle and line tool, draw the below structure.

Tip: If you are not able to see the full design, type "PLAN" in the command line and press enter. Type "W" for world view.

5. Using the offset tool, create the walls. The outer wall will have a thickness 10" and the inner walls will have a thickness of 6". Create an inner wall with offset 10' in the middle room.
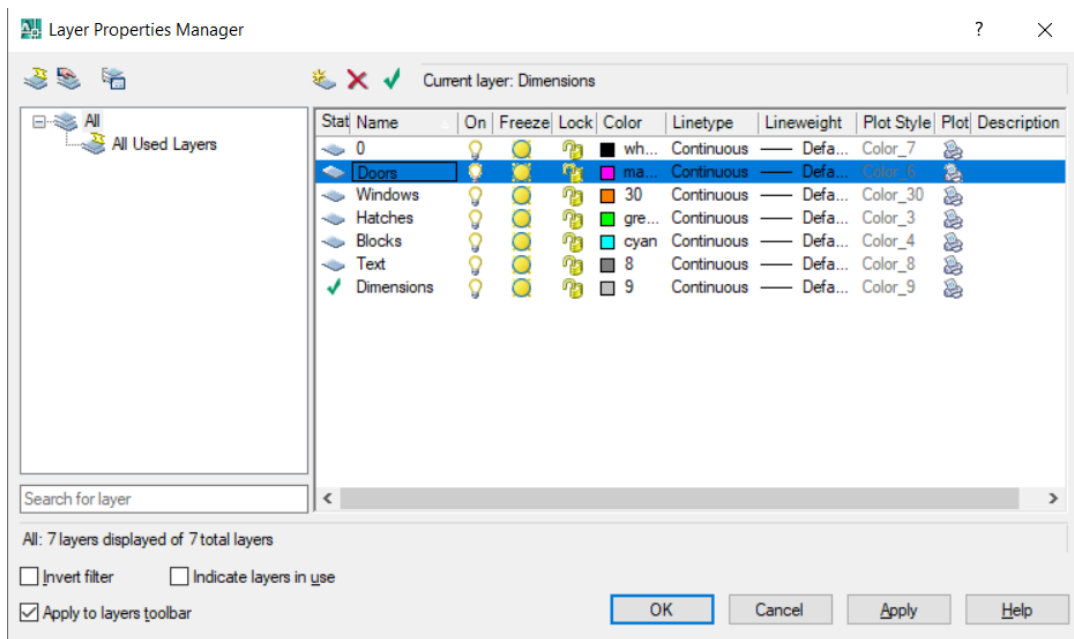
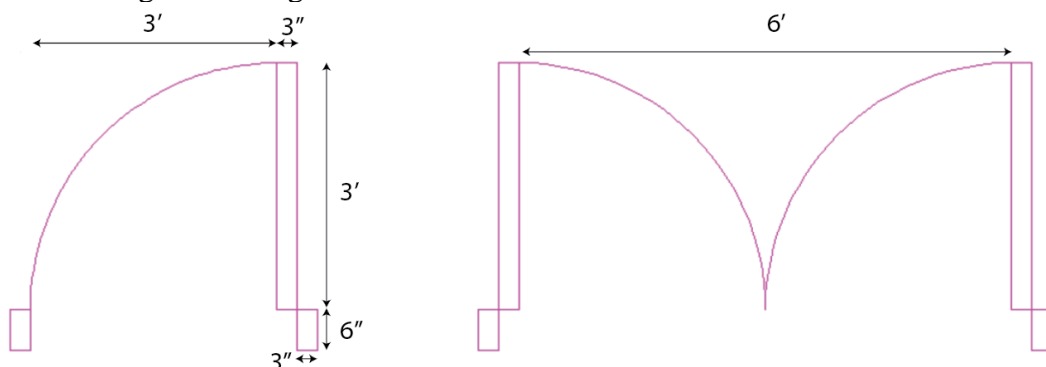6. Using the trim tool, delete the intersecting lines and clean up the design.

Creating Layer

1. Click the "Layer Properties Manager" icon and from the pop-up menu, click on the "New Layer" icon to create layers for "Doors", "Windows", "Hatches", "Blocks", "Text" and "Dimensions". Appropriately color code the layers by clicking on the color icon
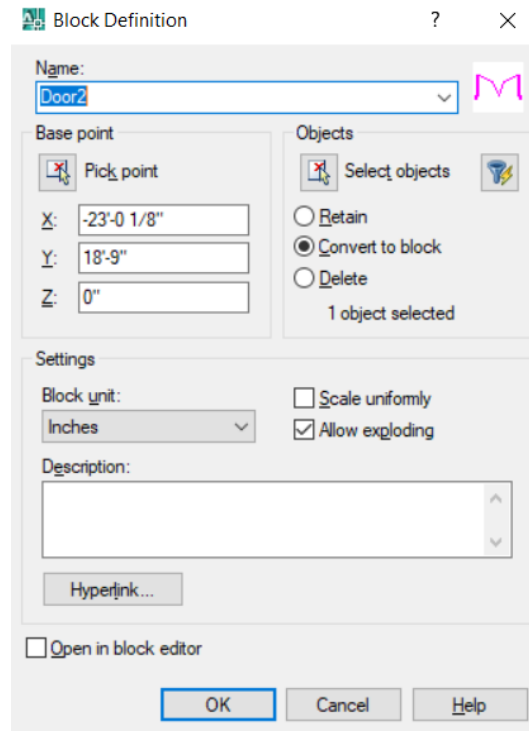
Making Blocks

1. From the layers drop down menu, select "Doors" as the layer and design the following two variants using the rectangle and arc tool.

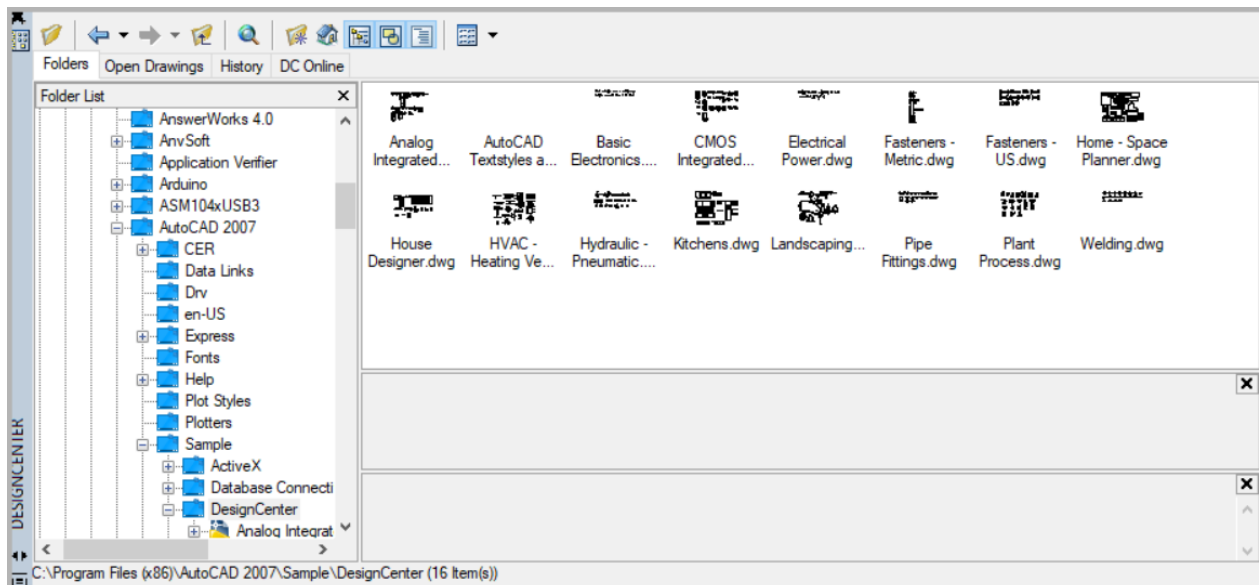2. Next, select the "Windows" layer and design the following using the line and offset tool.

3. Now, create blocks of the above elements. To create block, press "b", then enter. The block definition window will open. Insert a suitable name and using the "Pick Point" select a corner point of the element. Using "Select Objects" select the entire element. The Block Unit should be in "inches".

Note:
AutoCAD has many pre-defined blocks; you can see them by clicking on the "Design Center" icon on top ( ) or press CTRL+2.
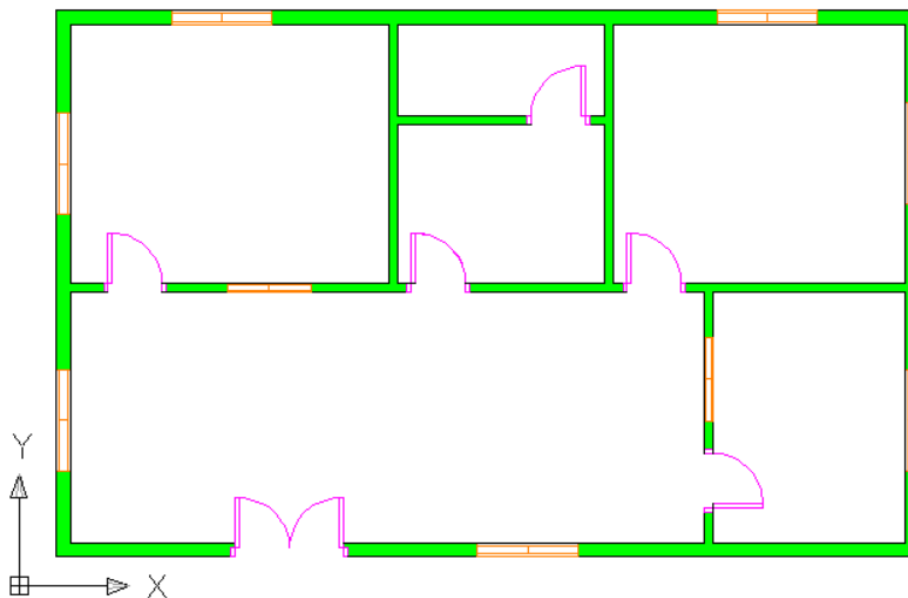
Adding blocks to the floor plan

1. Click Insert > Block.
2. Select the block you want to install and press OK.
3. Using the copy, rotate tool, place the blocks in appropriate positions.
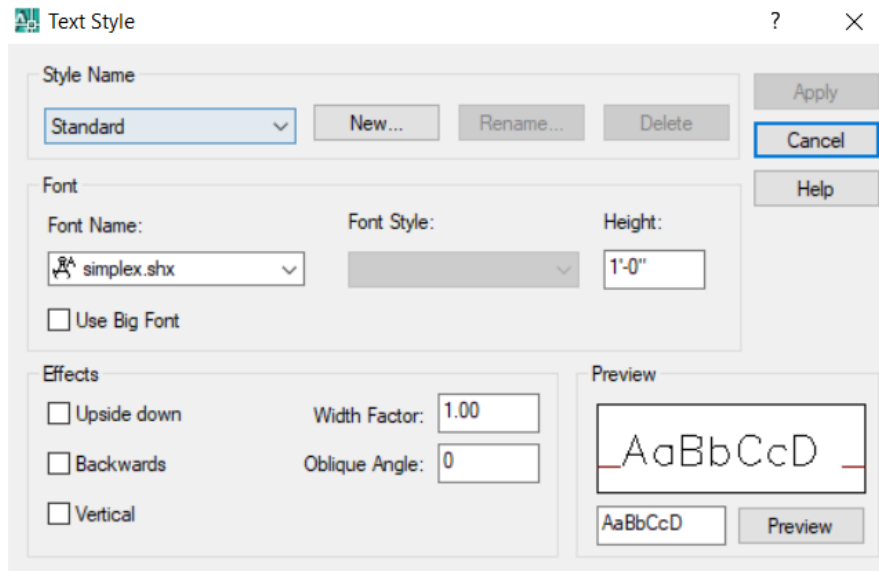4. Clean the unnecessary lines from the design using the TRIM tool.

Adding Hatches:

1. Select the "Hatches" layer
2. Select the Hatch Tool ( )
3. From the "Hatch and Gradient" menu, in the Boundary Section, select "Add: Pick Points".
4. Select all the walls and press enter.
5. Press OK.

<u>Adding Text:</u>

1. Click on the Text Style icon ( )
2. Change the font name to "simplex.shx", and Height to 1'-0".
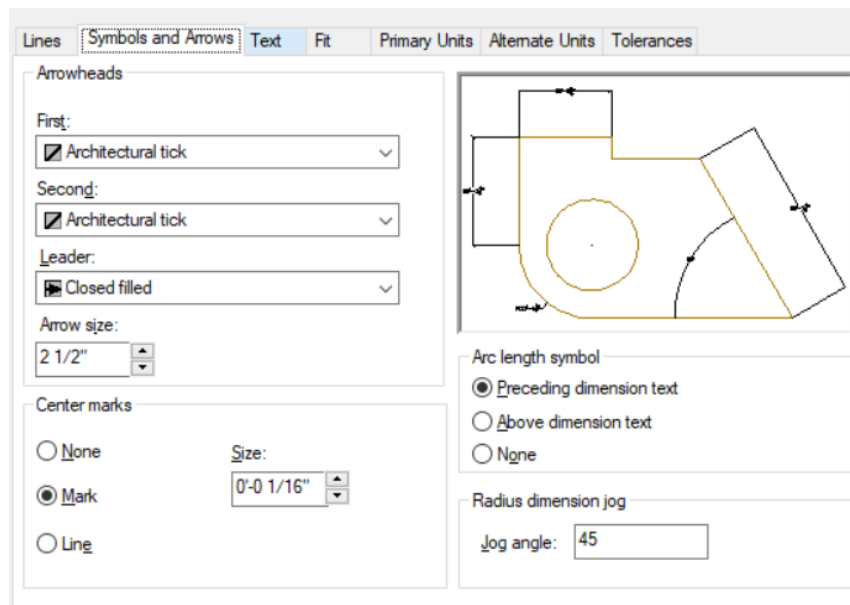3. Press Apply and Close.

4. Select the "Text" Layer.
5. Using the Multiline Text tool (A), simply drag and type the texts.
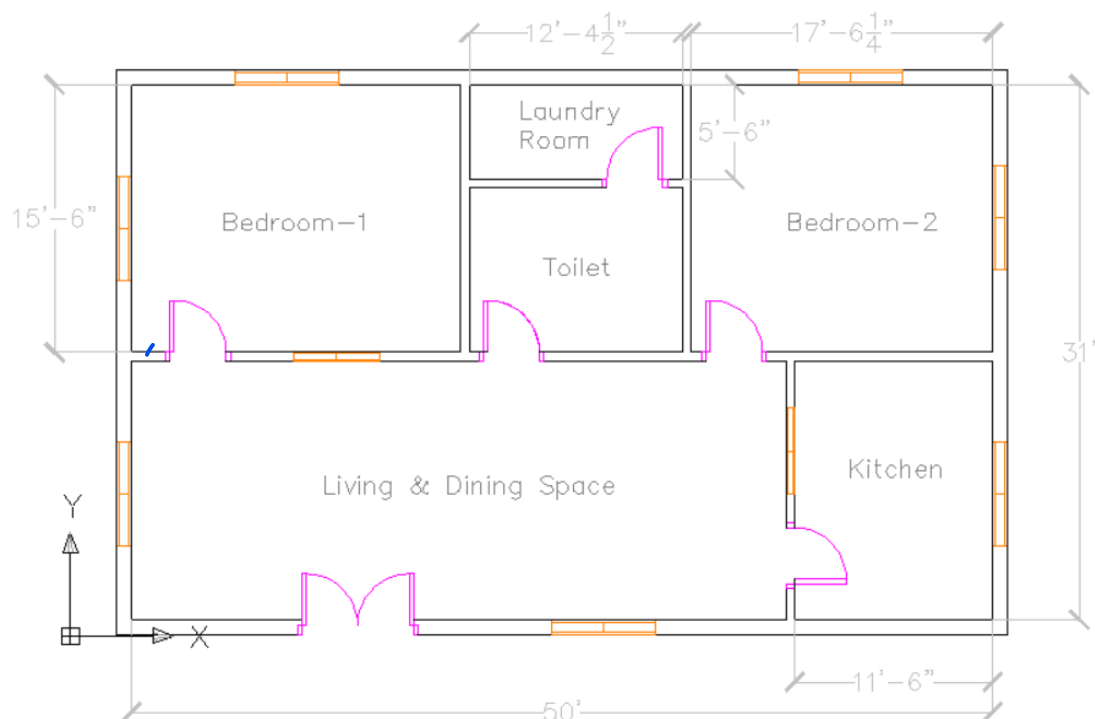

<u>Adding Dimensions</u>

1. Click on the Dimension Style () icon.
2. In the Dimension Style Manager, select "New"

3. Change New Style Name to "Dim", press "Continue".
4. In the New Dimension Style window, go to Symbol and Arrows tab, set the following.
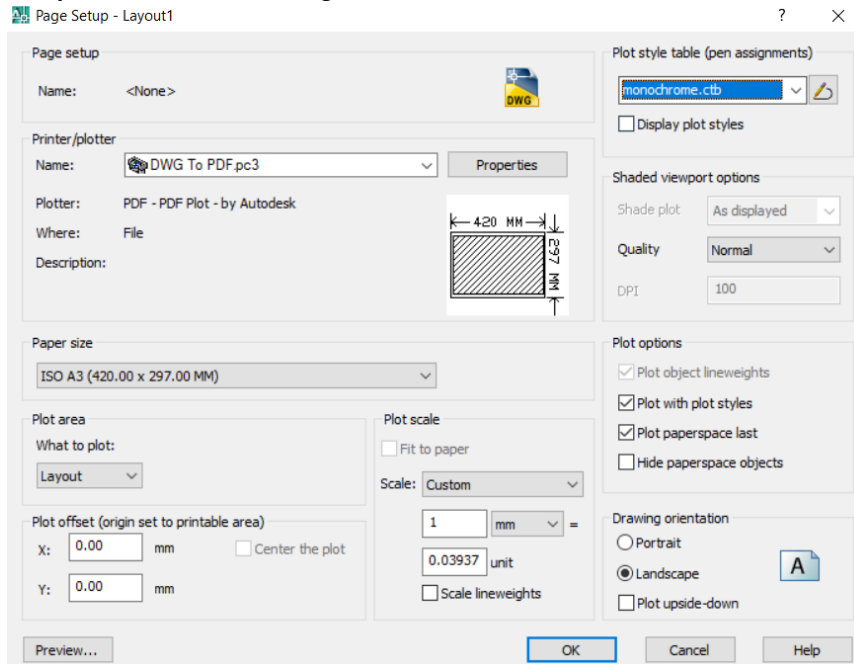

5. In the Fit tab, check "Use Overall scale of" to 5.00.
6. In the Primary Units tab, set the Unit format to "Architectural".
7. Press OK > Set Current > Close.
8. Go to the "Dimension" menu on top, select "Linear".
9. Click on the points of the rooms and simply drag to put the dimension.

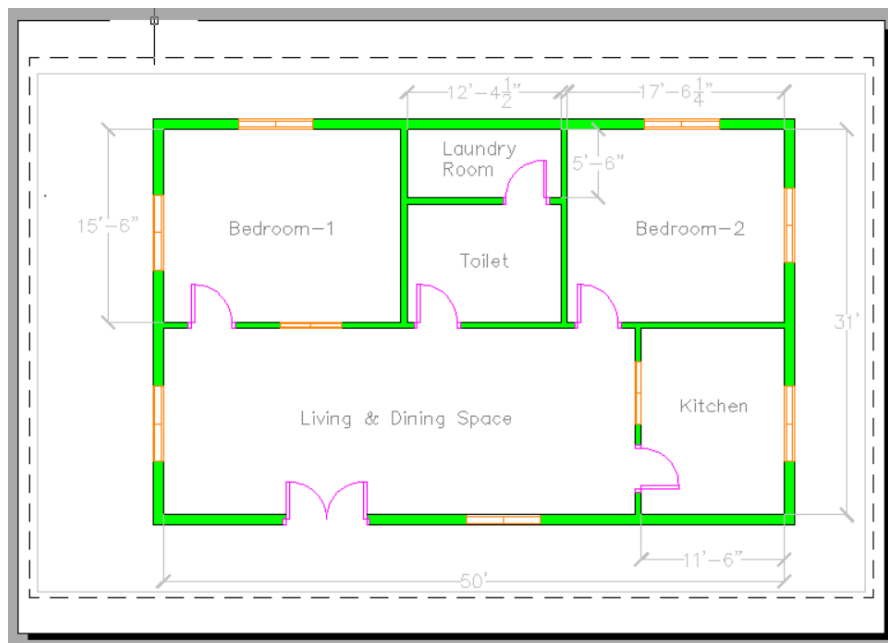After completion the drawing should look something like this:

Plotting

1. Go to "Layout 1" at the bottom of the screen.
2. Delete the existing design, we will manually add it later.
3. Right click on the "Layout 1" tab and select "Page Setup Manager"
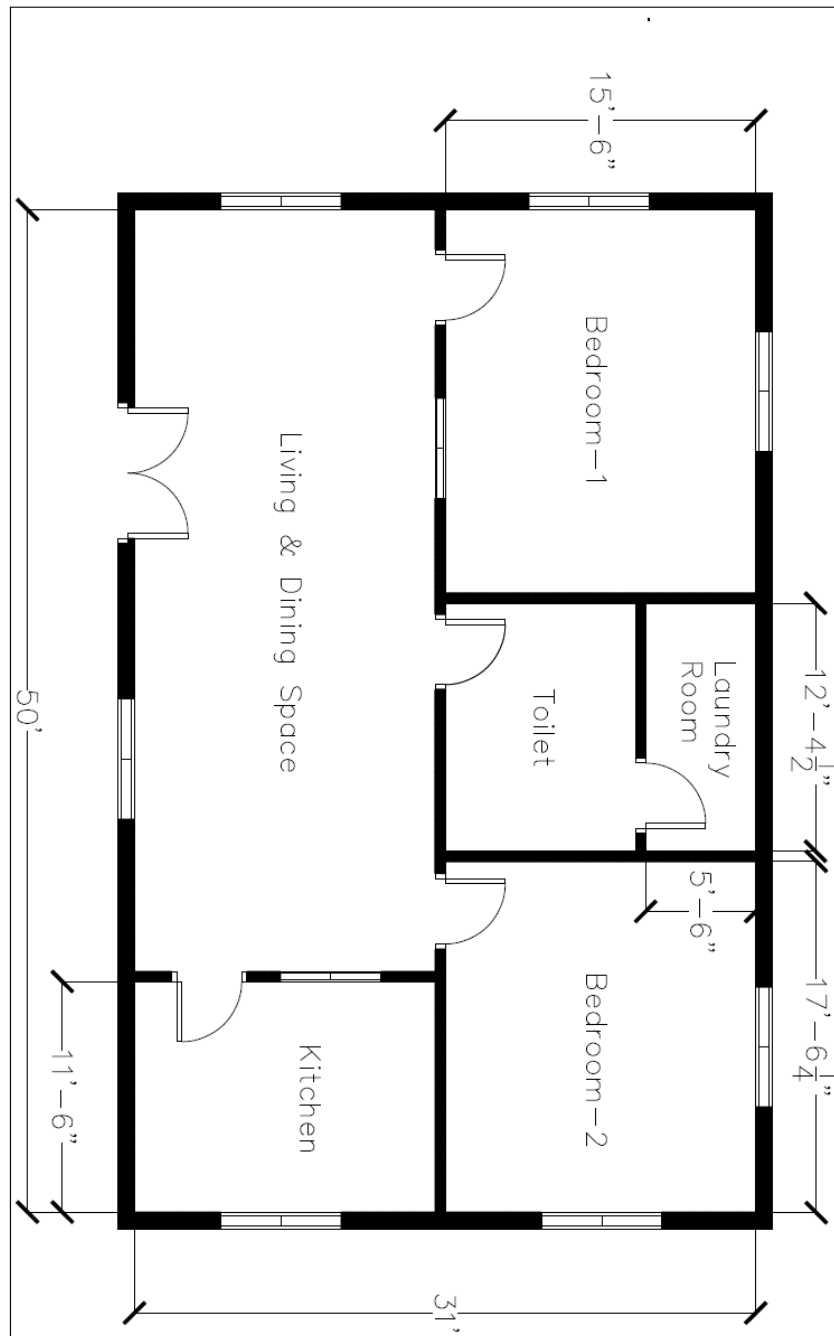4. Click Modify and set to following:

5. Click Apply > OK.
6. Go to View > Viewports > 1 Viewports
7. Drag the rectangle inside the dotted line in the page.

8. Click the Plot icon or press CTRL + P.
9. Press OK > Save.

The Output Pdf is shown:

Prepared by:

A.N.M. Nafiul Islam
Lecturer, EEE, BUET

Guided by:

Yeasir Arafat
Assoc. Professor, EEE, BUET

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