

1 Introduction

1.1 What is eCAD?



Figure 1: eCAD logo

eCAD is a fully comprehensive 2D CAD application that you can download and install for free. It is available for major operating systems which includes Microsoft Windows and Linux. It is available in more than 20 languages and for major operating systems which includes Microsoft Windows and Linux.

The app is great for industrial designers, but anyone who wants to learn how to make 2D CAD drawings will like this program. For a free software, eCAD gives you a lot of tools to work with. New users will be able to create basic drawings, while advanced users can make engineering plans with the software. You can start drawings from scratch. But it is also easy to put in ellipses, arcs, lines and circles. eCAD also has a powerful zoom tool that lets you look at models at different distances. This is essential for designers who are going to make life size copies of a drawing. eCAD also has grids which are extremely useful for those new to CAD. Once you have made the basic object, you can customize it in many ways. Scaling is particularly easy here. Also Dimensioning which is must in every CAD software is there. We can calculate the distance between two points and can get the size of the object. Here, its worth mentioning about snapping part. We can have snapping to grid, center etc. One if wants to work by writing a code can do so in scripting feature. You can download and install eCAD freely, with no fear of copyright infringement.

1.2 License

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Figure 2: GPLv3

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Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

2 Installation

To access the eCAD we need to follow few steps. There are also basic requirements which we need to have to run eCAD. As it works on both Windows and Ubuntu. So we have different process for both.

2.1 For Linux

1. Downloading

- Install Qt libraries using `sudo apt-get install qtdeclarative5-dev qt5-default`
- Download zip folder of eCAD or clone it from <https://github.com/GreatDevelopers/eCAD>

2. Installing

- `cd eCAD`
- `qmake`
- `make`
- `./eCAD`

2.2 For Windows

1. **Downloading:** Download zip folder of eCAD from <https://github.com/GreatDevelopers/eCAD>
2. **Installing:** Install Qt's latest version available with mingw compiler from Qt's official downloads. After installation launch Qt creator load eCAD.pro, from the build menu select Build All and Run.

3 Interface

3.1 Menubar

In eCAD we have menubar. In menubar it contains different menu items and sub menuitems. Each menuitem has its own specific requirement and advantage. Each menu item is described as below:



Figure 3: Menubar

1. **File Menu:** It contains following submenus.

- New: On clicking this menuitem we can create a new document. The shortcut key to is Ctrl+N
- Open: This is used to open a file which was already saved, so that we can edit that file as per user requiremenet. The shortcut key is Ctrl+O
- Save: On clicking this we get our file save in xml format. The shorcut to this is Ctrl+S
- Save As: When one wants to save the file with different name. He/She can do so with Save As functionality. The shorcut to it is Ctrl+Shift+S
- Import: Using this one can import the file from outside souce. One can import jpg and png images in eCAD
- Export: Also once file is made need to be exported. In eCAD one can export the file in the pdf, jpg and png format.
- Close: On clicking this the current document gets close.
- Print preview: Before printing user may want to view the file to print. This can be done by clicking on it or by pressing Ctrl+Shift+P
- Print: To print the file click on it or press Ctrl+P.
- Quit: To quit or close the software click on it or press Ctrl+Q

2. **Edit Menu:** It contains following submenus

- Cut: To cut the item click on this or press Ctrl+X
- Copy: To copy the item click on this or press Ctrl+C
- Paste: To paste the item click on this or press Ctrl+V
- Undo: To Undo click on it or press Ctrl+Z
- Redo: To Redo click on it or press Ctrl+Shift+Z

3. **View menu:** It contains following submenus

- Grid: On clicking this Grid appears and disappears
- Zoom In: On clicking this the view gets zoom in
- Zoom out: On clicking this the view gets zoom out
- Panning: One can move the screen using this feature

- **Status Bar:** This shows the current screen position and also what to do next after clicking on entities.
- **Tool Bar:** It further have submenus for toolbar, scripting widgets and console mode.

4. **Select:** It contains following submenus

- **Select all:** This will select all the entities
- **Deselect all:** This will deselect all entites
- **Select Window:** This will select full window
- **Select entity:** This will allow to select one entity
- **Deselect window:** This will deselect window
- **Invert Selection:** This will invert the selection.

5. **Draw:** It contains following submenus

- **Points:** It is used to add points.
- **Line:** It is used to draw Line
- **Circle:** It is used to draw Circle
- **Ellipse:** It is used to add the ellipse
- **Arc:** It is used to add the arc
- **Text:** It is used to add the text
- **Image:** It is used to add the image

6. **Modify :** It contains following submenus.

- **Delete selected:** It will delete the selected items.
- **Delete entity:** It will delete the single entity.

7. **Dimension:** It contains following submenus

- **Horizontal:** It will add the horizontal dimension.
- **Vertical:** It will add the vertical dimension.

8. **Snap:** It contains following submenus

- **Free:** It will be free snap.
- **Grid:** It will be for snap to grid.
- **Center:** It will be for snap to center
- **Middle Points:** It will be for snap to mid points
- **End points:** It will be for snap to end points

9. **Help:** It contains following submenus

- **Manual:** It will open the manual of the eCAD.
- **About:** It will about page of eCAD.

3.2 Toolbar



Figure 4: Toolbar

Toolbar contains the shortcut of the various items in menubar. Like new, open, save, close, undo, redo etc. There are two toolbar standard toolbar and main toolbar.

1. Main Toolbar



This creates a new Document.



This opens a document.



This saves a document.



This cuts the selected entity.



This copies the selected entity.



This paste the entity at the position.



This undo the previous action.



This redo the previous action.

2. Standard ToolBar



This will create points



This will create line



This will create circle



This will create ellipse



This will create arc



This will create a box to insert text



This will insert image

3.3 Working Space

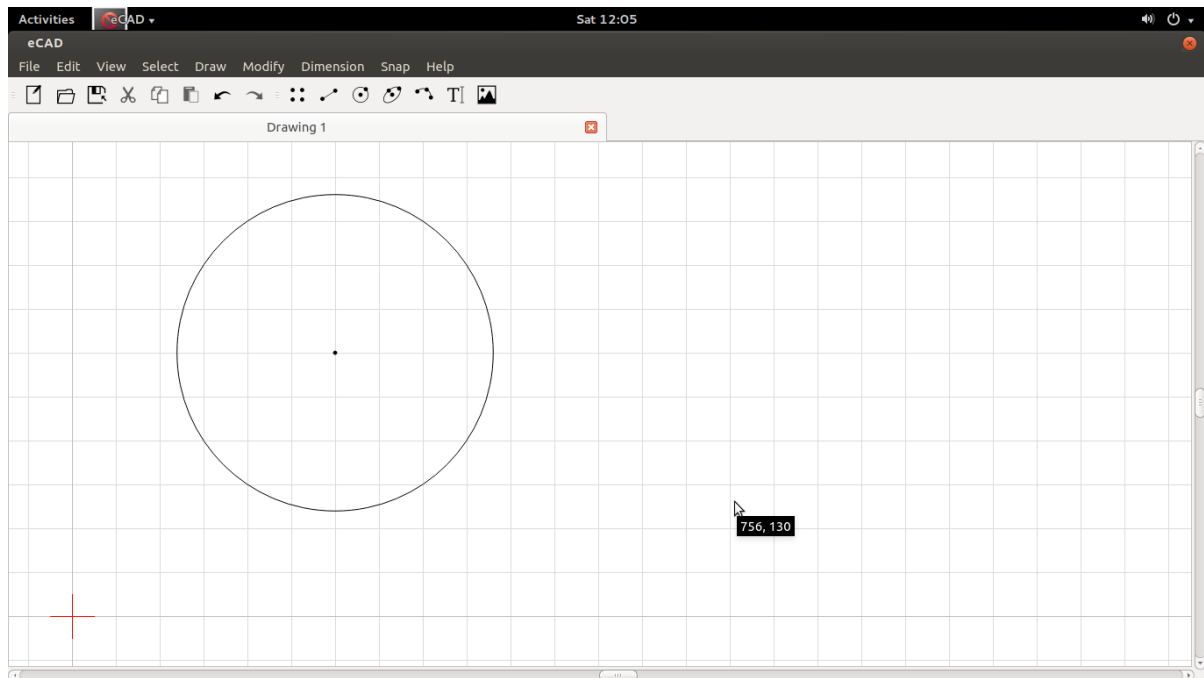


Figure 5: Working Space

This is the working space where all the entities are drawn. We can increase or decrease the working area by closing or opening the widgets like scripting console and status bar. At present they are closed. This is the maximum area one will get to work. One can also make more than one document so that he/she can work easily. All depends upon user need.

3.4 Scripting Console

In scripting console user can write the script/code to draw the drawing. So this feature is effective for technical user, who is excited and wants to code. The code for each entity is very simple. There are different icons for scripting. Each has its different meaning.

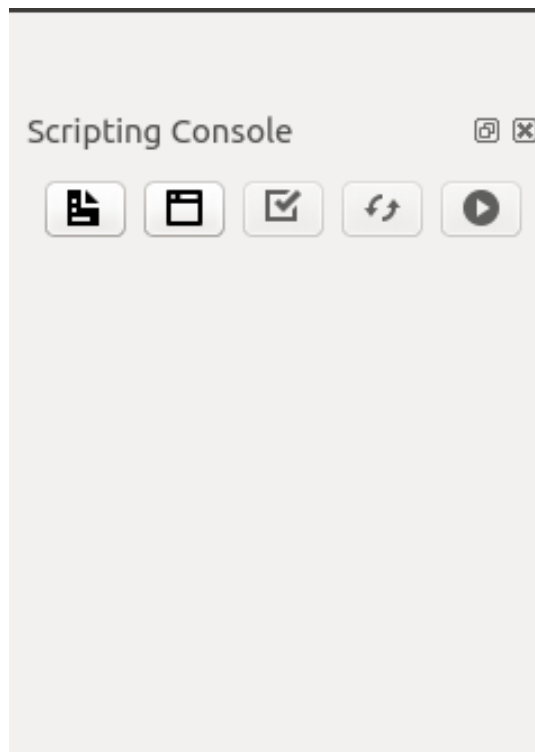


Figure 6: Scripting console



This will create a new document in scripting console.



This will load an existing script



This will save the script which is written.



This will clear the existing script.



This will execute the current script.

3.5 Status Bar

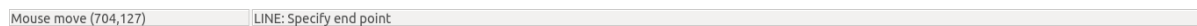


Figure 7: Status Bar

The status bar tells us about two things

- Current screen position
- What to do next while making an entity through UI part.