

WRY HOW TO USE DIA PROGRAM FOR FLOWCHARTS

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The program dia (Diagram Editor) is available for Linux, Windows and Mac OS.

STEPS USING DIA (DIAGRAM EDITOR) FOR CREATING FLOWCHARTS

(1) Run /usr/bin/dia GUI Application. Usually also available as already made launcher icon.)

(2) Menu ==> File ==> New
Opens a new xxxx.dia blank diagram file

(3) Menu ==> File ==> Save As
Give a name like "01-Tutorial-Steps.dia" in an appropriate directory.

(4) Centering the diagram as blank layout in GUI workspace

Scroll to get the Y-axis at 0 centered value.

Note that the Y-axis goes negative upward and positive downward.

On the X-axis the default is 0 at the top-left corner.

(5) Starting point in flowchart

In the flowchart palette, select the "Terminal Interrupt" object, which is oval looking. Paste object to center point at (X-Y) = (33, 0). We get a yellow bordered oval object. Type in text like "Start Program"

Center the object to the vertical axis at that point. Click outside and we get the object pasted. Now save with <Ctrl-s>.

Click the object again, the yellow border disappeared.

(6) Duplicate the object in Item(5) above.

Select the object, and we get a normal bordered object.
Menu ==> Edit ==> Duplicate
We get a yellowed object created.

Click outside the object, we get a normal border.
Click the object, then drag (hand icon) the object to another position below,
like to (33, 20).

Click the object again, "left click" mouse and hover the mouse (hold) for a
few seconds, the mouse changes to a hand icon and the border changes to yellow.
Now we can edit the text inside the box.

Change "Start Program" to "End Program".

Then click outside when finished editing text.

(7) Create a process/auxiliary operation object

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In the flowchart pellete, select the "Process/Auxiliary operation" object.
It is a square looking icon. Paste into the diagram.

We get a yellow bordered object. Type in text like "Process 1".
Then click outside after finished editing. We get a normal border again.

Duplicate this object. Menu ==> Edit ==> Duplicate.
Move object to a different location first.

The "left click" mouse and hover the mouse (hold) for a few seconds, the mouse
changes to a hand icon and the border changes to yellow. Now we can edit the
text inside the box.

Now change the text "Process 1" to "Process 2".

(8) Align and resize the process objects

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Drag box "Process 1" to (33, 5) . Resize the object.
Drag box "Process 2" to (33, 10). Resize the object.

(9) Copy and paste external text into box.

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Create a new blank process box object. Resize blank box.

NOTE: This blank box is critical. You must create the object first before you
can paste external text into it.

Then copy external pre-prepared text to the system's clipboard.

Now create a blank "text" object using the pallete "T" icon. Paste this
T object icon onto the diagram outside of any object, anywhere in the diagram.

NOTE: Using <Ctrl-v>

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Now paste using <Ctrl-v> the clipboard contents into this T text object.
It is crucial to use <Ctrl-v> for pasting external text.

Now, drag this text object into the blank process box object.
Done. Overlaid. We are done.

NOTE: Alignment

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Pre-prepared texts can be left aligned. When overlaid over a
blank box will stay left aligned.

If you use the original title text for each object as you created it,
it defaults to "center alignment" not left alignment.

To get "left alignment", we must first paste external text (pre-prepared)
into the text "T" object, then finally drag this "T" object into the
process box object. This is the "text overlay" over the process box.

NOTE: Order of object creation

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It is important to create the blank box first, then overlay text above it.

If we create a blank box later after we created a text object, then when
we drag the text into the blank box, we see nothing. Because the text goes
below the blank box and cannot be seen (opaque box) not transparent.
Ha ha ha.

(10) Tricks with arrows for directions.

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Create down arrow with arrowhead downward. Duplicate a few times.
Create top arrow with arrowhead upward. Duplicate a few times.
Create right arrow with arrowhead rightward. Duplicate a few times.
Create left arrow with arrowhead leftward. Duplicate a few times.

Click icon "Line(L)" at the top palette followed by selecting linestyle
(arrowhead) at the bottom. Paste this object. Resize and change
arrow head directions.

Then drag and drop appropriate arrows to appropriate locations as required
for the flowchart.

(11) Decision box (diamond) in flowchart

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This is a diamond icon in the palette.
The rest of Item(1) until Item(10) above are applicable. Remains the same.

(13) HOW TO CORRECTLY EXPORT DIAGRAM TO PNG

Format Cairo.png works for xxxx.dia files.

First, create a dummy horizontal textbox to cover extra border blank space on both the left and right sides of the diagram.

Otherwise, the exported PNG file is very narrow at the borders (slim). Expand this border a bit using a dummy textbox or text object above.

Later on, clip out this dummy area for presentation purposes.

(12) HINTS AND TIPS TO REMEMBER

Tip (1): Create blank objects first like boxes, arrows and text objects.

Tip (2): Duplicate these blank objects as many as we like. Resize the objects.

Tip (3): To edit objects, make sure the border or the text background is yellow.

Tip (4): For fine control, create "T-object" first, then copy external text into clipboard, then paste clipboard contents into "T-object" using <Ctrl-v>. Then drag T-object over blank objects.

Tip (5): Create base object first (like process box), then overlay the text object over the base object. Not the other way around.

Tip (6): Regularly save diagram using <Ctrl-s>.

```
wruslan@HPElBk8570w-rt-work:~$ uname -a
Linux HPElBk8570w-rt-work 5.11.0-43-lowlatency #47~20.04.2-Ubuntu
SMP PREEMPT Mon Dec 13 11:55:57 UTC 2021 x86_64 x86_64 x86_64 GNU/Linux
```

```
wruslan@HPElBk8570w-rt-work:~$ lsb_release -a
LSB Version: core-11.1.0ubuntu2-noarch;security-11.1.0ubuntu2-noarch
Distributor ID: Ubuntu
Description: Ubuntu 20.04.3 LTS
Release: 20.04
Codename: focal
```

```
wruslan@HPElBk8570w-rt-work:~$ locate bin/dia
/usr/bin/dia
/usr/bin/dia2code
/usr/bin/diadia
/usr/bin/diagtool-10
/usr/lib/llvm-10/bin/diagtool
wruslan@HPElBk8570w-rt-work:~$
```

Alhamdulillah.
Wassalam.
WRY

