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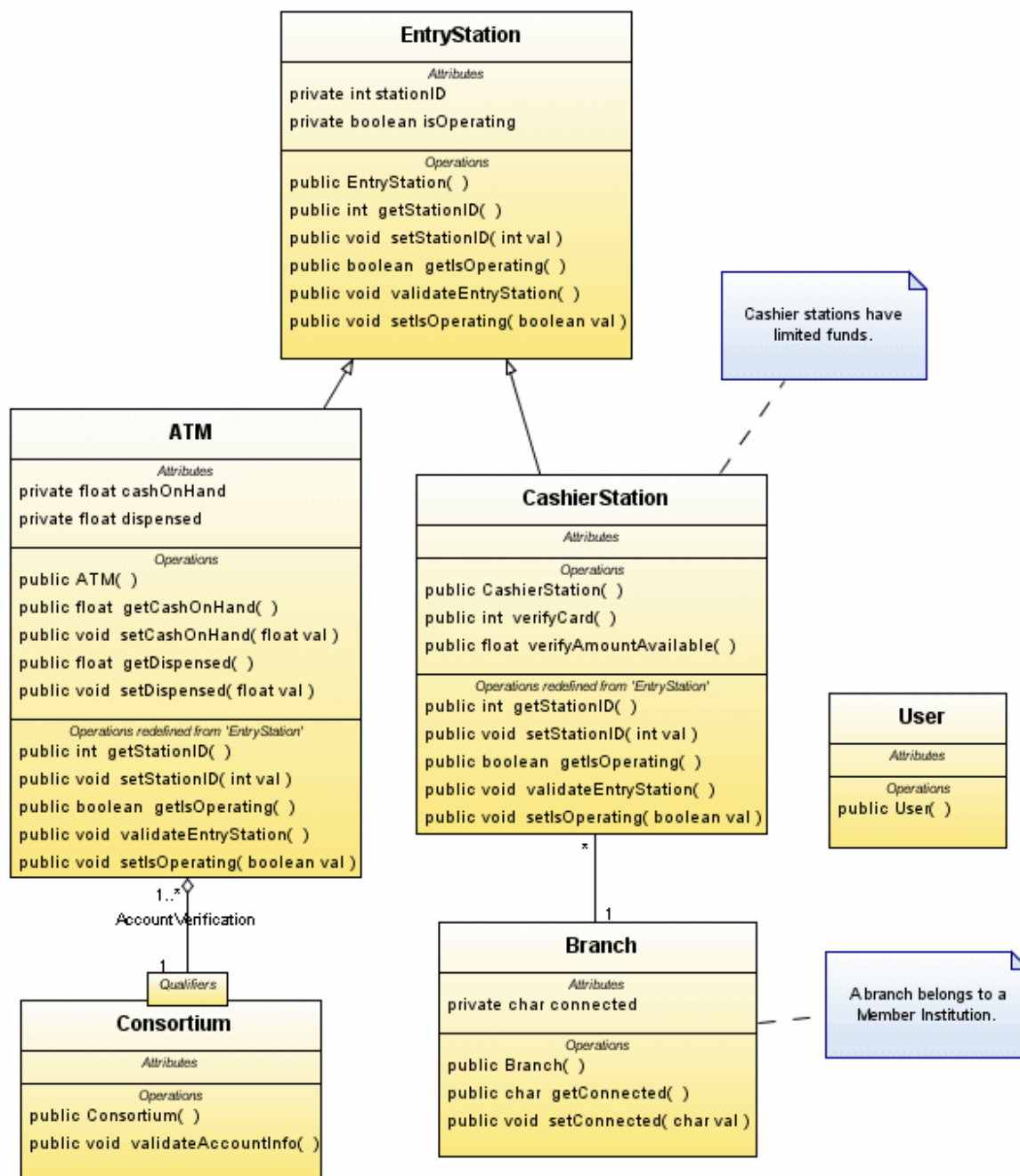
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How to use doxygen to create UML class diagrams from C++ source

I have been searching for some material that describes how to generate simple class diagrams with doxygen, but couldn't find one. Can anybody help?

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[c++](#) [uml](#) [doxygen](#) [graphviz](#) [class-diagram](#)

edited Jan 21 '11 at 6:13

asked Jan 21 '11 at 6:07



[devnull](#)

8,531 47 118 220

5 Answers

Doxygen creates inheritance diagrams but I don't think it will create an entire class hierarchy. It does allow you to use the GraphViz tool. If you use the Doxygen GUI frontend tool you will find the relevant options in Step2: -> Wizard tab -> Diagrams. The DOT relation options are under the Expert Tab.

edited Jul 10 '12 at 15:28

answered Jan 21 '11 at 6:41



[Besi](#)

15.4k 15 96 168



[DPD](#)

940 1 10 15

6 You will be able to navigate the whole hierarchy, the limits are on what is displayed on a diagram. There are a couple of parameters that limit the scope of the graph. DOT_GRAPH_NODES limits the number of entries on a single page and MAX_DOT_GRAPH_DEPTH restricts how deep it goes. Setting these to large values makes it very time consuming for a large project. – [DanS](#) Jan 21 '11 at 8:36

+1 on this - doxygen-gui works like a CHARM – [Morten Jensen](#) Feb 19 '13 at 11:42

Quote from [this post](#) (it's written by the author of doxygen himself) :

run doxygen -g and change the following options of the generated Doxyfile:

```
EXTRACT_ALL      = YES
HAVE_DOT         = YES
UML_LOOK         = YES
```

run doxygen again

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-
- 6 This won't generate a full class diagram (e.g., the many-to-one relationship between class A and class B); only an inheritance diagram, i.e., showing superclass/subclass relationships. – [stepthom](#) Feb 27 '15 at 17:05
-

Hmm, this seems to be a bit of an old question, but since I've been messing about with Doxygen configuration last few days, while my head's still full of current info let's have a stab at it -

I think the previous answers almost have it:

The missing option is to add `COLLABORATION_GRAPH = YES` in the Doxyfile. I assume you can do the equivalent thing somewhere in the doxywizard GUI (I don't use doxywizard).

So, as a more complete example, typical "Doxyfile" options related to UML output that I tend to use are:

```
EXTRACT_ALL           = YES
CLASS_DIAGRAMS        = YES
HIDE_UNDOC_RELATIONS  = NO
HAVE_DOT              = YES
CLASS_GRAPH           = YES
COLLABORATION_GRAPH   = YES
UML_LOOK              = YES
UML_LIMIT_NUM_FIELDS  = 50
TEMPLATE_RELATIONS    = YES
DOT_GRAPH_MAX_NODES   = 100
MAX_DOT_GRAPH_DEPTH   = 0
DOT_TRANSPARENT       = YES
```

These settings will generate both "inheritance" (`CLASS_GRAPH=YES`) and "collaboration" (`COLLABORATION_GRAPH=YES`) diagrams.

Depending on your target for "deployment" of the doxygen output, setting `DOT_IMAGE_FORMAT = svg` may also be of use. With svg output the diagrams are "scalable" instead of the fixed resolution of bitmap formats such as .png. Apparently, if viewing the output in browsers other

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panning" or the generated svg diagrams. I did try this some time ago, and the svg output was very visually attractive, but at the time, browser support for svg was still a bit inconsistent, so hopefully that situation may have improved lately.

As other comments have mentioned, some of these settings (`DOT_GRAPH_MAX_NODES` in particular) do have potential performance impacts, so YMMV.

I tend to hate "RTFM" style answers, so apologies for this sentence, but in this case the Doxygen documentation really is your friend, so check out the Doxygen docs on the above mentioned settings- last time I looked you can find the details at <http://www.stack.nl/~dimitri/doxygen/manual/config.html>.

edited Apr 27 at 17:30



blueskin

3,709 2 39 69

answered Jul 12 '16 at 7:46



user6092647

171 2 4

Good answer. In your answer you wrote "CLASS_DIAGRAMS" instead if "CLASS_GRAPH". – DavidS Jul 13 '16 at 12:38

Hmm, actually, now you bring it up, I see I have both `CLASS_DIAGRAMS = YES` and `CLASS_GRAPH = YES`. After checking the docs for Doxygen 1.8.9.1 I found that actually `CLASS_GRAPH = YES` will override `CLASS_DIAGRAMS = YES` so the two options interact, with `CLASS_GRAPH = YES` taking precedence. So, actually, for the purposes of the original question what I have will work, nevertheless good catch ! – user6092647 Jul 14 '16 at 2:07

you can also change the `OUTPUT_DIRECTORY` and allow `RECURSIVE` search – King's jester Aug 9 at 12:38

I think you will need to edit the doxys file and set `GENERATE_UML` (something like that) to true. And you need to have dot/graphviz installed.

answered Jan 21 '11 at 6:28



fzhou

237 1 3 11

11 Are you talking about the `UML_LOOK` option? – David Doria Jan 17 '12 at 19:46

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Enterprise Architect will build a UML diagram from imported source code.

answered Jul 30 '14 at 16:07



zooropa

1,973 3 24 50

Upvoted for also answering the question "If there are better tools to achieve this easier, please let me know."

– kaveish Aug 12 '16 at 8:50
