Intro to Doxygen

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Doxywizard

- GUI that helps you configure and run doxygen
- Doxywizard assists in the creation of a doxygen configuration file
 - User enters information through GUI forms
 - The configuration file created by Doxywizard can be used directly by doxygen
 - Enables batch processing from the command line: doxygen <config_file>
- Doxywizard can run doxygen for you
 - Hit the "Run" button
 - Captures output from doxygen in a GUI window
- Doxywizard is supported by the developers of doxygen
 - https://www.stack.nl/~dimitri/doxygen/manual/doxywizard_usage.html

Doxywizard: Start up

Step 1: Specify the working directory from which doxygen will run

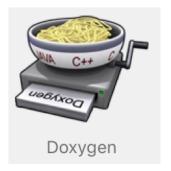
Select...

Step 2: Configure doxygen using the Wizard and/or Expert tab, then switch to the Run tab to generate the documentation

	Wizard	Expert	Run		
Topics Project Mode	Provide som	ne informatio	n about	the project you a	re documenting
Output Diagrams		ject name: t synopsis:	My Pro	oject	
	-	rsion or id:			
	Pr	roject logo:	Sele	ct No Projec	t logo selected.
	Specify the o	directory to	scan for	source code	
	Source co	de directory	:		Select
	Scan rec	ursively			
	Specify the o	directory wh	ere dox	ygen should put th	ne generated documentation
	Destinatio	n directory:			Select
	Previous				Next



- Wizard: Quick and easy
- Expert: All the gory details



On the Mac, click on the Doxygen icon in the Applications folder

Doxywizard: Wizard configuration

Select
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Select
Next

- • Doxygen GUI frontend + Step 1: Specify the working directory from which doxygen will run /Users/stephenh/projects/doxygen/ioda/doxygen Select... Step 2: Configure doxygen using the Wizard and/or Expert tab, then switch to the Run tab to generate the documentation Wizard Expert Run Topics Project Select the desired extraction mode: Mode Documented entities only Output All Entities Diagrams Include cross-referenced source code in the output Select programming language to optimize the results for Optimize for C++ output Optimize for C++/CLI output Optimize for Java or C# output Optimize for C or PHP output Optimize for Fortran output Optimize for VHDL output Previous Next
- Mode
 - Select what to extract and the primary programming language in the source code

- Project
 - Set paths to source code and destination to output documentation

Doxywizard: Wizard configuration

•	Doxygen GUI frontend +	
tep 1: Specify the working director	r from which doxygen will run	
Users/stephenh/projects/doxygen/i	oda/doxygen	Select
tep 2: Configure doxygen using the Topics Project Mode Output Diagrams	Wizard and/or Expert tab, then switch to the Run tab to generate Wizard Expert Run Select the output format(s) to generate VITML plain HTML with navigation panel	e the documentation
	 prepare for compressed HTML (.chm) With search function Change color 	
	as intermediate format for hyperlinked PDF as intermediate format for PDF as intermediate format for PostScript	
	Man pages Rich Text Format (RTF) XML	Next

. Doxygen GUI frontend + Step 1: Specify the working directory from which doxygen will run /Users/stephenh/projects/doxygen/ioda/doxygen Select... Step 2: Configure doxygen using the Wizard and/or Expert tab, then switch to the Run tab to generate the documentation Wizard Expert Run Topics Project Diagrams to generate Mode No diagrams Output Use built-in class diagram generator Diagrams Use dot tool from the GraphViz package Dot graphs to generate Class diagrams Collaboration diagrams Overall Class hierarchy Include dependency graphs Included by dependency graphs Call graphs Called by graphs Previous Next

- Output
 - Set the formats for the generated documentation

DiagramsSelect any diagrams to be placed in the

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generated documentation

Doxywizard: Expert configuration

Users/stephenh/projects/doxygen/ioda/doxyg	en		Select
Topics Source Browser Index HTML LaTeX	Wizard Expert Run UML_LIMIT_NUM_FIELDS TEMPLATE_RELATIONS INCLUDE_GRAPH	10 	nentation
RTF Man XML Docbook AutoGen PerlMod Preprocessor External Dot	INCLUDED_BY_GRAPH CALL_GRAPH CALLER_GRAPH GRAPHICAL_HIERARCHY DIRECTORY_GRAPH DOT_IMAGE_FORMAT INTERACTIVE_SVG DOT_PATH	 ✓ ✓ ✓ ✓ Png ✓ ✓ /usr/local/bin/dot 	
The DOT_PATH tag can be used to specify the path where the dot tool can be found. If left blank, it is assumed the dot tool can be found in the path. This tag requires that the tag HAVE_DOT is set to YES.	DOTFILE_DIRS) 🕢 »
	MSCFILE_DIRS	+ -) 🗿 »
	Previous		Next

Doxygen GUI frontend +

• Set the path to the dot executable

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• Typically: /usr/local/bin/dot

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tep 1: Specify the working directory from whether the second	nich doxygen will run
Users/stephenh/projects/doxygen/ioda/doxy	vgen Select
	and/or Expert tab, then switch to the Run tab to generate the documentation Wizard Expert Run EXTRACT_ALL Image: Construct of the state of the

- EXTRACT_PRIVATE will include private data members and methods in generated documentation
- EXTRACT_STATIC will include static members in generated documentation

Doxywizard: Expert configuration

	Doxygen GUI frontend +	
Step 1: Specify the working directory from which	h doxygen will run	
/Users/stephenh/projects/doxygen/ioda/doxyge	n	Select
Step 2: Configure doxygen using the Wizard an	d/or Expert tab, then switch to the Run tab to generate the docur	nentation
	Wizard Expert Run	
Topics		
Project Build	INPUT_ENCODING UTF-8	
Messages		
Input Source Browser	FILE_PATTERNS *.F90 +	- »
Index	*.vhd	
HTML	*.vhd	
LaTeX	*.ucf	
RTF	*.qsf	
Man XML	*.F90	
Docbook	RECURSIVE	
AutoGen		
DarlMad	EXCLUDE (+) (-)	(c) »
EXTRACT_LOCAL_METHODS		
This flag is only useful for Objective-C code. If set to YES, local methods, which are defined in the implementation section but not in the interface are included in the		
documentation. If set to NO, only methods in the interface are included.	EXCLUDE_SYMLINKS	
The default value is: NO.	EXCLUDE_PATTERNS +	- »
	Previous	Next

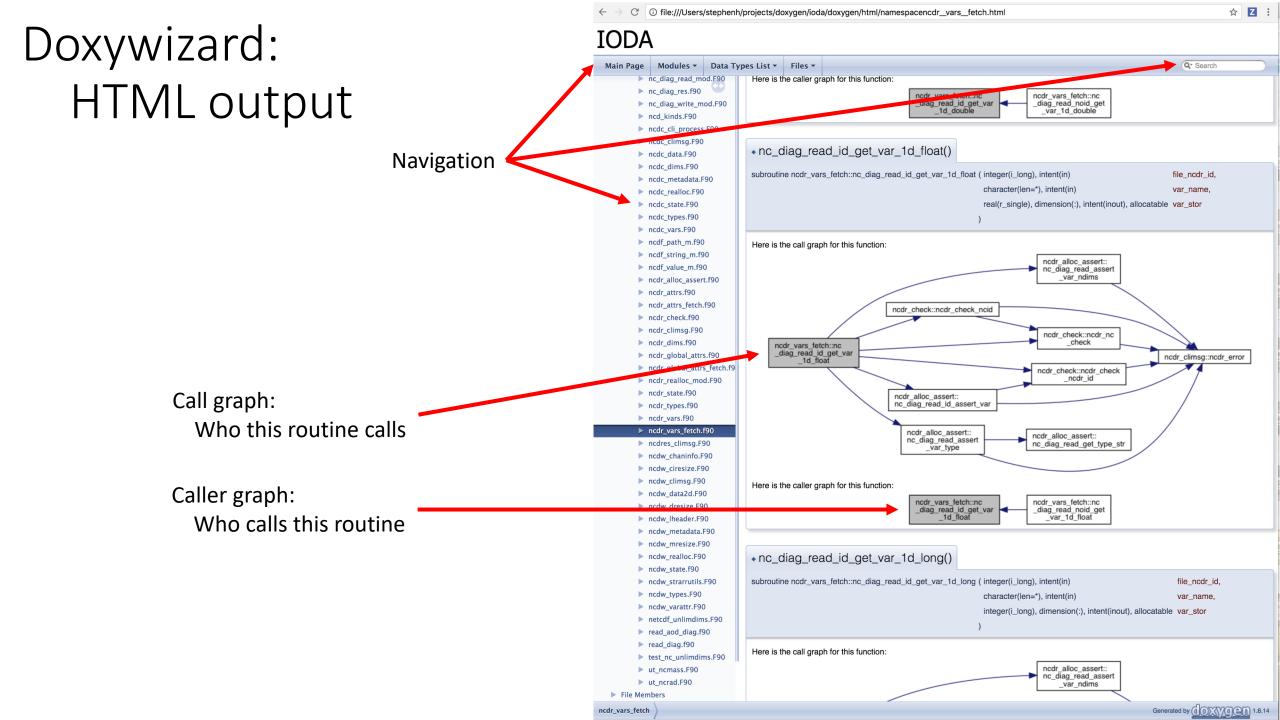
• Make sure to include *.F90 file pattern

Doxywizard: Run doxygen

1: Specify the working directory from which de	Doxygen GUI frontend +	
rs/stephenh/projects/doxygen/ioda/doxygen		Select
2: Configure doxygen using the Wizard and/o	r Expert tab, then switch to the Run tab	to generate the documentation
	Wizard Expert Run	
Run doxygen Status: not running	She	ow configuration Save log
Generating caller graph for functi Generating docs for compound read Generating docs for namespace read Generating call graph for function Generating caller graph for function	<pre>aod_diag::diag_data_chan_lis aod_diag::diag_data_fix_list aod_diag::diag_data_name_lis aod_diag::diag_header_chan_l aod_diag::diag_header_fix_li aod_diag::get_aoddiag aod_diag::set_aoddiag diag read_diag::close_radiag on read_diag::find_ncdiag_id read_diag::read_all_radiag read_diag::read_all_radiag aon read_diag::read_radiag_data on read_diag::read_radiag_data</pre>	ta ta ta ta ta ta ta ta ta ta ta ta ta t

• You will get the same result by running on the command line:

doxygen Doxyfile



Getting organized

- Code writers
 - Place appropriate comments in source files for Doxygen
 - Test in your local feature branch using Doxywizard
- Core team
 - Construct a flow that visits all the repositories, runs doxygen and publishes the generated documentation
 - This flow would pull from GitHub and operate on:
 - develop branch
 - Test the documentation generation flow
 - master branch, using release tags
 - Publish documentation that is in sync with releases
- We may want to create a directory in a repository, as needed, to hold the source for any relevant documentation that can't be generated from the source code.
 - Doxygen
 - Sphinx
 - OOPS repository has an example of this
 - Subdirectory: Documents
 - Description of OOPS (doxygen), manual for QG model (LaTex), etc.