

## Minim definition for evaluation of "simple-requirements" reporting and toolchain

This Minim checklist file defines a number of checklists that were used to evaluate a semi-automatic tool chain for requirements analysis and reporting. It was one of the first checklists to be created for use with the Minim based tooling, and as such uses some constructions (such as named target resources) that would now be considered unnecessarily restrictive.

This file does, however, show how multiple checklists can be defined using different combinations of underlying check items.

The checklist items that examine RO metadata assume that the wfdesc and wfprov vocabularies, defined as part of the Wf4Ever RO model (<http://wf4ever.github.io/ro/>), but some of the wfdesc vocabulary usage here is not in line with current usage recommendations.

<b>Prefixes:</b>	<b>Prefix</b>	<b>URI</b>		
	rdf	<a href="http://www.w3.org/1999/02/22-rdf-syntax-ns#">http://www.w3.org/1999/02/22-rdf-syntax-ns#</a>		
	rdfs	<a href="http://www.w3.org/2000/01/rdf-schema#">http://www.w3.org/2000/01/rdf-schema#</a>		
	owl	<a href="http://www.w3.org/2002/07/owl#">http://www.w3.org/2002/07/owl#</a>		
	xsd	<a href="http://www.w3.org/2001/XMLSchema#">http://www.w3.org/2001/XMLSchema#</a>		
	xml	<a href="http://www.w3.org/XML/1998/namespace">http://www.w3.org/XML/1998/namespace</a>		
	rdfg	<a href="http://www.w3.org/2004/03/trix/rdfg-1/">http://www.w3.org/2004/03/trix/rdfg-1/</a>		
	ore	<a href="http://www.openarchives.org/ore/terms/">http://www.openarchives.org/ore/terms/</a>		
	ao	<a href="http://purl.org/ao/">http://purl.org/ao/</a>		
	dcterms	<a href="http://purl.org/dc/terms/">http://purl.org/dc/terms/</a>		
	ro	<a href="http://purl.org/wf4ever/ro#">http://purl.org/wf4ever/ro#</a>		
	minim	<a href="http://purl.org/minim/minim#">http://purl.org/minim/minim#</a>		
	ex	<a href="http://example.org/">http://example.org/</a>		
<b>Checklists:</b>	<b>Target</b>	<b>Purpose</b>	<b>Model</b>	<b>Description</b>
	{+targetro}	Runnable	#runnable-RO_mode	Checklist for a "runnable" RO: is required information present for the RO to be runnable?
	{+targetro}	Reviewable	#reviewable_RO_model	Checklist for a "reviewable" RO: is sufficient information provided for a reviewer to reasonably be able to understand what is being performed by the RO?
	{+targetro}	Repeatable	#repeatable_RO_model	Checklist for a "repeatable" RO: is sufficient information available to run the RO and compare the outputs with those from a previously reported
<b>Model:</b>	#runnable-RO_mode			Model for "runnable" RO. Information that must be available, and other conditions, for the requirements Research Object to be runnable.
<b>Items:</b>	<b>Level</b>	<b>Rule</b>		
req_1	MUST	#environment-software/lpod-show		Requirement for lpod-show utility to be available

req_2	MUST	#environment-software/python
req_3	MUST	#isPresent/workflow-instance
req_4	MUST	#isPresent/workflow-inputfiles

Requirement for python software platform to be available  
Requirement for processing script to be available  
Requirement for input files to be available

**Model:** #reviewable\_RO\_model

Model for "reviewable" RO: information that must be available for the requirements Research Object to be reviewable; i.e. so that a reviewer can see all the workflow executions, with inputs and outputs generated.

Items:	Level	Rule
req_3	MUST	#isPresent/workflow-instance
req_3	MUST	#isPresent/workflow-run
req_4	MUST	#isPresent/workflow-inputfiles
req_4	MUST	#isPresent/workflow-outputfiles

Requirement for processing script to be available  
Requirement for provenance generated by a workflow run to be  
Requirement for input files to be available  
Requirement for generated output files to be available

**Model:** #repeatable\_RO\_model

Model for "repeatable" RO: information that must be available for the requirements Research Object to be repeatable; i.e. to re-run it and compare results with a previous run.

Items:	Level	Rule
req_1	MUST	#environment-software/lpod-show
req_2	MUST	#environment-software/python
req_3	MUST	#isPresent/workflow-instance
req_4	MUST	#isPresent/workflow-inputfiles
req_4	MUST	#isPresent/workflow-outputfiles

Requirement for lpod-show utility to be available  
Requirement for python software platform to be available  
Requirement for processing script to be available  
Requirement for input files to be available  
Requirement for generated output files to be available

## Define rules to test individual requirements

**Rule:** #environment-software/lpod-show  
**Command:** lpod-show.py --version  
**Response:** 0.9.3  
**Pass:** lpod-show version 0.9.3 is present  
**Fail:** lpOD command %(command)s returns %(response)s

lpOD is a library and utilities for accessing OpenOffice documents.

**Rule:** #environment-software/python  
**Command:** python --version  
**Response:** ^Python 2\..\*\$  
**Pass:** Python 2.7.x present  
**Fail:** Python 2.7.x not present

Looking for installed Python version 2.7

(Regexp match response)

**Rule:** #isPresent/workflow-instance  
**Exists:** ?wf rdf:type wfdesc:Workflow  
**Pass:** Workflow instance or template found  
**Fail:** No workflow instance or template found

Workflow instance is described in RO metadata

<b>Rule:</b>	#isPresent/workflow-run	Workflow run provenance is present in RO metadata
	<b>Exists:</b> ?wf rdf:type wfprov:WorkflowRun	
	<b>Pass:</b> Workflow instance or template found	
	<b>Fail:</b> No workflow instance or template found	
<b>Rule:</b>	#isPresent/workflow-inputfiles	Workflow input files must be present and aggregated in the RO. (This particular checklist item was formulated before the ability to check that files exist was added to the checklist evaluator.)
	<b>ForEach:</b> ?wf rdf:type wfdesc:Workflow ; wfdesc:hasInput [ wfdesc:hasArtifact ?if ]	
	<b>ResultMod:</b> ORDER BY ?if	
	<b>Aggregates:</b> {+if}	
	<b>Pass:</b> All workflow inputs referenced are present	
	<b>Fail:</b> Workflow %(wf)s input %(if)s not found	
	<b>None:</b> No workflow input file references were found	
<b>Rule:</b>	#isPresent/workflow-outputfiles	Workflow output files must be present and aggregated in the RO. (This particular checklist item was formulated before the ability to check that files exist was added to the checklist evaluator.)
	<b>ForEach:</b> ?wf rdf:type wfdesc:Workflow ; wfdesc:hasOutput [ wfdesc:hasArtifact ?	
	<b>ResultMod:</b> ORDER BY ?of	
	<b>Aggregates:</b> {+of}	
	<b>Pass:</b> All workflow outputs referenced are present	
	<b>Fail:</b> Workflow %(wf)s output %(of)s not found	
	<b>None:</b> No workflow output file references were found	
<b>End:</b>		