WDL Workflows Guide

December, 2023

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# About this Course

This WDL workflow development guide shows a bioinformatics workflow developer how to strategically develop and scale up a WDL workflow that is iterative, reproducible, and efficient in terms of time and resource used. This guide is flexible regardless of where the data is, what computing resources are being used, and what software is being used.

## 0.1 Target Audience

The course is intended for first time developers of the [WDL workflow language](https://github.com/openwdl/wdl), who wants to iteratively develop a WDL bioinformatics workflow. The audience should be able to run a WDL workflow on a computing engine of their choice, such as Cromwell, miniWDL, or a cloud computing environment such as Terra, AnVIL, or Dockstore.

## 0.2 Curriculum

The course covers…

An excellent WDL companion resource that is not platform dependent is [OpenWDL Docs](https://docs.openwdl.org/en/stable/). OpenWDL Docs focuses on the basic grammar of WDL as well as providing excellent cookbook recipes of common WDL workflow structures. In this guide we will reference these basic grammar structures and common workflow cookbook recipes.

# 1 Introduction to WDL

Welcome!

* Review of basic WDL syntax

# 2 Defining a workflow plan: Introduce somatic mutation calling workflow

# 3 The first task

# About the Authors

These credits are based on our [course contributors table guidelines](https://www.ottrproject.org/more_features.html#giving-credits-to-contributors).

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| Content Consultants (include chapter name/link in parentheses or word “General”) - make new line if more than one chapter involved | Gave high level advice on content |
| Acknowledgments | Gave small assistance to content but not to the level of consulting |
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## ─ Session info ───────────────────────────────────────────────────────────────  
## setting value   
## version R version 4.0.2 (2020-06-22)  
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## ui X11   
## language (EN)   
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## ctype en\_US.UTF-8   
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## bookdown 0.24 2023-03-28 [1] Github (rstudio/bookdown@88bc4ea)   
## cachem 1.0.7 2023-02-24 [1] CRAN (R 4.0.2)   
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## htmltools 0.5.5 2023-03-23 [1] CRAN (R 4.0.2)   
## knitr 1.33 2023-03-28 [1] Github (yihui/knitr@a1052d1)   
## magrittr 2.0.3 2022-03-30 [1] CRAN (R 4.0.2)   
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## rlang 1.1.0 2023-03-14 [1] CRAN (R 4.0.2)   
## rmarkdown 2.10 2023-03-28 [1] Github (rstudio/rmarkdown@02d3c25)  
## rprojroot 2.0.3 2022-04-02 [1] CRAN (R 4.0.2)   
## sessioninfo 1.1.1 2018-11-05 [1] RSPM (R 4.0.3)   
## stringi 1.5.3 2020-09-09 [1] RSPM (R 4.0.3)   
## stringr 1.4.0 2019-02-10 [1] RSPM (R 4.0.3)   
## testthat 3.0.1 2023-03-28 [1] Github (R-lib/testthat@e99155a)   
## usethis 1.6.3 2020-09-17 [1] RSPM (R 4.0.2)   
## withr 2.3.0 2020-09-22 [1] RSPM (R 4.0.2)   
## xfun 0.26 2023-03-28 [1] Github (yihui/xfun@74c2a66)   
## yaml 2.2.1 2020-02-01 [1] RSPM (R 4.0.3)   
##   
## [1] /usr/local/lib/R/site-library  
## [2] /usr/local/lib/R/library

# 4 References