2018-10-11

Ontario Institute for Cancer Research

MISO Training for Oxford Nanopore data

Logging In

We will use MISO Stage for these tutorials

1. Log into the laptop using the account that has been created for you. The password is your first initial + last initial + “@18182” (e.g. DC@18182 for Dillan Cooke)
2. Connect to the OICR Personal WiFi network using the same username and password that you use for email
3. In your web browser (Chrome or Firefox), navigate to MISO Stage: https://miso.gsi.oicr.on.ca
4. Log in using the same username and password that you use for email

Goal

- Learn how to enter Oxford Nanopore data into MISO in the quickest way possible
  - Will not explore all MISO features
  - Other tutorials available at https://oicr-gsi.github.io/miso-docs-oicr/

Projects

- Grouping of samples, libraries, sequencer runs, and other related items
- Edit Project page shows all related items
- Samples belong to a project. Most other items are related indirectly

Exercise

Complete exercise 2.1: Creating a new project

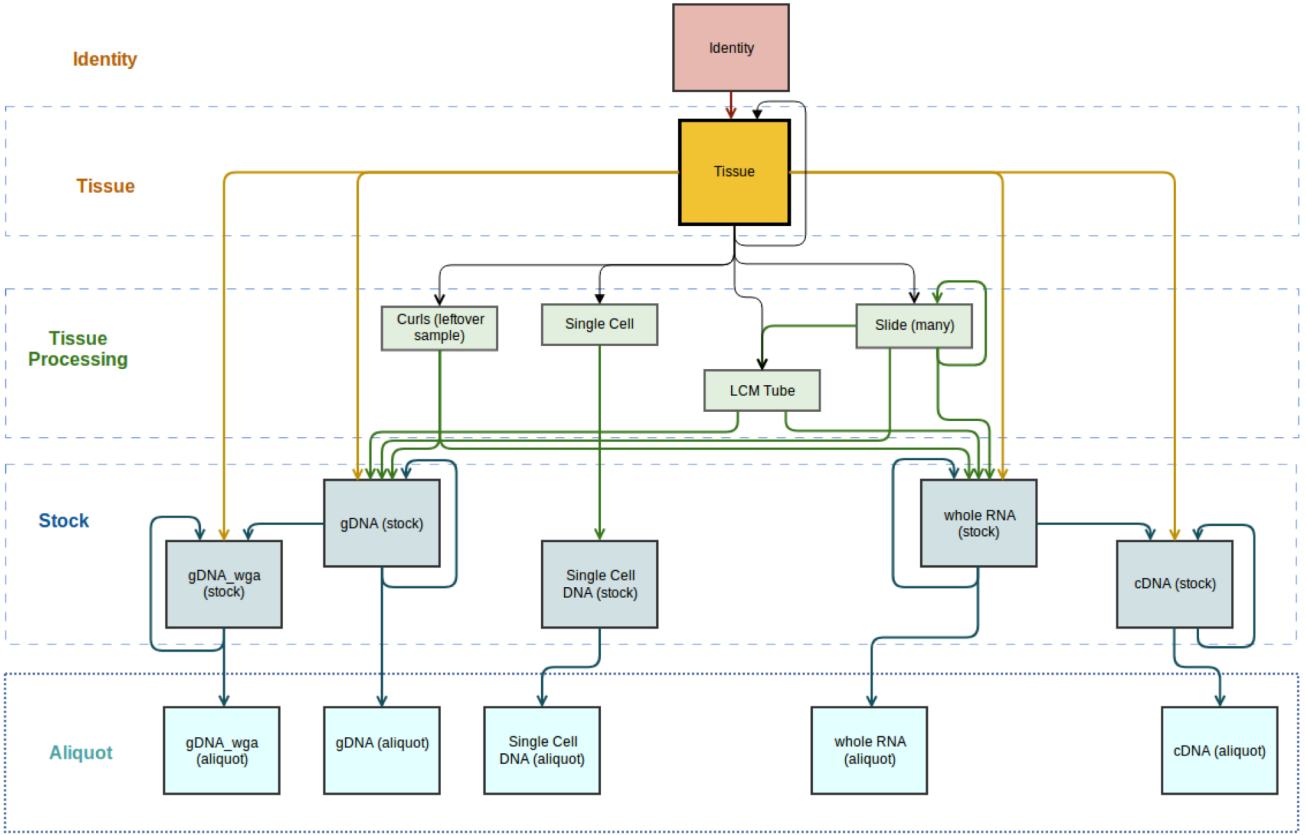
https://oicr-gsi.github.io/miso-docs-oicr/6-0-oxford-nanopore

or https://bit.ly/2NAxQZ4

Samples

- Samples have different classes according to our sample hierarchy
- Classes are divided into categories
  - Identity – represents a donor or organism
  - Tissue – piece of tissue taken from the donor or organism
  - Tissue Processing – optional steps describing additional processing of the tissue sample
  - Stock – analyte extracted from the tissue
  - Aliquot – analyte sample ready to be made into a library, or used for other purposes
- We can “receive” samples at any level
  - Ghost samples created when necessary
- We can propagate samples from one level to the next

Sample Hierarchy



Libraries

- Libraries can be propagated from Samples, or they can be received. We will receive libraries for this tutorial
  - Other tutorials demonstrate how to create and propagate Samples
- When receiving libraries, much sample information is required. This is to create the sample hierarchy
- Library Types vary depending on the platform. ONT library types match the protocol name
- Library Kits are also platform-specific

Exercise

Complete exercise 3.1: Entering received Libraries

https://oicr-gsi.github.io/miso-docs-oicr/6-0-oxford-nanopore

or https://bit.ly/2NAxQZ4

Dilutions, Pools, and Orders

- Libraries cannot be directly added to a run
- Create dilutions
- Create pools
  - May contain one or more dilutions
- Optional: create orders for sequencing
  - Specify required run parameters and number of lanes (runs)
- Add pools to runs
  - Matching orders will be marked as running/completed

Exercise

Complete the following exercises:

- 4.1: Creating a Dilution
- 4.2: Creating a Pool
- 4.3: Creating an Order

https://oicr-gsi.github.io/miso-docs-oicr/6-0-oxford-nanopore

or https://bit.ly/2NAxQZ4

Containers and Runs

- Flow cells are also called “sequencing containers” in MISO
- Pools are loaded into flow cells
  - Flow cell models in MISO match the ONT flow cell versions
    - FLO-MIN106, FLO-MIN107, PRO-001, PRO-002
  - Pore version, received date, and returned date can be recorded
  - Pore count (QC) can be recorded for multiple dates
- Flow cells are loaded into the sequencer for a sequencing run
- MinKNOW and protocol versions can be recorded on the run

Exercise

Complete the following exercises:

- 5.1: Create a Container
- 5.2: Create a Run
- 5.3: Adding pools to runs

https://oicr-gsi.github.io/miso-docs-oicr/6-0-oxford-nanopore

or https://bit.ly/2NAxQZ4

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