**MIROC River Map edit tool:**

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**[0] Install Java environment on your machine.**

<For Mac User>

<https://amateur-engineer-blog.com/java-development-environment-on-mac/>

**[1] Map pre-processing (gosh/ directory)**

(1-0) Go to gosh/src/ directory and compile Fortran90 codes.

Edit grid number and size (nx, ny, gsize) if needed, in each F90 code.

(1-1) Prepare Land Fraction (lkfrac) and Lake Fraction (lkfrc) files.

Some sample codes are available in s01-setup.sh

(1-2) Prepare river basin ID and river basin color files.

Initial river map should be prepared externally (for example, using existing river map at the same resolution, or calculate initial flow direction from elevation data)

Some sample codes are available in s02-set\_basin.sh

**[2] Edit flow direction using JAVA tool. (java/ directory)**

(2-1) Compile Java source code

Edit grid size (nx, ny) in Starter.java

Compile using javac:

% javac -classpath ./ Starter.java

Launch Flow Direction Editor

% java -classpath ./ Starter.java

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自動的に生成された説明

(2-2) Please open files from java/data/ directory.

1. Open Flow Direction File from “File” tab

2. Open River Basin Color file from “Basin” tab.

3. (optional) location of river can be shown by opening rivlist.txt from “River” tab.

4. (optional) location of coastline can be shown by opening coastlist.txt from “Coast” tab.

High resolution river and coast data available in java/data/river\_coast/

(2-3) Edit flow direction

Left click: modify flow direction clockwise

Right click: modify flow direction counter-clockwise

Middle click: modify to ocean, mouth, inland mouth

Size: tab: change visualization size

Move tab: change working location.

Note: if you want to update basin color, color file should be updated by Fortran90 code (as in Step 1-2).

(2-4) Save river map

Save flow direction map using “File” tab.

**[3] Post processing (gosh/ directory)**

(3-1) Check errors of modified flow direction map (loops and crossings)

Sample codes are in s03-check.sh

(3-2) If needed, please prepare river width data.

1. Prepare runoff climatology data (same as river map grid coordinate, unit [mm/year]

Prepare grid center latitude file (lat.grd)

1. Calculate river width from flow direction and runoff files.

Sample codes available in s04-rivwth.sh