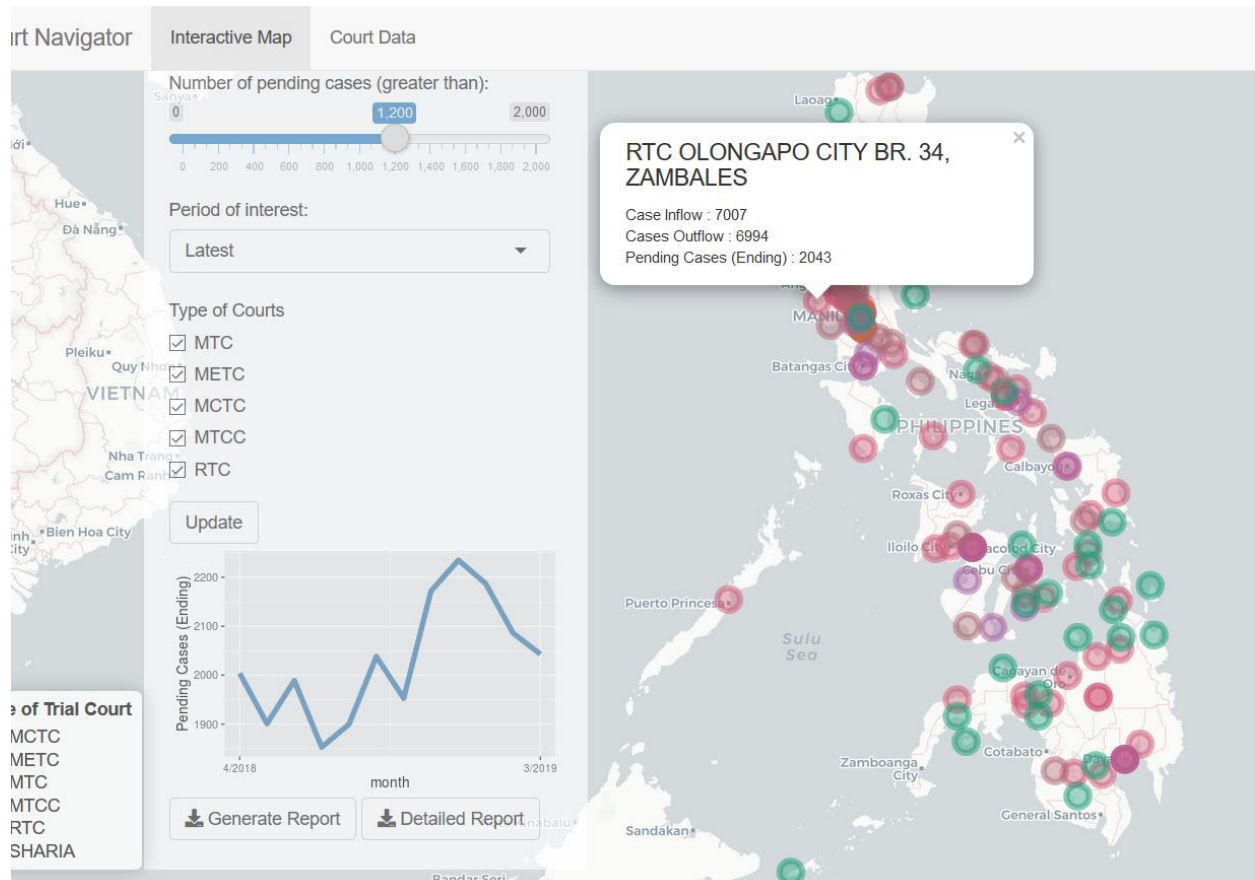# Court Navigator Manual

Introduction

This application was created for the Office of the Court Administrator of the Supreme Court to easily identify lower-level courts that are heavily burdened by examining the pending cases and the caseflow. This application further provides assistance by producing a general summary of the filtered courts and a detailed report of the selected courts. The application was designed and developed by Will Seonmin Heo.[1]

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[1] Credit: This application adopted many parts of the code, such as the Javascript code, from https://github.com/rstudio/shiny-examples.

Note that the uploaded version uses randomly generated caseflow data and branch numbers and does not contain any confidential information.

Overview

The application is primarily coded in R, although some features of the application incorporate Javascript and HTML. The application uses several packages and heavily relies on the Shiny package that allows for the interactive use of the application.

1. Interactive Map

   The interactive map allows users to identify the locations and the types of the filtered courts. Users can click a court, indicated by a marker, for further information about its caseload. The map is loaded from the web, and this is the only feature that requires an internet connection. Otherwise the map won't appear, although all the data are still visible.

2. Filter Panel

   The draggable filter panel is located on the left side of the map under the tab "Interactive Map". It allows users to filter for courts with more than the selected number of pending cases in the selected time frame. Users can also examine specific types of courts by checking or unchecking the boxes that indicate each type.

3. Court Data Tab

   This is where the filtered courts' detailed information is presented in a table format. It displays pending cases, clearance rate (Case Outflow / Case Inflow), disposition rate (Case outflow divided by the sum of pending cases at the beginning of the time frame and case inflow), and the last submission date (which is also random). Users can go to the specific court by clicking the "scale" image on the far right.

4. Reports

   Two types of reports are generated; one is a summary of the filtered courts in a table format, and the other is a detailed report of the selected courts. To see the

detailed report, simply select the courts under the "Court Data" Tab and click "Detailed Report" under the "Interactive Map" Tab.

Application Structure

The current version of the application is not web-based and exists as a stand-alone application. It comes in a folder named *OCA_app_v1.0* (which can be renamed), which has the following files:

1) app.R

- This is the most important file, as it is the code that users need to open using RStudio and run (Click Run App Button right above the code on the right). It tells what to show to users (through the UI part) and what to do with the given interaction (through the Server part). Make sure to understand how a Shiny app works before examining the code.

2) court_data_app_v1.0.RData

- This is the dataset. For Stata users, this is equivalent to a .dta file. The app looks for and loads this dataset, which is a data frame called *data*. This data frame will be discussed extensively in the following sections.

3) gomap.JavaScript

- This javascript file is used to go to the specific court when a "balance" button under the Court Data Tab is clicked.

4) OCA_report.Rmd

- This R Markdown file receives a dataset and prints it in a summary format. Users can change the content of the report in this file.

5) OCA_report_detail.Rmd

- This R Markdown file receives a dataset and provides detailed information about the courts using graphs. Users can change the content of the detailed report in this file.

Features

The application has the following features:

1. It filters for courts using the number of pending cases and the court types.
2. It displays pending cases at the end of each of the last twelve months from the last submission date.
3. It displays the summary information of the filtered courts in the Court Data tab.
4. It displays information about a clicked court on a pop-up window.
5. It generates a summary report of filtered courts and a detailed report of selected courts from the data table under the Court Data tab.
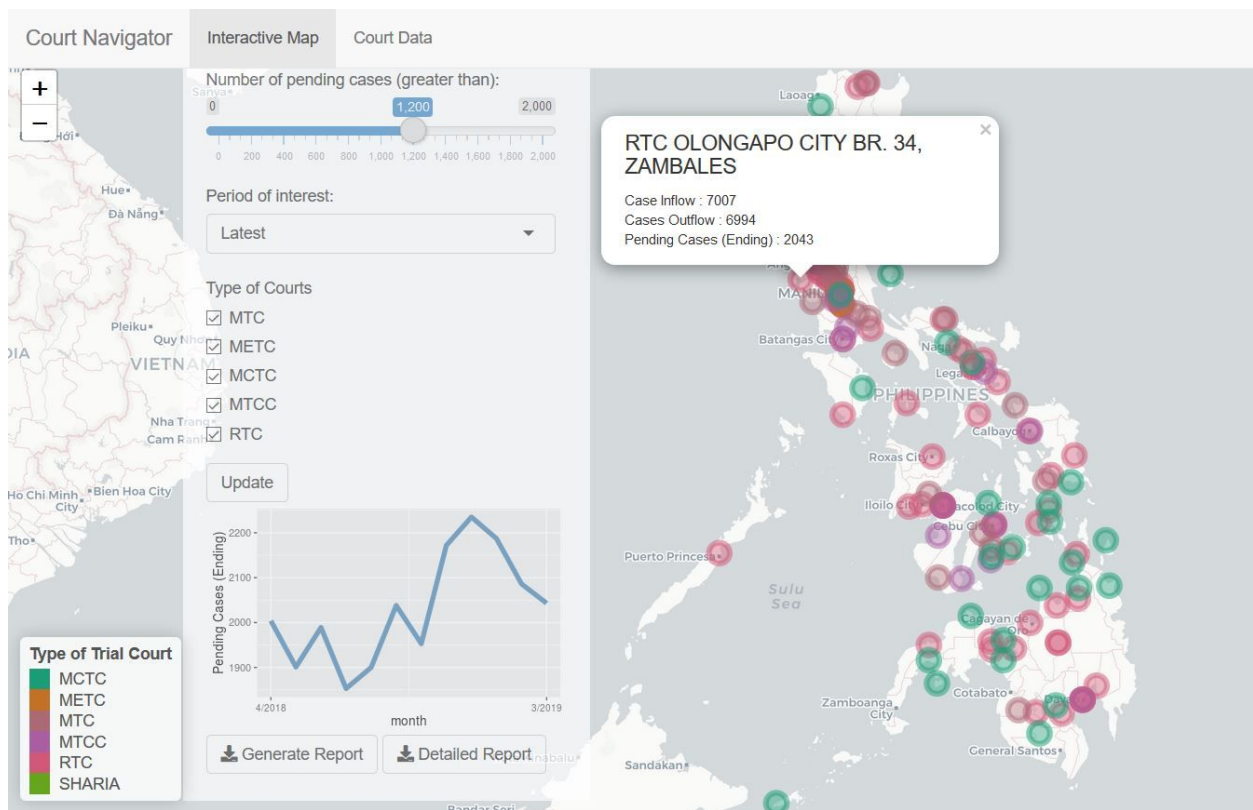
Data

Generating Data

The Philippine lower-level court locations are available in the Supreme Court Office of the Court Administrator website. I randomly generated the numbers of pending cases at the beginning and the end of each month and the case outflow values for each month from 2013 to 2019. The initial values were generated using the normal distribution, but the subsequent values follow an AR(1) model with $\delta = 0.8$. After generation of all the values, they were rounded to integers, and the negative values were assigned zero. The case inflow values are then obtained as the following equality holds: Case Inflow = Pending Ending - Pending Beginning + Case Outflow. The final data resembles the actual caseflow data in a way. I did not include the code that generates the data to reassure confidentiality. The dataset is stored in "generated_data.RData".

Understanding Data

The dataset contains most of the lower-level courts of the Philippines, although the branch numbers are randomly generated to further de-identify courts. Included are five types of courts, which are:

1. MTC (Municipal Trial Court)
2. METC (Metropolitan Trial Court)
3. MCTC (Municipal Circuit Trial Court)
4. MTCC (Municipal Trial Court in Cities)
5. RTC (Regional Trial Court)

Knowing the differences between these court types is outside the ambit of understanding this application, but the user can still filter courts using the court types above.