CLIK hands-on (part III):
Data Processing for CLIK
(http://clik.apcc21.org)

Daeun Jeong
17 October 2018
What if you want to know a forecast information at a specific point?

The grid size of the MME is 2.5° by 2.5°.
CLIK provides “downscaling”.

CLIK adopts the relationships between forecast (by dynamical models) and station data.

“Post-Processing of forecast data”
Downscaling by CLIK

**Input**
- Forecast data by dynamical models (built-in)
- Station data

**Output**
- Downscaled forecast of a station where you are interested (deterministic forecast)

**Data processing and downscaling!**

- Forecast skill (correlation coefficient)
- Linear regression maps

http://clik.apcc21.org
Target station: Busan
Data Processing

Step 1. Prepare input data

- **Metadata**
  - Busan_meta.txt

- **Observation data**
  - Busan_prec.txt

- **Station information**

- **Station data itself**
Data Processing

**Step 1. Prepare input data**

- **Metadata**
  - Busan_meta.txt

- **Observation data**
  - Busan_prec.txt

### Metadata

<table>
<thead>
<tr>
<th>Name</th>
<th>Station_id</th>
<th>WMO_id</th>
<th>Latitude</th>
<th>Longitude</th>
<th>Undefined</th>
<th>Public</th>
</tr>
</thead>
<tbody>
<tr>
<td>Busan</td>
<td>159</td>
<td>-35.1047</td>
<td>129.032</td>
<td>-999.0</td>
<td>True</td>
<td></td>
</tr>
</tbody>
</table>

- **Name**: name of the station
- **Station_id**: unique id for the station (integer)
- **WMO_id**: WMO_id for station (integer, any number)
- **Latitude**: latitude for this station (float, for mapping)
- **Longitude**: longitude for this station (float, for mapping)
- **Undefined**: missing data (numeric)
- **Public**: true if your data can be used by others, and false if your data can not be used by others
Data Processing

Step 1. Prepare input data

- Metadata
  - Busan_meta.txt

- Observation data
  - Busan_prec.txt

- Use notepad.
- Data should be delimited by comma (,), space ( ), tab ( ), or colon (:).

"tab"
Data Processing

Step 1. Prepare input data

- Use notepad.
- Copy and paste the data from EXCEL to Notepad.
- One year per row.
- Data should be delimited by comma (,), space ( ), tab ( ), or colon (:).
## Data Processing

### Step 2. Upload data to CLIK

![Select Dataset / Station](http://clik.apcc21.org)

### Datasets

<table>
<thead>
<tr>
<th>Dataset Name</th>
<th>Countries</th>
<th>Total Stations</th>
<th>Period(prec)</th>
<th>Period(temp)</th>
<th>Public</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCDW(Monthly Climatic Data for th...</td>
<td>The World</td>
<td>6463</td>
<td>1998 - 2014</td>
<td>1998 - 2014</td>
<td>PUBLIC</td>
</tr>
<tr>
<td>Korea 50 Stallions</td>
<td>Korea, Republic of</td>
<td>60</td>
<td>1973 - 2008</td>
<td>1973 - 2006</td>
<td>PUBLIC</td>
</tr>
<tr>
<td>GHCN</td>
<td>GHCN</td>
<td>3707</td>
<td>1950 - 2009</td>
<td>N/A</td>
<td>PUBLIC</td>
</tr>
</tbody>
</table>

[Create button highlighted]
Data Processing

Step 2. Upload data to CLIK

Select Dataset / Station

<table>
<thead>
<tr>
<th>Dataset Name</th>
<th>Countries</th>
<th>Total Stations</th>
<th>Period(prec)</th>
<th>Period(temp)</th>
<th>Public</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCDW(Monthly Climatic Data for th...</td>
<td>The World</td>
<td>6463</td>
<td>1996 ~ 2014</td>
<td>1996 ~ 2014</td>
<td>PUBLIC</td>
</tr>
<tr>
<td>Korea 50 Stations</td>
<td>Korea, Republic of</td>
<td>60</td>
<td>1973 ~ 2008</td>
<td>1973 ~ 2006</td>
<td>PUBLIC</td>
</tr>
<tr>
<td>GHCN</td>
<td>GHCN</td>
<td>3707</td>
<td>1980 ~ 2009</td>
<td>N/A</td>
<td>PUBLIC</td>
</tr>
</tbody>
</table>

New dataset

Name: Korea 1 station
Description: Korea 1 station

Create Dataset
Data Processing

Step 2. Upload data to CLIK

<table>
<thead>
<tr>
<th>Dataset Name</th>
<th>Countries</th>
<th>Total Stations</th>
<th>Period(prec)</th>
<th>Period(temp)</th>
<th>Public</th>
</tr>
</thead>
<tbody>
<tr>
<td>Korea 50 Stations</td>
<td>Korea, Republic of</td>
<td>60</td>
<td>1973 ~ 2008</td>
<td>1973 ~ 2006</td>
<td>PUBLIC</td>
</tr>
<tr>
<td>Korea 1 station</td>
<td></td>
<td>0</td>
<td>N/A</td>
<td>N/A</td>
<td>apcc</td>
</tr>
<tr>
<td>GHCN</td>
<td>GHCN</td>
<td>3707</td>
<td>1950 ~ 2009</td>
<td>N/A</td>
<td>PUBLIC</td>
</tr>
</tbody>
</table>
Data Processing

Step 2. Upload data to CLIK

<table>
<thead>
<tr>
<th>Datasets</th>
<th>Countries</th>
<th>Total Stations</th>
<th>Period(prec)</th>
<th>Period(temp)</th>
<th>Public</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCDW(Monthly Climatic Data for the...)</td>
<td>The World</td>
<td>6463</td>
<td>1998 - 2014</td>
<td>1998 - 2014</td>
<td>PUBLIC</td>
</tr>
<tr>
<td>Korea 50 Stations</td>
<td>Korea, Republic of</td>
<td>60</td>
<td>1973 - 2008</td>
<td>1973 - 2006</td>
<td>PUBLIC</td>
</tr>
<tr>
<td>Korea 1 station</td>
<td></td>
<td>0</td>
<td>N/A</td>
<td>N/A</td>
<td>apcc</td>
</tr>
<tr>
<td>GHCN</td>
<td>GHCN</td>
<td>3707</td>
<td>1950 - 2009</td>
<td>N/A</td>
<td>PUBLIC</td>
</tr>
</tbody>
</table>

Select Dataset / Station

Create  Edit  Remove
Step 2. Upload data to CLIK

1. Metadata
2. Observation data
Data Processing

Step 2. Upload data to CLIK

<table>
<thead>
<tr>
<th>Station ID</th>
<th>Country</th>
<th>NAME</th>
<th>WMO ID</th>
<th>Latitude</th>
<th>Longitude</th>
<th>Undefined</th>
</tr>
</thead>
</table>

No data available

Showing 0 to 0 of 0 entries

Field separator:
- Comma (,)
- Space
- Tab
- Colon (:)

Country:
- Select Country

Station information file (example):
- Select File

Data

<table>
<thead>
<tr>
<th>Year</th>
<th>Variable</th>
<th>Unit</th>
<th>JAN</th>
<th>FEB</th>
<th>MAR</th>
<th>APR</th>
<th>MAY</th>
<th>JUN</th>
<th>JUL</th>
<th>AUG</th>
<th>SEP</th>
<th>OCT</th>
<th>NOV</th>
<th>DEC</th>
</tr>
</thead>
</table>

No data available

Showing 0 to 0 of 0 entries

Upload | Export | Insert | Modify

Close
Data Processing

Step 2. Upload data to CLIK

1. Metadata

- Field separator: Comma ( ), Space ( ), Tab ( ), Colon ( : )
- Country: Korea, Republic of
- Station information file (example): Select File, Busan_meta.txt

Select and upload the station information file to complete the metadata.
Data Processing

Step 2. Upload data to CLIK

1. Metadata
Data Processing

Step 2. Upload data to CLIK

### Stations [Dataset: Korea 1 station]

<table>
<thead>
<tr>
<th>Station ID</th>
<th>Country</th>
<th>NAME</th>
<th>WMO ID</th>
<th>Latitude</th>
<th>Longitude</th>
<th>Undefined</th>
</tr>
</thead>
<tbody>
<tr>
<td>159</td>
<td>Korea, Republic of</td>
<td>Busan</td>
<td>-</td>
<td>35.1047</td>
<td>129.032</td>
<td>-999</td>
</tr>
</tbody>
</table>

Field separator: Comma(,)  Space( )  Tab( )  Colon( :)

Field: Country

Select Country: [Select Country]

Station information file (example): [Select File...]

**Upload**  [Busan_meta.txt]

### Data

<table>
<thead>
<tr>
<th>Year</th>
<th>Variable</th>
<th>Unit</th>
<th>JAN</th>
<th>FEB</th>
<th>MAR</th>
<th>APR</th>
<th>MAY</th>
<th>JUN</th>
<th>JUL</th>
<th>AUG</th>
<th>SEP</th>
<th>OCT</th>
<th>NOV</th>
<th>DEC</th>
</tr>
</thead>
</table>

No data available

**Upload**  [Export]  [Insert]  [Modify]
Data Processing

Step 2. Upload data to CLIK

1. Metadata

   Stations [Dataset: Korea 1 station]

   Station ID | Country | NAME | WMO ID | Latitude | Longitude | Undefined
   --- | --- | --- | --- | --- | --- | ---
   159 | Korea, Republic of | Busan | - | 35.1047 | 129.032 | -999

   Showing 1 to 1 of 1 entries

   Field separator
   - Comma (,) - Space () - Tab () - Colon (:)

   Country
   - Select Country

   Station information file (example)
   - Select File...
   - Busan_meta.txt

   Upload

2. Observation data

   Data [Station ID: 159]

   Year | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC
   --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ---
   No data available

   Showing 0 to 0 of 0 entries

   Upload

   Close
Data Processing

Step 2. Upload data to CLIK

1. Metadata

2. Observation data
Data Processing

Step 2. Upload data to CLIK

1. Metadata

2. Observation data
Data Processing

Step 2. Upload data to CLIK

1. Metadata

2. Observation data
Data Processing

Step 2. Upload data to CLIK

1. Metadata

2. Observation data
Data Processing

Step 2. Upload data to CLIK
Data Processing

Step 2. Upload data to CLIK

http://clik.apcc21.org
Data Processing

Step 2. Upload data to CLIK

Select Dataset / Station

<table>
<thead>
<tr>
<th>Datasets</th>
<th>Dataset Name</th>
<th>Countries</th>
<th>Total Stations</th>
<th>Period(temp)</th>
<th>Period(temp)</th>
<th>Public</th>
</tr>
</thead>
<tbody>
<tr>
<td>Korea 1 station</td>
<td>Korea, Republic of</td>
<td>1</td>
<td>1960 – 2017</td>
<td>N/A</td>
<td>NC</td>
<td></td>
</tr>
<tr>
<td>GHCN</td>
<td>GHCN</td>
<td>3707</td>
<td>1950 – 2009</td>
<td>N/A</td>
<td>PUBLIC</td>
<td></td>
</tr>
</tbody>
</table>

Stations (1)

<table>
<thead>
<tr>
<th>Station ID</th>
<th>Name</th>
<th>Precipitation</th>
<th>Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>105</td>
<td>Busan</td>
<td>1950/1 – 2017/12</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Step 2. Upload data to CLIK

Example error 1
## Data Processing

### Step 2. Upload data to CLIK

<table>
<thead>
<tr>
<th>station_id</th>
<th>year</th>
<th>jan</th>
<th>feb</th>
<th>mar</th>
<th>apr</th>
<th>may</th>
<th>jun</th>
<th>jul</th>
<th>aug</th>
<th>sep</th>
<th>oct</th>
<th>nov</th>
<th>dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>159</td>
<td>1973</td>
<td>84.7</td>
<td>43.7</td>
<td>13.1</td>
<td>126.9</td>
<td>-999</td>
<td>53.3</td>
<td>17.2</td>
<td>239.2</td>
<td>119.5</td>
<td>41.1</td>
<td>2.9</td>
<td></td>
</tr>
<tr>
<td>159</td>
<td>1974</td>
<td>43</td>
<td>41.8</td>
<td>90.9</td>
<td>234.5</td>
<td>371.3</td>
<td>231.5</td>
<td>442.4</td>
<td>75.4</td>
<td>16.6</td>
<td>108.2</td>
<td>14.3</td>
<td>28.1</td>
</tr>
<tr>
<td>159</td>
<td>1975</td>
<td>31.1</td>
<td>17.9</td>
<td>93.3</td>
<td>243.9</td>
<td>180.5</td>
<td>135.4</td>
<td>253.8</td>
<td>79.1</td>
<td>270.8</td>
<td>57.2</td>
<td>130.2</td>
<td>42.9</td>
</tr>
<tr>
<td>159</td>
<td>1976</td>
<td>0.7</td>
<td>103.1</td>
<td>68.5</td>
<td>220.5</td>
<td>93.6</td>
<td>100.8</td>
<td>95</td>
<td>175</td>
<td>58.7</td>
<td>68.8</td>
<td>31.9</td>
<td>35.3</td>
</tr>
<tr>
<td>159</td>
<td>1977</td>
<td>3.9</td>
<td>0</td>
<td>106.9</td>
<td>275.2</td>
<td>124.1</td>
<td>169.1</td>
<td>112.4</td>
<td>66</td>
<td>97.6</td>
<td>23.5</td>
<td>129.4</td>
<td>34.1</td>
</tr>
</tbody>
</table>

**Example error 2**

Failed Observed Data Upload: Error updating database. Cause:
java.sql.SQLException: Data truncated for column 'may' at row 2

The error may involve:
org.apcc21.clik.server.service.insert_station_obs_data_no_station

The error occurred while setting parameters
Cause:
java.sql.SQLException: Data truncated for column 'may' at row 2
**Exercise**

Upload your station data!

1. Click on “Create” button.

2. Describe the dataset.

3. Click on “Edit” button.

4. Upload two data files; metadata and observation data.
Thank you!