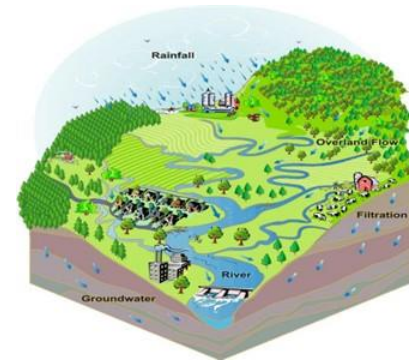
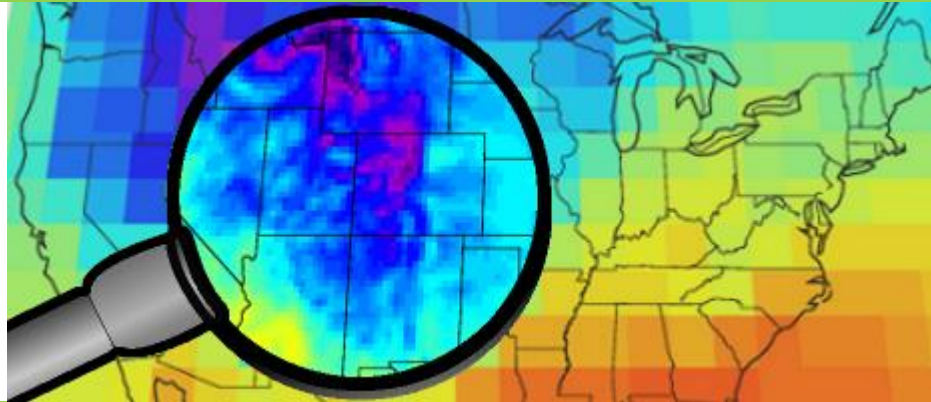
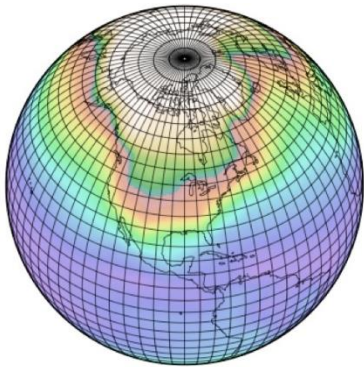




# Downscaling of Seasonal Forecast Data Using *rSForecast* (II): Real-time Forecast



**Jaepil Cho**

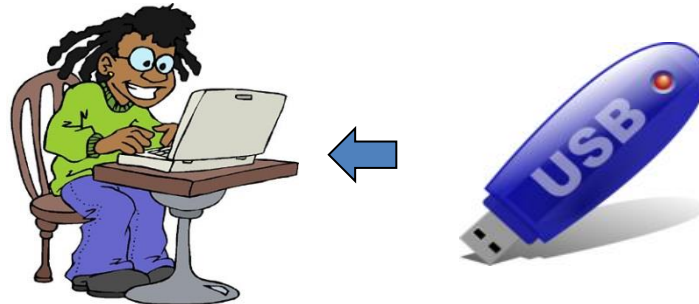
**2016/08/25**

# Hands-on using sforecast (II)

## -Real-time forecast-

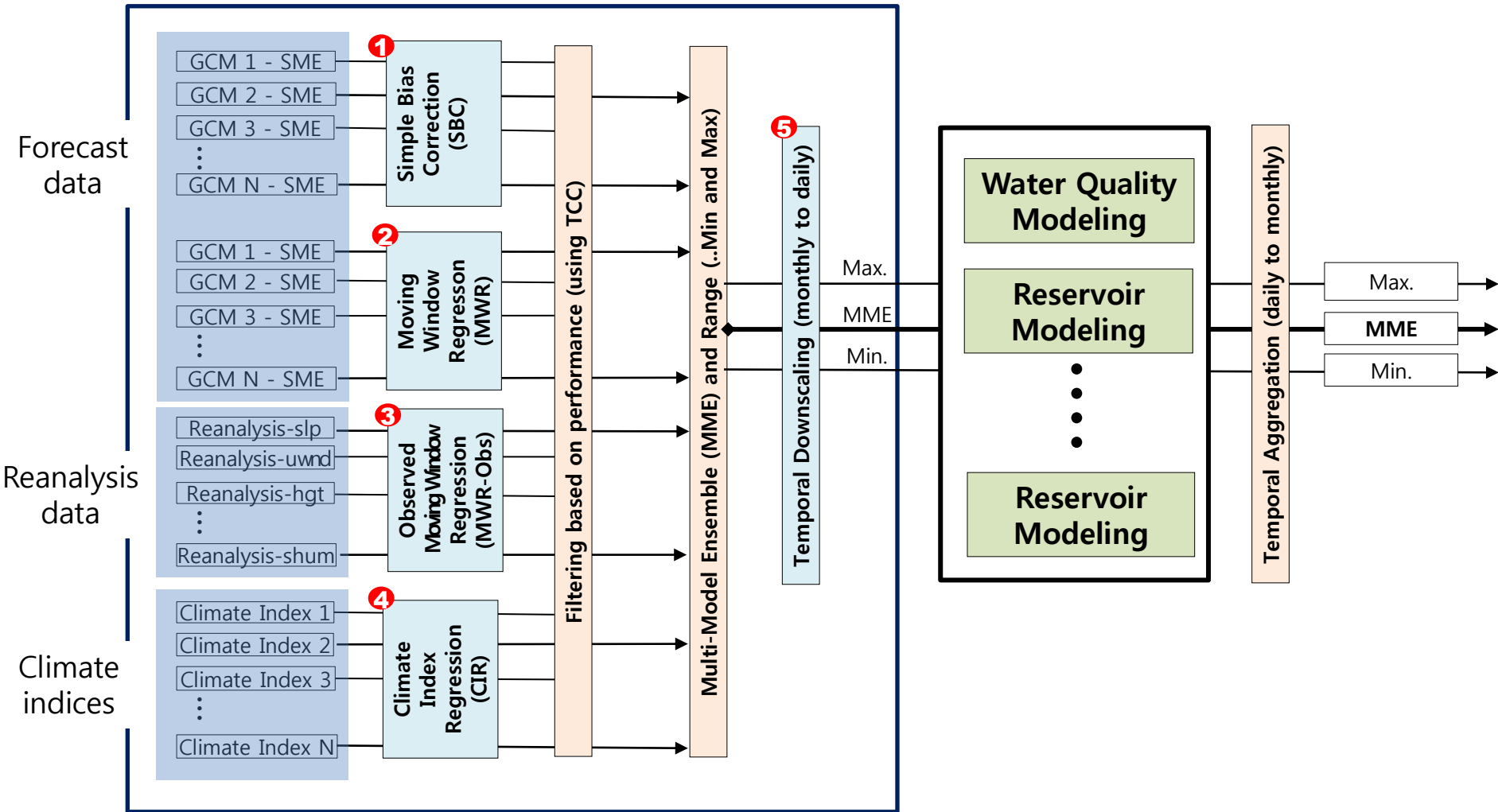
### ❖ Real-Time Seasonal Forecast

1. Set working environment
2. Update climate information
3. Run real-time forecast for 4 different modules
4. Temporal downscaling for model input





# Integrated Downscaling System for Seasonal Prediction



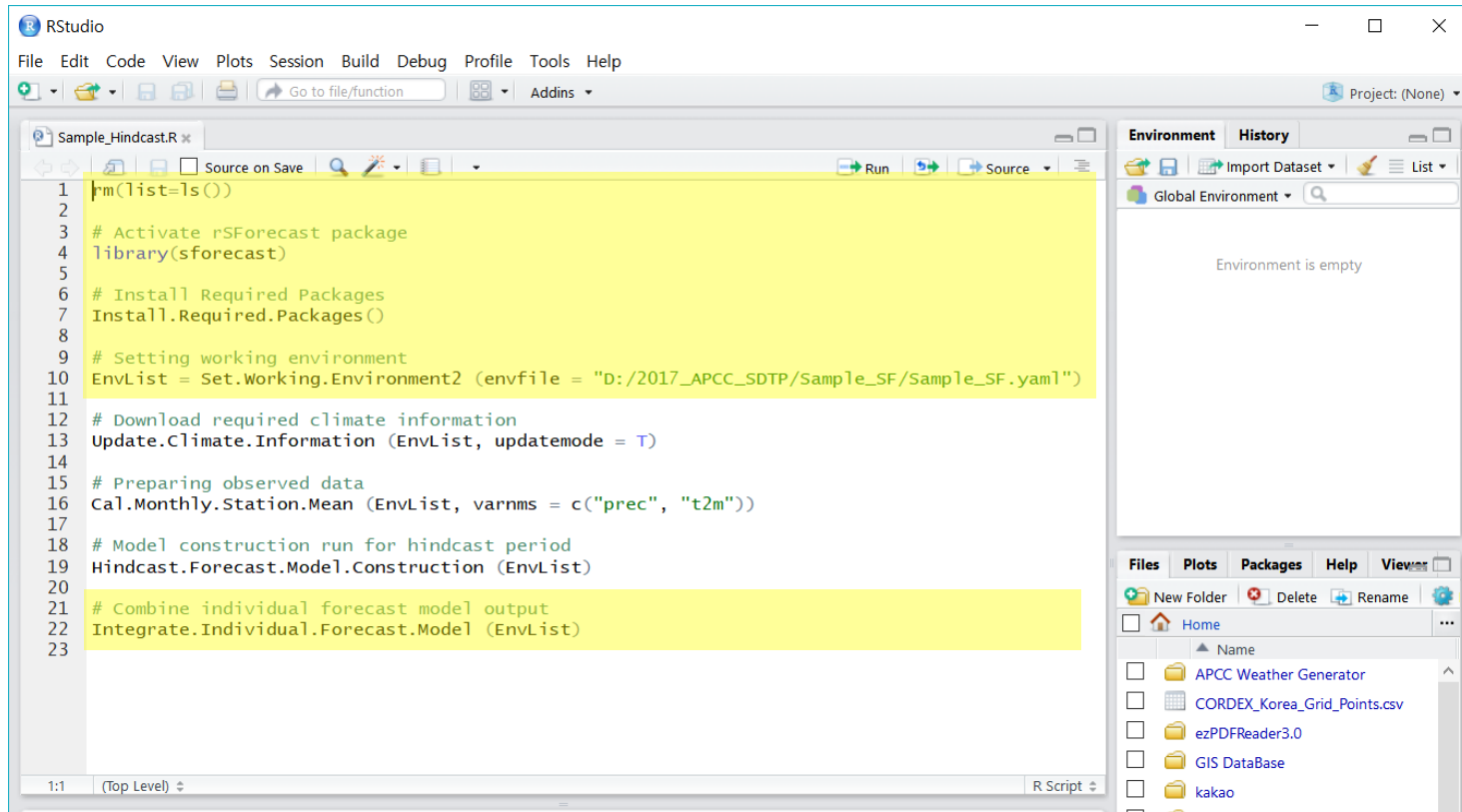
# Integrate individual forecast model

1. Check the outputs under **[SForecast\_Practice]** folder

## Show Your Results!

# Integrate individual forecast model (Hindcast)

1. Open Sample\_Hindcast.R in [**Sample\_SF**] folder
2. Run line 1~10 first time and then 22



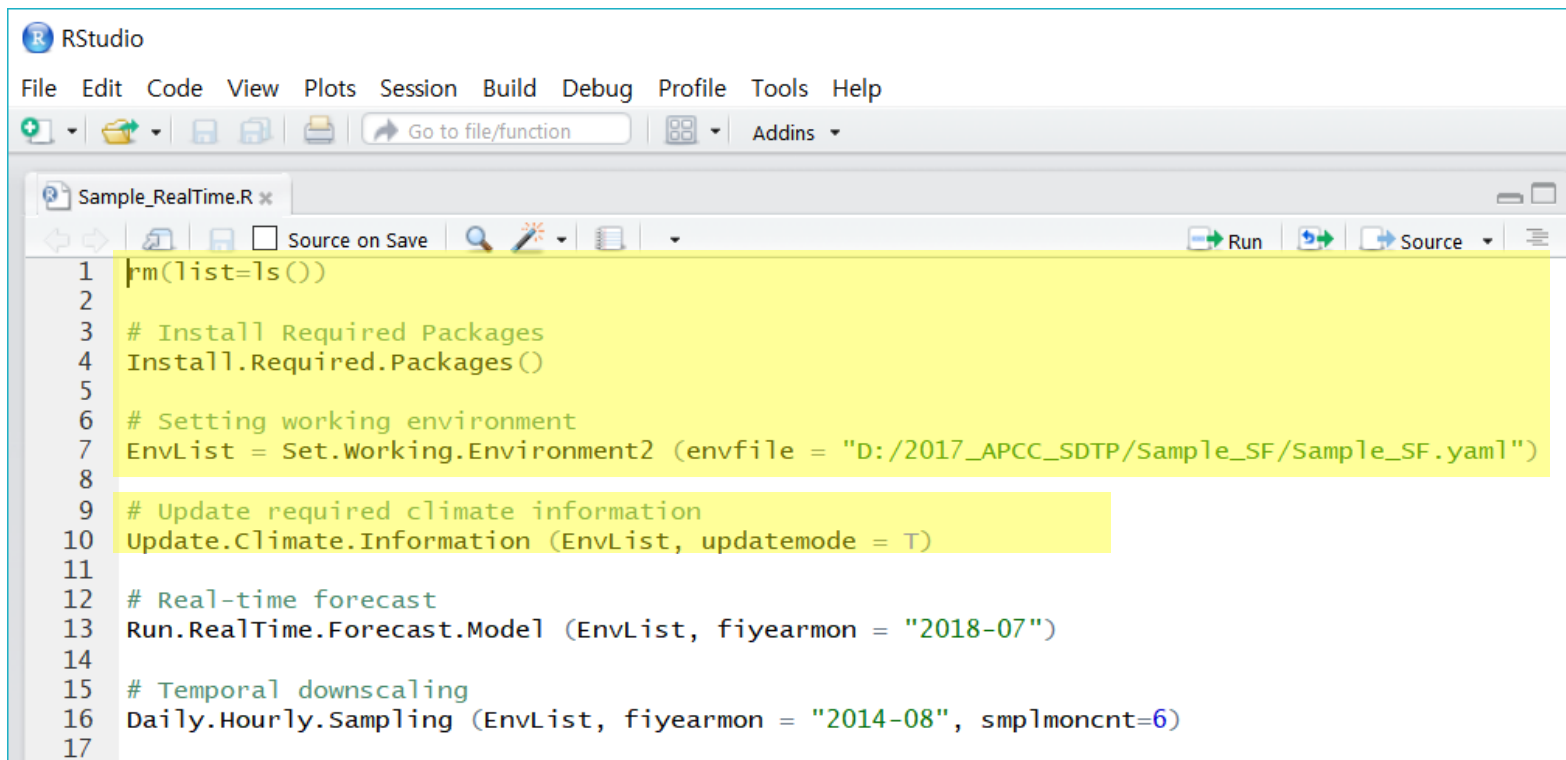
```
1 rm(list=ls())
2
3 # Activate rSForecast package
4 library(sforecast)
5
6 # Install Required Packages
7 Install.Required.Packages()
8
9 # Setting working environment
10 EnvList = Set.Working.Environment2 (envfile = "D:/2017_APCC_SDTP/Sample_SF/Sample_SF.yam1")
11
12 # Download required climate information
13 Update.Climate.Information (EnvList, updatemode = T)
14
15 # Preparing observed data
16 Cal.Monthly.Station.Mean (EnvList, varnms = c("prec", "t2m"))
17
18 # Model construction run for hindcast period
19 Hindcast.Forecast.Model.Construction (EnvList)
20
21 # Combine individual forecast model output
22 Integrate.Individual.Forecast.Model (EnvList)
23
```

The screenshot shows the RStudio interface. The main editor window displays the R script 'Sample\_Hindcast.R' with lines 1 through 23. Lines 1-10 and 21-22 are highlighted in yellow. The Environment pane on the right shows 'Global Environment' and 'Environment is empty'. The Files pane at the bottom right shows a file explorer view with folders like 'APCC Weather Generator', 'CORDEX\_Korea\_Grid\_Points.csv', 'ezPDFReader3.0', 'GIS DataBase', and 'kakao'.

➔ Check output files under [**Sample\_SF/0\_Analysis**] folder

# Update Climate Information

1. Open Sample RealTime.R in [**Sample\_SF**] folder
2. Run line 1~7 first time and then 10



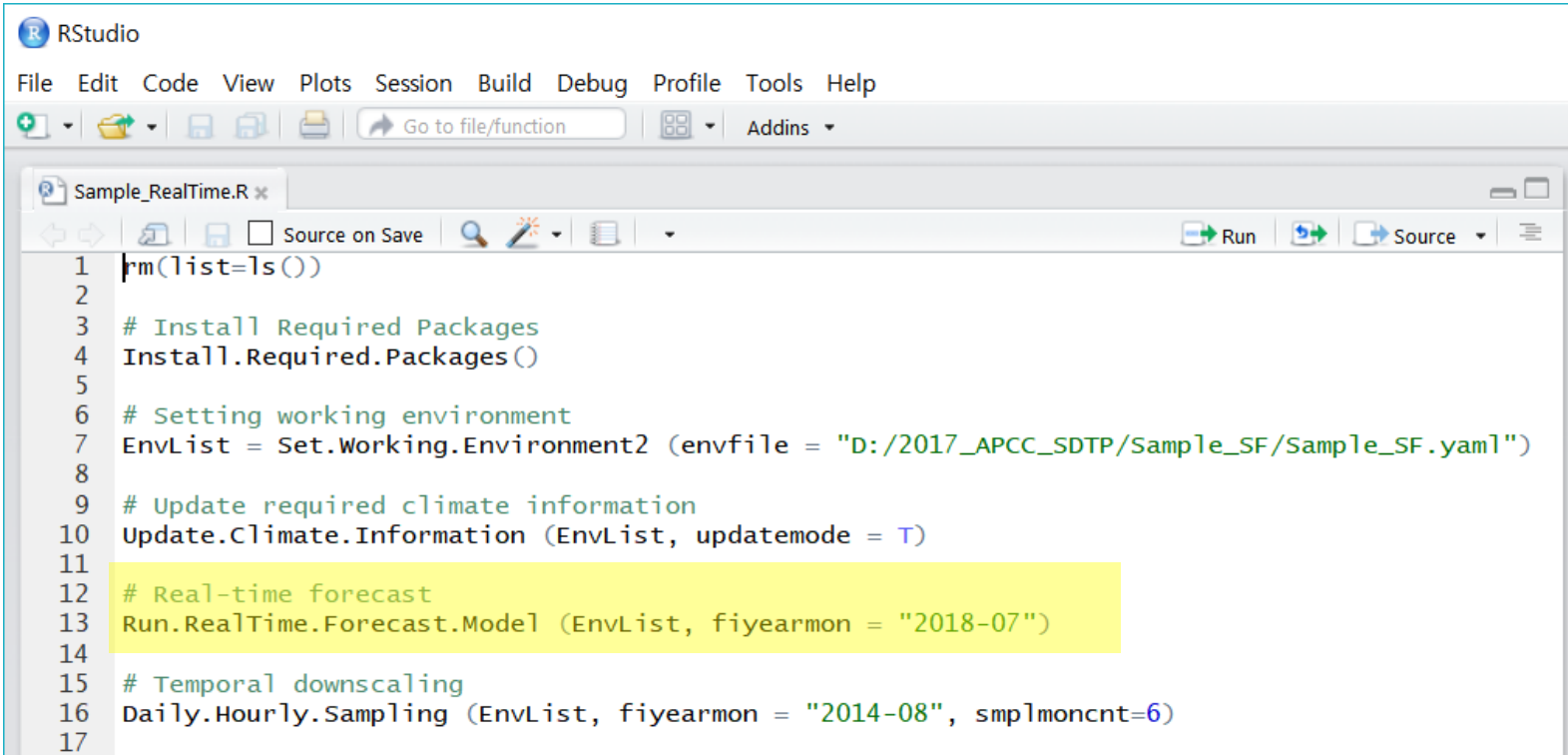
```

RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
+ - [Folder Icon] [Save Icon] [Print Icon] Go to file/function [Addins]
Sample_RealTime.R x
Source on Save [Run] [Source]
1 rm(list=ls())
2
3 # Install Required Packages
4 Install.Required.Packages()
5
6 # Setting working environment
7 EnvList = Set.Working.Environment2 (envfile = "D:/2017_APCC_SDTP/Sample_SF/Sample_SF.yaml")
8
9 # Update required climate information
10 Update.Climate.Information (EnvList, updatemode = T)
11
12 # Real-time forecast
13 Run.RealTime.Forecast.Model (EnvList, fiyearmon = "2018-07")
14
15 # Temporal downscaling
16 Daily.Hourly.Sampling (EnvList, fiyearmon = "2014-08", smp1moncnt=6)
17
  
```

➡ Check [**Database**] folder

# Run Real-time Forecast Model

1. Open Sample RealTime.R in **[Sample\_SF]** folder
2. Run line 14



The screenshot shows the RStudio interface with the following R code in the editor:

```
1 rm(list=ls())
2
3 # Install Required Packages
4 Install.Required.Packages()
5
6 # Setting working environment
7 EnvList = Set.Working.Environment2 (envfile = "D:/2017_APCC_SDTP/Sample_SF/Sample_SF.yaml")
8
9 # Update required climate information
10 Update.Climate.Information (EnvList, updatemode = T)
11
12 # Real-time forecast
13 Run.RealTime.Forecast.Model (EnvList, fiyearmon = "2018-07")
14
15 # Temporal downscaling
16 Daily.Hourly.Sampling (EnvList, fiyearmon = "2014-08", smp1moncnt=6)
17
```

The code line 13, `Run.RealTime.Forecast.Model (EnvList, fiyearmon = "2018-07")`, is highlighted in yellow in the original image.

➔ Check **[Database]** folder





# Create ensemble members

❖ combnmode=T

Issuing Month	1 Month	2 Month	3 Month	4 Month	5 Month	6 Month
Selected models	A		가	①		㉠
	B		나			㉡
	C		다			㉢
	D		라			㉣
	E		마 바			

MME  
Max  
Min

X Clim

MME  
Max  
Min

X One

X Clim X

MME  
Max  
Min

= Total 27 members

# Downscaled data can be used for impact assessment

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# Thank You!