Test1

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Default

R Markdown

This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see http://rmarkdown.rstudio.com.

When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```r
summary(cars)
```

```
     speed           dist
 Min.   : 4.0   Min.   :  2.00
 1st Qu.:12.0   1st Qu.: 26.00
 Median :15.0   Median : 36.00
 Mean   :15.4   Mean   : 42.98
 3rd Qu.:19.0   3rd Qu.: 56.00
 Max.   :25.0   Max.   :120.00
```

Including Plots

You can also embed plots, for example:
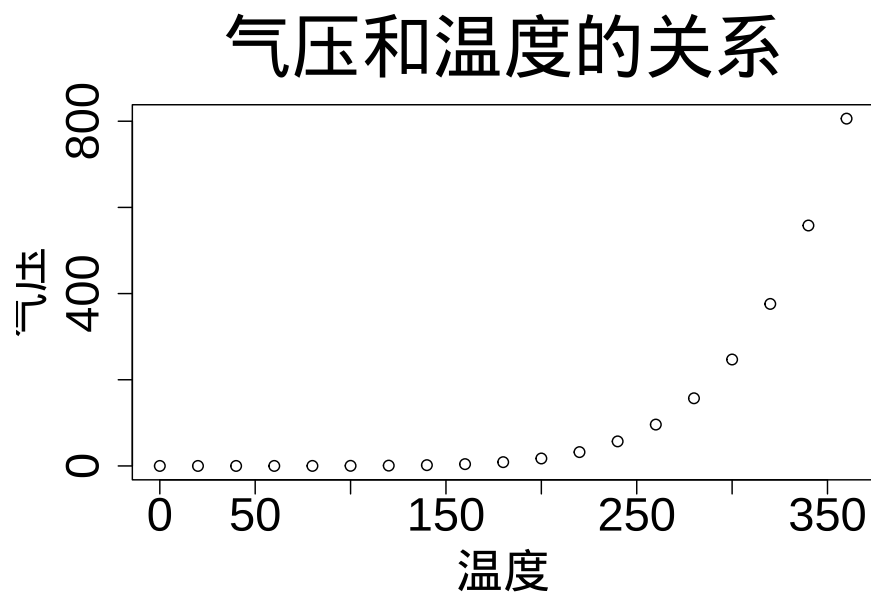
Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.

Learning materials

How to use Rmarkdown

Test: Implement python in Rmd

Use of Library "reticulate"
Yihui-rmarkdown

You can also change the engine interpreters globally for multiple engines, e.g.,

```
knitr::opts_chunk$set(engine.path = list(
  python = '~/anaconda/bin/python',
  ruby = '/usr/local/bin/ruby'
))
```
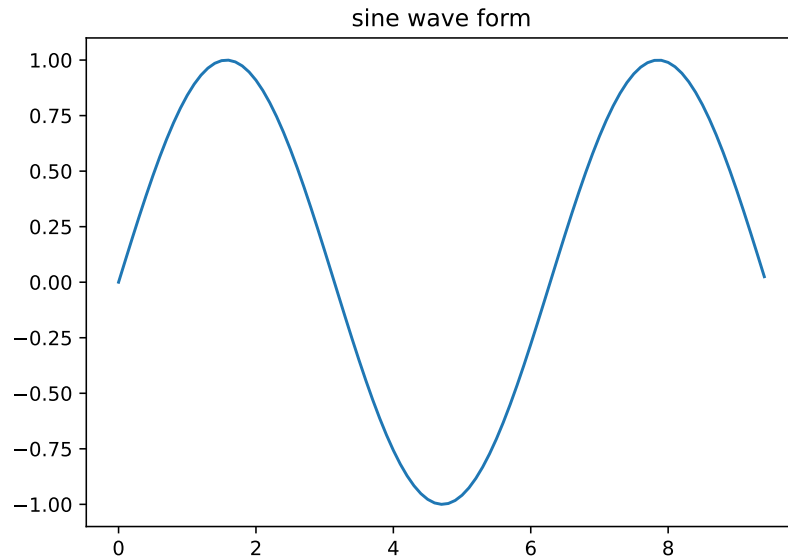
install package:

```
# install.packages("reticulate")
```

introduce library:

```
library(reticulate)
# use_python('C:\\Users\\sustech\\.conda\\envs\\gdalcartopy\\python.exe')
```

run python code:

```
import numpy as np
import matplotlib.pyplot as plt
# 计算正弦曲线上点的 x 和 y 坐标
x = np.arange(0, 3 * np.pi, 0.1)
y = np.sin(x)
plt.title("sine wave form")
# 使用 matplotlib 来绘制点
plt.plot(x, y)
plt.show()
```

sine wave form

call python variable in R code:

```
py$y
```

```
 [1]   0.00000000   0.09983342   0.19866933   0.29552021   0.38941834   0.47942554
 [7]   0.56464247   0.64421769   0.71735609   0.78332691   0.84147098   0.89120736
[13]   0.93203909   0.96355819   0.98544973   0.99749499   0.99957360   0.99166481
[19]   0.97384763   0.94630009   0.90929743   0.86320937   0.80849640   0.74570521
[25]   0.67546318   0.59847214   0.51550137   0.42737988   0.33498815   0.23924933
[31]   0.14112001   0.04158066  -0.05837414  -0.15774569  -0.25554110  -0.35078323
[37]  -0.44252044  -0.52983614  -0.61185789  -0.68776616  -0.75680250  -0.81827711
[43]  -0.87157577  -0.91616594  -0.95160207  -0.97753012  -0.99369100  -0.99992326
[49]  -0.99616461  -0.98245261  -0.95892427  -0.92581468  -0.88345466  -0.83226744
[55]  -0.77276449  -0.70554033  -0.63126664  -0.55068554  -0.46460218  -0.37387666
[61]  -0.27941550  -0.18216250  -0.08308940   0.01681390   0.11654920   0.21511999
[67]   0.31154136   0.40484992   0.49411335   0.57843976   0.65698660   0.72896904
[73]   0.79366786   0.85043662   0.89870810   0.93799998   0.96791967   0.98816823
```

```
[79]   0.99854335   0.99894134   0.98935825   0.96988981   0.94073056   0.90217183
[85]   0.85459891   0.79848711   0.73439710   0.66296923   0.58491719   0.50102086
[91]   0.41211849   0.31909836   0.22288991   0.12445442   0.02477543
```

import python packages in R code:

```r
library(reticulate)
# 导入库
os <- import("os")
#os 库的 listdir 函数
os$listdir()
```

```
[1] ".git"         "docs"          "helloworld.py" "index.Rmd"
[5] "README.md"    "test1.html"    "test1.Rmd"     "test1_files"
[9] "test2.Rmd"
```

PS: 在 R 代码块中执行 Python 代码时，默认会将 Python 对象转为 R 对象。

introduce python variable from .py file in R code:

```r
library(reticulate)
source_python("helloworld.py")
Hello world!
print(A)
[1] "Hello"
print(B)
[1] "world"
paste0(A, B)
[1] "Helloworld"
```

run .py file in R code:

```r
library(reticulate)
py_run_file("helloworld.py")
```

```
Hello world!
```

In-line code

we can run code between text like this: date: 2024-05-14 date: 最近更新日期为 14 五月, 2024

Journal article templates for R markdown

rticles-github

Chinese not showed in PDF

Solution here

in the words

Change output: latex_engine and documentclass like this:

```
title: "中文文档"
documentclass: ctexart
output:
  pdf_document:
    latex_engine: xelatex
```

in the output plot

在 Rmd 正文最开始写上

```
{r setup, include=FALSE}
library(showtext)
showtext_auto()
```

如果不喜欢 showtext 默认的字体，可以自行添加字体

```
{r setup, include=FALSE}
library(showtext)
font_add("simsun", regular = "simsun.ttc")
showtext_auto()
```