

# Exploring "R" Overview of the Statistical Programming Language (EROSPL)

By

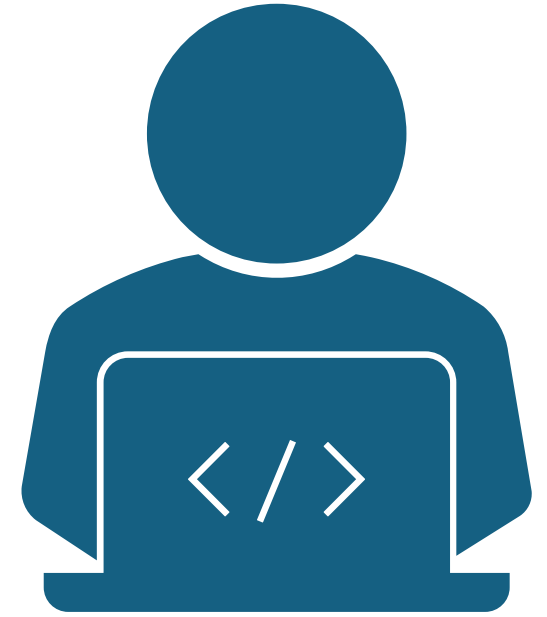
**Yasir Hussein Shakir**

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# What is R

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R is a programming language and environment for statistical analysis and graphical visualization. Originally designed to handle statistical data and exploratory analysis, it was developed in the late 1980s by Ross Ihaka and Robert Gentleman at the University of Auckland, New Zealand.



# Distinguished

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The language R is distinguished by its power to handle complex statistical data and create high-quality graphics. It is used in a variety of fields, including academic research, financial analysis, social sciences, medicine, biology, and more. R provides a wide range of free packages and libraries that facilitate statistical operations and data visualization, making it popular among statisticians and data developers.



# Advantages & Disadvantages

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Advantages	Disadvantages
<b>Open source</b>	High memory consumption
<b>Supportive and active community</b>	Slower execution speed
<b>Powerful statistical analysis</b>	Steep learning curve for beginners
<b>Advanced graphical visualization</b>	Limited graphical user interface



# How to Install R on Windows Operating System

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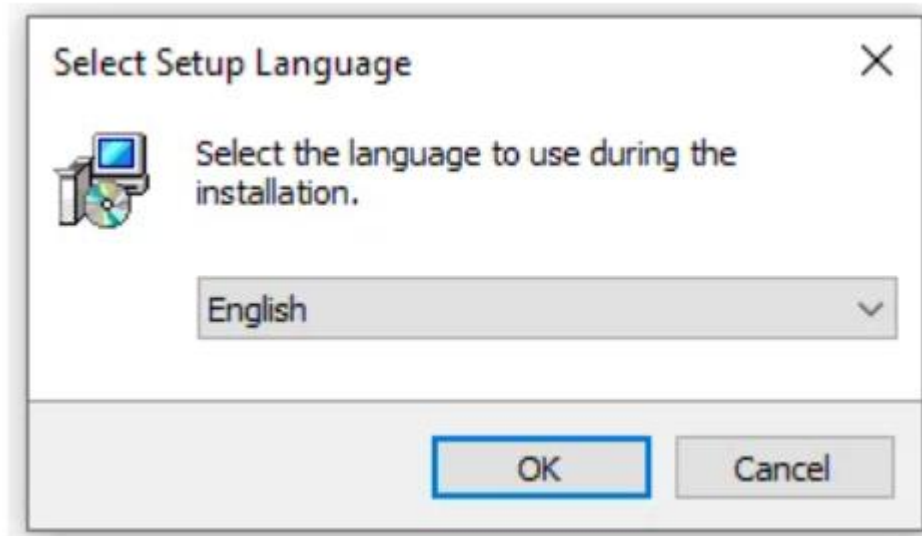
- 1) Visit the CRAN website. (<https://cran.r-project.org/>)
- 2) Choose the option "Download R for Windows".
- 3) Click on the link labeled "install R for the first time" to acquire the R executable (.exe) file.
- 4) Execute the R executable file to initiate the installation process, and grant permission for the application to modify your device.



# How to Install R on Windows Operating System

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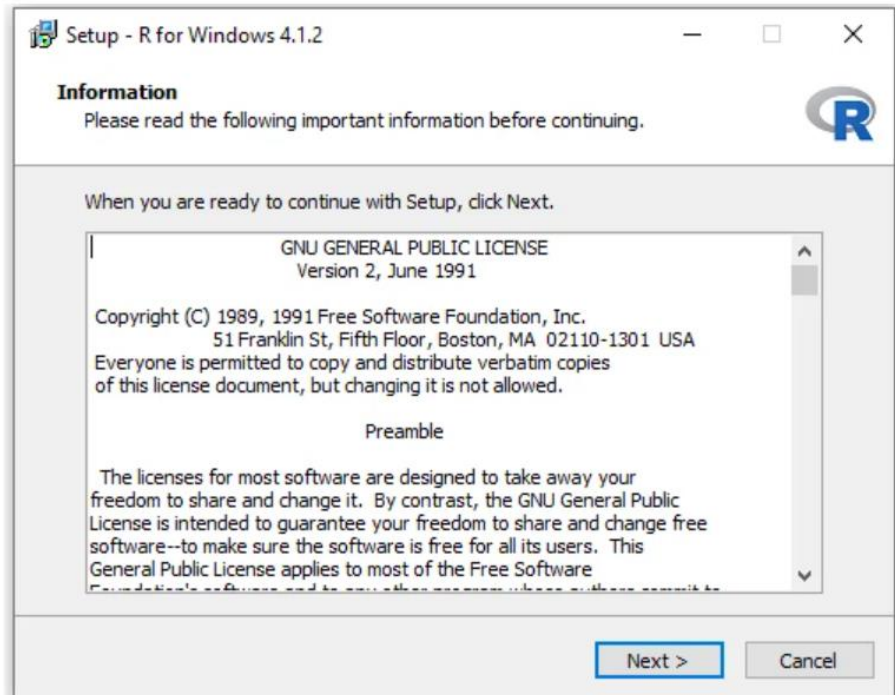
5) Pick your preferred installation language.



# How to Install R on Windows Operating System

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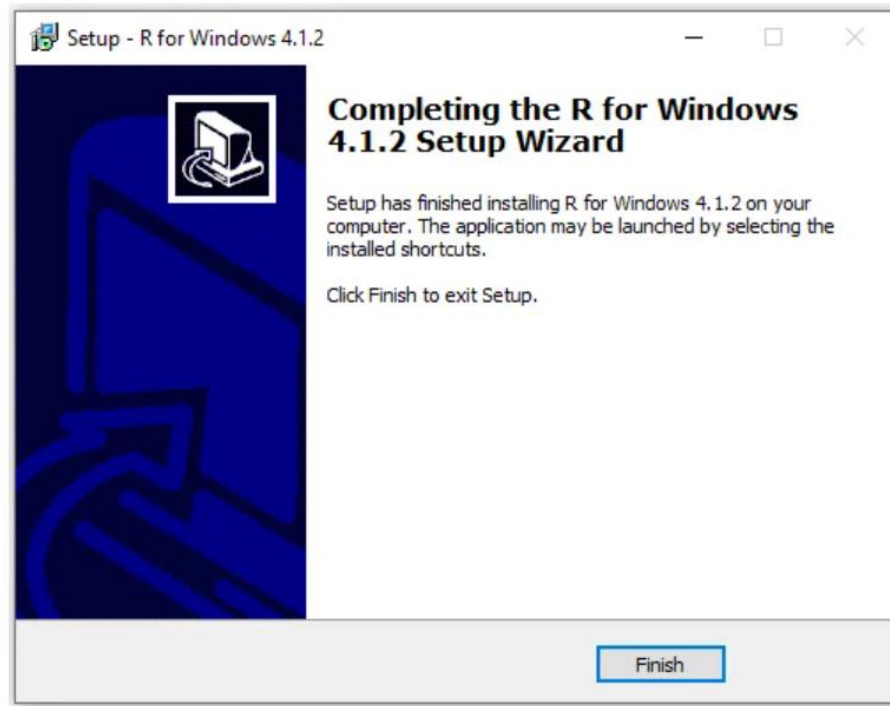
6) Follow up the installation instructions.



# How to Install R on Windows Operating System

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7) Click in "Finish" to exit the installation setup.

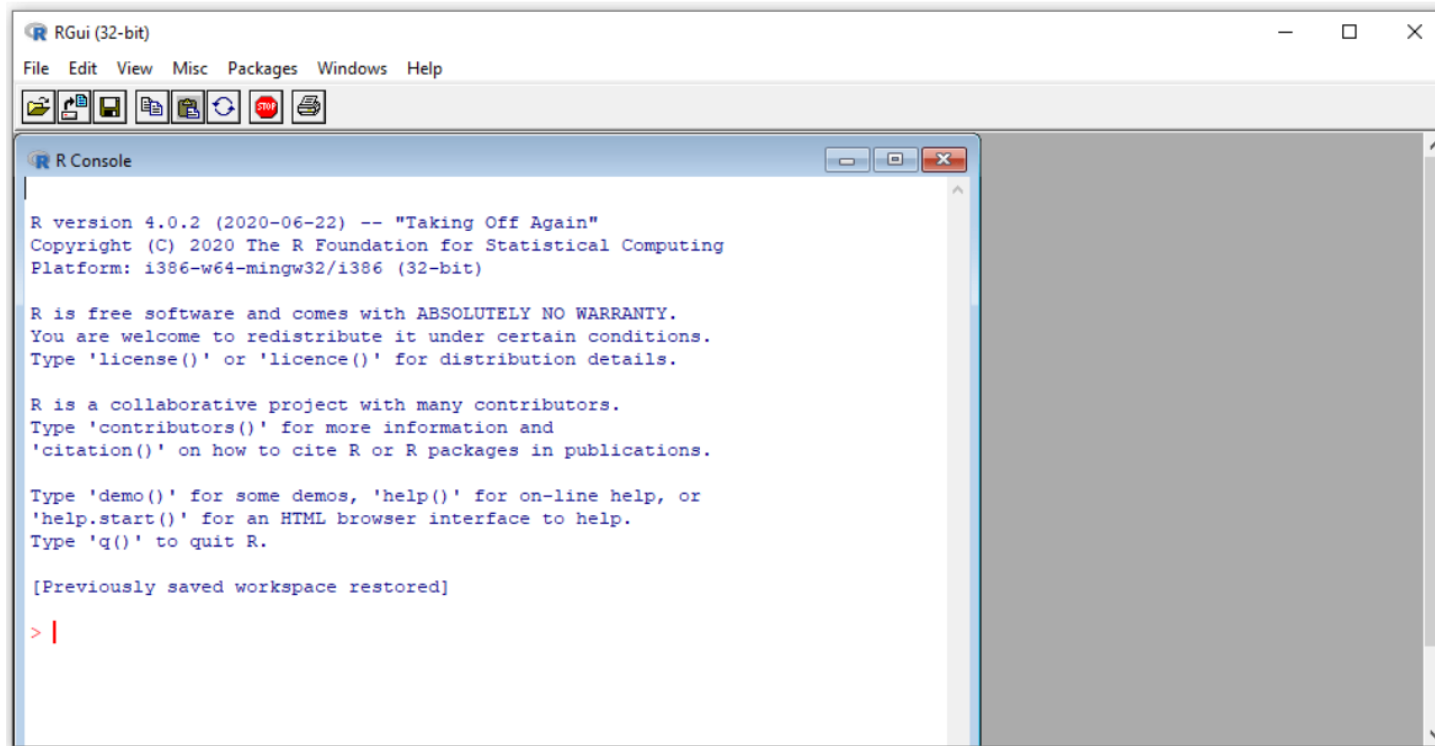




# How to Install R on Windows Operating System

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R has now been successfully installed on your Windows OS. Open the R GUI to start writing R codes.



# How to Installing R Kernel on Jupyter Notebook for Windows OS

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To set up the R kernel on Jupyter Notebook for Windows OS, follow these steps:

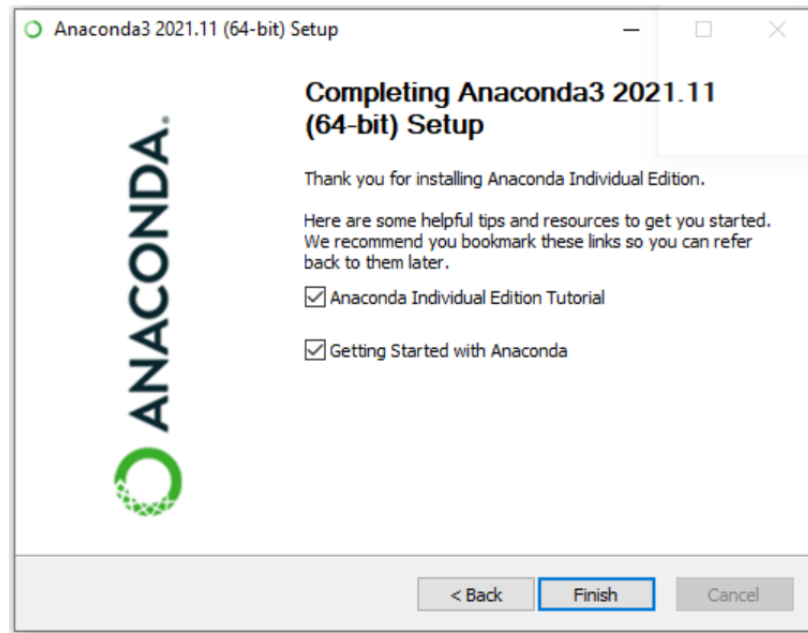
- 1) Download Anaconda.([Distribution | Anaconda](#))
- 2) Execute the downloaded installer.



# How to Installing R Kernel on Jupyter Notebook for Windows OS

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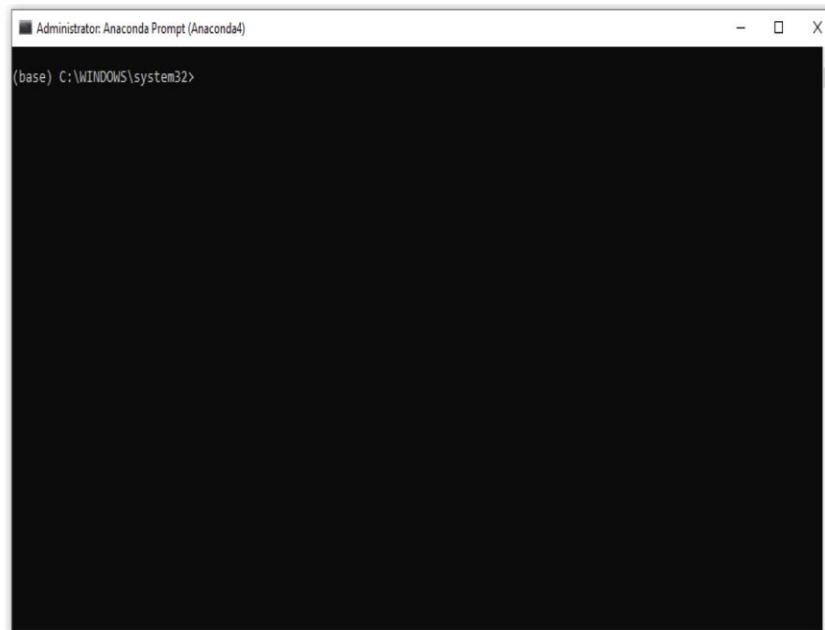
3) Proceed with the installation instructions provided to finalize the installation of the Anaconda distribution.



# How to Installing R Kernel on Jupyter Notebook for Windows OS

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4) Open Anaconda Prompt as Administrator.



# How to Installing R Kernel on Jupyter Notebook for Windows OS

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5) Navigate to the directory where the R.exe file is stored on your computer.

For example, if the directory is

`"C:\Program Files\R\R-4.1.2\bin",`



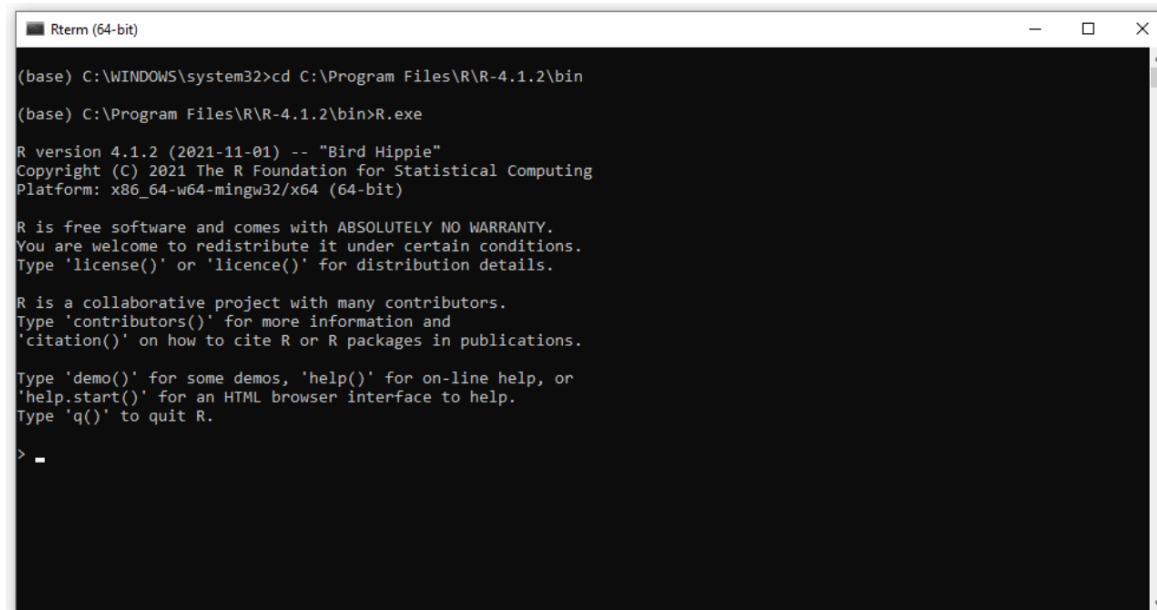
# How to Installing R Kernel on Jupyter Notebook for Windows OS

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6) You can change to that directory using the following command in the Anaconda Prompt:

```
>cd C:\Program Files\R\R-4.1.2\bin
```

```
>R.exe
```



```
Rterm (64-bit)

(base) C:\WINDOWS\system32>cd C:\Program Files\R\R-4.1.2\bin
(base) C:\Program Files\R\R-4.1.2\bin>R.exe

R version 4.1.2 (2021-11-01) -- "Bird Hippie"
Copyright (C) 2021 The R Foundation for Statistical Computing
Platform: x86_64-w64-mingw32/x64 (64-bit)

R is free software and comes with ABSOLUTELY NO WARRANTY.
You are welcome to redistribute it under certain conditions.
Type 'license()' or 'licence()' for distribution details.

R is a collaborative project with many contributors.
Type 'contributors()' for more information and
'citation()' on how to cite R or R packages in publications.

Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

> _
```



# How to Installing R Kernel on Jupyter Notebook for Windows OS

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7) To install the 'devtools' package in R, you can use the following code:

```
> install.packages("devtools")
```



# How to Installing R Kernel on Jupyter Notebook for Windows OS

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8) Install R's IRkernel from GitHub with the following code:

```
devtools::install_github("IRkernel/IRkernel")
```





# How to Installing R Kernel on Jupyter Notebook for Windows OS

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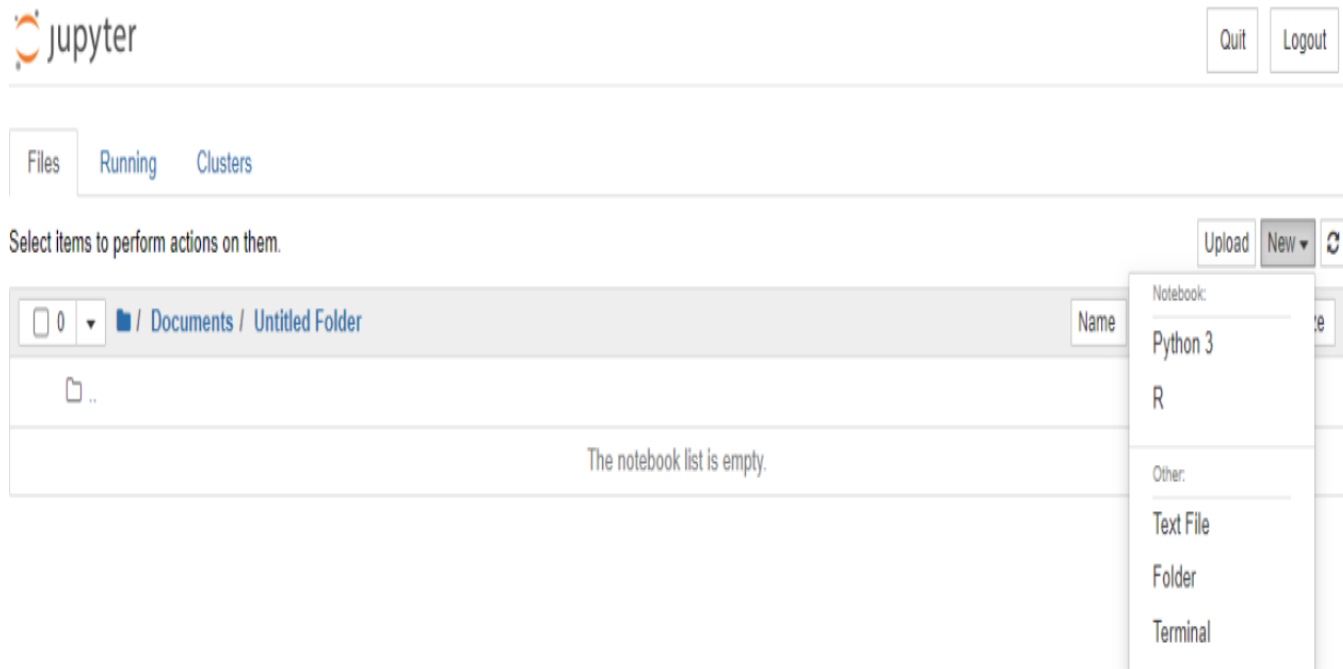
9) Instruct Jupyter Notebook to find the IRkernel with the following code:

```
IRkernel::installspec()
```



# How to Installing R Kernel on Jupyter Notebook for Windows OS

10) Just Open Jupyter Notebook and open a New notebook with the R kernel



# Summary

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In summary, R stands out as a crucial scripting language in the realm of data analytics and data science, renowned for its optimization for statistical analysis and the creation of visually appealing graphics. Its efficiency is further underscored by its capability to execute vectorized operations, rendering it a swift programming language. Moreover, R extends its utility to distributed computing for handling vast datasets and seamlessly interfaces with various databases. Whether through R GUI, Jupyter Notebook, or RStudio, users have multiple platforms for coding in R. Proficiency in R is not only advantageous but often essential for flourishing careers across academia and industry alike



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