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RTutor.ai - Talk to your data via AI

Hosted at RTutor.ai.

No code? No problem. Analyze data with simple, natural language. Upload your data, ask questions, and get results in seconds!

Contact the RTutor team by email, ge@orditus.com, and find Steven Ge on LinkedIn and X.

Video Tutorial

We highly recommend that users watch this 10-minute YouTube video.

Example Report

See this example report generated by RTutor after a typical session. (PDF version: [report.pdf](#), Rmd file: [report.Rmd](#))

What's New

1. Redesigned UI and backend.
2. GPT-4o becomes the default, providing more accurate code.
3. Comprehensive EDA reports.
4. Chat window that helps explain code, result, error messages, and statistics in general. This makes RTutor a great platform for learning R and statistics.

Local Installation

This repository is updated frequently, sometimes a few times a day.
We suggest users reinstall everytime before using it, so that you always have the most recent version.

1. Update R and RStudio to the most recent version.

2. Install the RTutor package

Run this code in RStudio:

```
# Install 'remotes' package
if (!require("remotes")) {
  install.packages("remotes")
}
library(remotes)

# Install 'heyshiny' package, for voice input
install_github("jcrodriguez1989/heyshiny", dependencies = TRUE)

# Install 'RTutor' package
install_github("gexijin/RTutor")
```

3. Install other R packages when prompted.

If you'd like to use additional R packages for analyzing your data, you should install those on your computer too.

4. Obtain an API key from OpenAI

1. Create a personal account at OpenAI.
2. After logging in, click 'Quickstart' at the sidebar on the left.
3. Click 'Create an API key in the dashboard here' underneath the heading 'Create and export an API key'
4. Click 'Create a new secret key' to create a key, which can be copied.
Currently, the first \$5 of usage is free. If you exceed this, add a payment method to your account.
Then navigate to 'Usage' at the sidebar on the left and set usage limits. 3—5 per month is more than enough for most people.

5. Use the API key with RTutor

There are several ways to do this:

- Once RTutor is running, click on the 'Settings' tab and paste in your API key.
- You can also save this key as a text file called "api_key.txt" in the working directory.
- Or, you can create an environment variable called "OPEN_API_KEY" where the value is your API key. Here are the instructions for Windows, Mac, and Linux.

6. To start RTutor

Run the following code in RStudio:

```
library(RTutor)
run_app()
```

Examples

See this example report generated by RTutor after a typical session. (PDF version: [report.pdf](#), Rmd file: [report.Rmd](#))

Watch an introductory tutorial video [here](#).

We are creating a YouTube channel to share more tutorials and in-depth RTutor examples. Stay tuned for updates!

Tutorial

RTutor Basics

Load demo data, select example request

The screenshot shows the RTutor web application interface. At the top is a navigation bar with links: RTutor, Home, EDA, Report, and More. The main content area is divided into two columns. The left column contains three sections: 1. Data, with a 'Demo:' dropdown and a 'Browse...' button; 2. Data Types, with an 'Edit' button; and 3. Prompt, which includes a text input area with placeholder text, an 'Examples:' dropdown, and 'Submit' and 'Reset' buttons. The right column features a 'Quick Start' button and the RTutor logo with the tagline 'Data Science for All'. Below the logo, it says 'No code? No problem. Analyze data in your own languages. Upload your data, ask questions, and get results in seconds!'. At the bottom of the page is a footer with copyright information: © 2024 Ordilus LLC, and links to Privacy Policy, Terms of Use, and Contact.

Upload your data, verify and edit data types

RTutor

Home

EDA

Report

More -

1. Data

Upload

Demo:

Browse...

No file select

2. Data Types

Edit

3. Prompt

Ask questions or request analyses in English or other languages. For general questions, briefly explain the data first. See examples below.

Examples:

Submit

Reset

Quick Start

RTutor

Data Science for All

No code? No problem. Analyze data in your own languages. Upload your data, ask questions, and get results in seconds!

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Upload a second dataset, delete a code chunk

RTutor

Home

EDA

Report

More -

Dataset: Upload

Upload 2nd file

Browse...

No file select

2. Data Types

Edit

3. Prompt

Plot `exng` by output. Color by output using red as 0 and green as 1.

Submit

Reset

Ask About Results

Q&A on code, results, error, or statistics in general

Chunk #1

Delete Chunk

Show Code ☒

```
1 library(ggplot2)
2
3 # Convert categorical variables to factors
4 df$exng <- as.factor(df$exng)
5 df$output <- as.factor(df$output)
6
7 # Plot exng by output, coloring by output
8 ggplot(df, aes(x = exng, fill = output)) +
9   geom_bar(position = "dodge") +
10   scale_fill_manual(values = c("0" = "red", "1" = "green")) +
11   labs(title = "Exng by Output", x = "Exng", y = "Count", fill = "Output") +
12   theme_minimal()
13
```

Exng by Output

Count

Exng

Output

0

1

Interactive via plotly

Interactive via CanvasXpress

Mouse over to see values. Select a row in menu. Click on the legends to deselect a row. Double click a category to hide all others. Use the menu on the

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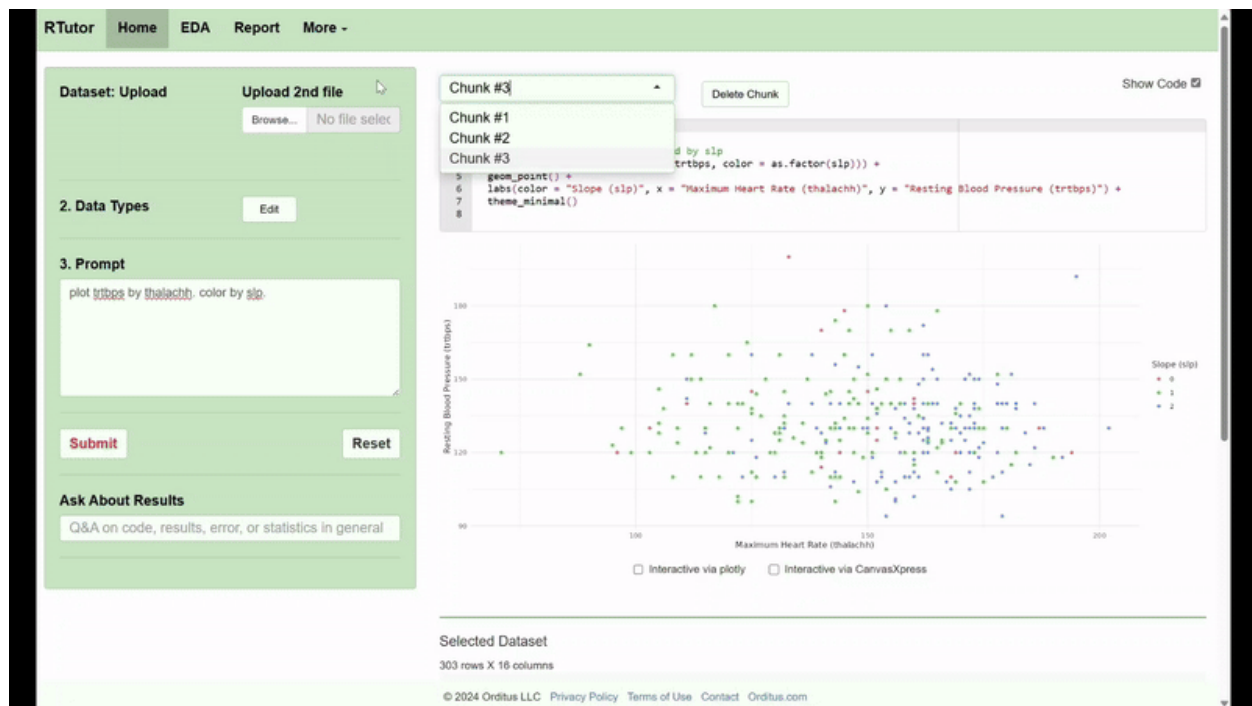
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Download a report, as HTML or RMD



Frequently Asked Questions

What is RTutor.ai?

RTutor.ai is an artificial intelligence (AI)-based app that enables users to interact with their data via natural language. Users ask questions about or request analyses in English. The app generates and runs R code to answer the question with plots and numeric results. Users may also request interpretation of results and analyses.

How does RTutor.ai work?

The requests are structured and sent to OpenAI's AI system, which returns R code. The R code is cleaned up and executed in a Shiny environment, showing results or error messages. Multiple requests are logged to produce an R Markdown file, which can be knitted into an HTML report for record-keeping and reproducibility.

Is my data uploaded to OpenAI?

By default, 5 randomly selected rows are sent to OpenAI to provide precise code results. You may opt out of this in the settings tab. All column names of your data are sent to OpenAI as a prompt to generate R code. Your data is not stored on our server after the session has ended.

Who is RTutor.ai for?

The primary goal is to help people with minimal R experience to learn R or be more productive. RTutor can speed up the coding process using R by providing draft code to test and refine. Be cautious of potential bugs or errors.

How do you make sure the results are correct?

Try to word your question differently or more specifically and repeat the same request several times. This allows users to double-check and ensure consistent results from different runs.

Can you use RTutor to do R coding homework?

No. That would defeat the purpose. You need to learn R coding properly to ensure the generated R code is correct.

Can private companies use RTutor?

Not without licensure. RTutor is available for demo purposes only. The RTutor website and source code are freely available for non-profit organizations and distributed under the CC NC 3.0 license. Contact us for more information about commercial licensing.

Can you run RTutor locally?

Yes. Download the R package and install it locally. You will also need to obtain an API key from OpenAI. See the 'Local Installation' wiki page for more information.

Why do I get different results with the same request?

OpenAI's language model has a certain degree of randomness when providing results, controlled by a 'temperature' parameter. Although this is set low, the app may still produce varying results.

Can people without R coding experience use RTutor for statistical analysis?

Not entirely. The generated code may sometimes be incorrect. However, RTutor can help quickly perform data visualization and exploratory data analysis (EDA). Be mindful that this is experimental technology.

Can RTutor replace statisticians or data scientists?

No, but RTutor can make them more efficient by accelerating parts of their workflow.

How do I write my request effectively?

Think of RTutor as a summer intern—a college student with one semester of statistics and R experience. Your instructions need to be clear and precise. While the intern is fast and works hard, they can make mistakes. Thanks to AI, this intern is lightning-fast and nearly free.

Can I install R packages in the AI-generated code?

No. However, we are working to pre-install the top 5000 most frequently used R packages on the server. Chances are, your favorite package is already installed!

Can I upload big files to the site?

Not if they are larger than 10MB. Instead, upload a small portion of your data to generate the code, which you can run locally on your laptop. Alternatively, download the RTutor R package and use it on your computer.

Voice input does not work!

This could be due to your browser blocking the website from accessing the microphone. Make sure to access the site using <https://RTutor.ai> (with HTTPS). If you use HTTP, microphone access is automatically blocked in Chrome. Also, speak closer to the mic and ensure only one browser tab is using it.