



RIn (ARLEN)

Statistics & data exploration — free, offline, in your pocket

User guide for the Lite Desktop and Mobile (Android) editions

Version 1.2.8

Project: github.com/akirawisnu/RIn

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About RIn

RIn is a free, open-source, offline-capable data-analysis tool for researchers. It offers a compact, command-driven language for cleaning, exploring, describing, visualizing, and modeling data — on a laptop *or* a phone. No per-seat licenses, no cloud, no account; your data never leaves your device.

This guide covers the two editions most people use:

- **Lite Desktop** — the standard Windows/macOS/Linux build (~80–120 MB). Full statistics, econometrics, charts, and larger-than-RAM streaming. No natural-language (NLP) commands.
- **Mobile (Android)** — the native phone app. The same command language and engine, with a built-in NumPy/SciPy estimation backend so the core econometrics run without heavy desktop-only libraries.

Both run the same scripts. A `.do` or `.rIn` script written on the desktop runs identically on the phone (subject to the per-edition notes below).

What works in each edition

A quick map of the major capabilities. See the per-command notes later for detail.

Capability	Lite Desktop	Mobile (Android)
Read CSV, .dta, Excel, JSON, dBase	Yes	Yes
Read & stream Parquet (LRTM)	Yes	Yes
Explore: describe, summarize, tabulate, correlate	Yes	Yes
Color-coded data explorer (numbers/strings)	Yes	Yes
Charts: histogram, scatter, line, twoway	Yes	Yes
Larger-than-RAM engine (polars)	Yes	Yes
Linear regression (regress)	Yes	Yes
Logit, probit, Poisson	Yes	Yes
Panel fixed effects (xtreg, fe)	Yes	Yes
Difference-in-differences (TWFE)	Yes	Yes
IV / 2SLS (ivregress)	Yes	Desktop only
Advanced DiD: Callaway–Sant’Anna, etc.	Yes	TWFE fallback
Fuzzy merge (fuzzmerge)	Yes	Yes
Reproducible scripts + editor	Yes	Yes
NLP: summarize-text, translate, neural	Offline/Full tier	—

“Yes” means it works out of the box. The mobile estimation engine is a validated NumPy/SciPy backend — coefficients, standard errors, and the common diagnostics match the desktop output for the models marked above.

Installation

Mobile (Android)

1. On the [Releases page](#), download `rln-<version>-arm64-v8a-debug.apk`.
2. Copy it to your phone and open it. Allow installs from unknown sources if prompted.
3. On the first **Open**, grant **All files access** so Rln can read data files from shared storage (Android 11+ requires this).

Lite Desktop (Windows)

Download the `rln-lite` build from the [Releases page](#). Unzip it, then:

- Double-click `Rln-GUI.bat` for the graphical app, or
- Run `rln-lite.exe` for the command-line REPL.

macOS and Linux builds run the same way (`Rln-lite.app` / the ELF binary).

From source (any platform)

```
git clone https://github.com/akirawisnu/Rln.git
cd Rln
pip install -r requirements.txt
python main.py --gui      # graphical app
python main.py            # REPL
```

A 30-second tour

Type these in the Console (desktop REPL or the phone's Console tab):

```
use "demographics.csv", clear
summarize age income n_children
tabulate gender
histogram age

* larger-than-RAM mode — millions of rows, streamed
lrtm use "eu_firms_panel.parquet"
lrtm summarize
```

Tip: bare file names like `use "demographics.csv"` now resolve against the bundled `examples/` folder, so the shipped sample data and scripts open without a full path. See *Files & the examples folder* below.

Core capabilities

Reading data

Load a dataset with `use`, or `import` for delimited/Excel/HTML. Formats: CSV/TSV, `.dta`, Excel `.xlsx/.xls`, Parquet, JSON, dBase `.dbf`, and R `.RData`. Both editions read all of these.

```
use "survey.dta", clear
import delimited "raw.csv"
```

The color-coded data explorer

The data browser shows your dataset as an interactive, type-colored grid, with the **same scheme in every edition**: **numbers in blue**, **text in orange**, and missing values muted. On the desktop GUI open the Data browser tab; on the phone open the Data tab; in the REPL run `browse`.

You can also explore a file directly without loading it into memory:

```
browse "eu_firms_panel.parquet"
```

This opens a preview of the file in the explorer and leaves your in-memory dataset untouched — handy for peeking at a Parquet before committing to it.

Explore & describe

Command	What it does
<code>describe</code>	Variable names, types, and labels
<code>summarize</code>	Means, SDs, min/max, percentiles
<code>tabulate</code>	One- and two-way frequency tables
<code>correlate</code>	Correlation matrix
<code>codebook</code>	Per-variable detail with value labels

Charts

Plots render inside the app (Plots tab on desktop and mobile). Export to PNG/PDF/SVG on the desktop.

```
histogram income
scatter income age
twoway (scatter y x) (lfit y x)
```

Larger-than-RAM (LRTM)

LRTM streams datasets bigger than memory using [polars](#). It famously summarizes 2,000,000 rows in a fraction of a second *on a phone*. Prefix commands with `lrtm`:

```
lrtm use "big_panel.parquet"
lrtm describe
lrtm summarize
lrtm filter "year >= 2015"
```

On mobile, Parquet is read with polars' native reader (no pyarrow needed), so LRTM works fully offline on the phone.

Econometrics

The estimation commands share a compact, consistent syntax. Availability by edition:

Command	Notes by edition
<code>regress</code>	Both editions. OLS with robust/cluster SEs.
<code>logit / probit</code>	Both editions (maximum likelihood).
<code>poisson</code>	Both editions.
<code>xtreg, fe</code>	Both editions. Panel fixed effects (TWFE).
<code>didregress</code>	Both: TWFE. Advanced estimators (Callaway–Sant'Anna, etc.) are desktop-only; mobile falls back to TWFE with a note.
<code>ivregress</code>	Desktop only (2SLS/IV). Mobile prints a clear message.

On mobile these run on a built-in NumPy/SciPy engine, so you do not need the desktop statistics libraries. Where a model is desktop-only, the phone tells you plainly rather than failing silently.

Fuzzy merge & record linkage

`fuzzmerge` joins two tables on approximate string matches. It works in **every edition**: it uses the best matcher available (PolyFuzz or RapidFuzz on the desktop) and falls back to a built-in pure-Python matcher on mobile, so a fuzzy join always runs.

```
fuzzmerge company using "registry.csv", threshold(0.8)
```

Reproducible scripts

Write multi-line scripts in the editor (syntax-highlighted on both editions) and run them. Save as `.rln` or `.do`. Run a saved script with `do "analysis.rln"`.

Files & the examples folder

RIn ships with an `examples/` folder of sample data and scripts, and both editions now open there by default so you can try things immediately.

- File pickers (Open data / Open script) start in the examples folder on first run.
- Bare names resolve automatically: use "demographics.csv" and do "sample.do" find the bundled examples without a full path.
- It follows your work: after you open a file from elsewhere, that folder becomes the new default.
- Pin your own default any time with `set workdir "C:/my/project"`.

The setting persists between sessions (stored in your home folder as `.rln_config.json`).

Edition notes & limitations

Lite Desktop

- Includes full statistics and econometrics (regression, panel, IV, all DiD estimators), charts, and LRTM.
- Does **not** include NLP commands (text summarization, translation, neural models). For those, download the `offline` or `full` build tier.
- Fuzzy matching uses RapidFuzz/pure-Python (the heavier PolyFuzz TF-IDF backend is not bundled to keep the build small).

Mobile (Android)

- Core econometrics run on a built-in NumPy/SciPy engine: regress, logit, probit, poisson, panel fixed effects, and DiD (TWFE).
- Desktop-only models: IV/2SLS, panel random effects, and the advanced DiD estimators. The app reports these clearly.
- No NLP commands.
- Package installation (`ssc install`) is not available on the phone — the app is self-contained. See Troubleshooting.

Troubleshooting

Symptom	Fix
Android can't see my files	On first Open, grant All files access in Settings. Android 11+ hides .csv/.dta from apps without it.
ssc install does nothing	Packaged Lite/Mobile builds are self-contained and can't pip-install. Use the from-source install to add packages, or a larger build tier.
A plot command says matplotlib is missing	Use the official Lite build (charts are included). If you built it yourself, do not exclude Pillow — matplotlib needs it.
An NLP command isn't recognized	NLP is not in Lite or Mobile. Use the offline or full desktop tier.
IV / advanced DiD unavailable on phone	These are desktop-only. Run them in the Lite Desktop build.

Command quick reference

Command	Purpose
<code>use / import</code>	Load a dataset
<code>browse</code>	Open the color-coded data explorer (or browse a file)
<code>describe / codebook</code>	Inspect variables and labels
<code>summarize / tabulate</code>	Summary stats and frequency tables
<code>correlate</code>	Correlation matrix
<code>generate / replace</code>	Create or modify variables
<code>histogram / scatter / twoway</code>	Charts
<code>regress / logit / probit / poisson</code>	Estimation
<code>xtreg / didregress / ivregress</code>	Panel, DiD, and IV
<code>fuzzmerge</code>	Approximate-string merge
<code>lrtm ...</code>	Larger-than-RAM streaming
<code>do</code>	Run a saved script
<code>set workdir</code>	Set the default folder
<code>help</code>	Full command list and help

Links & license

- Project & source: github.com/akirawisnu/RIn
- Latest release & downloads: github.com/akirawisnu/RIn/releases/latest

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