Tool Metadata Report (by MetadataFetcher)

1. General Information

Name	r (Programming Language)
Use Case	Data Science and Analytics Tools
Homepage	https://www.r-project.org/about.html
Description	R is a free, open-source programming language and environment for statistical computing and graphics. It's a GNU project similar to the S language, designed around a true computer language that allows users to add additional functionality by defining new functions. R is widely used for data analysis, statistical modeling, and data visualization.

2. Applications

Statistical analysis and modeling
Data science and analytics
Bioinformatics and medical research
Financial analysis and risk modeling
Academic research and education
Business intelligence and reporting

3. Supported Data Formats

CSV, Excel, JSON, XML files
Database connections (SQL, MySQL, PostgreSQL)
Web APIs and data scraping
Statistical data formats (SPSS, SAS, Stata)

4. Visualization Capabilities:

Publication-quality plots and graphics
Built-in graphical functions with mathematical symbols
Advanced visualization packages (ggplot2, plotly)
Interactive dashboards and web applications

5. Integration with Other Libraries:

CRAN repository with thousands of packages
Integration with Python, C/C++, and Fortran
Database connectivity tools
Machine learning and AI frameworks

6. Installation & Setup:

Download from official R website (r-project.org)
Available for Windows, macOS, and Linux
RStudio IDE recommended for enhanced development experience

7. Key Features:

Comprehensive statistical analysis capabilities
Powerful data manipulation functions
Extensive package ecosystem (CRAN)

Interactive command-line interface
Strong community support

8. Community & Ecosystem:
Large academic and industry community
Active development and regular updates
Extensive documentation and learning resources
Professional training and certification programs

9. Documentation & Learning Resources:
Official R documentation
Comprehensive online tutorials
University courses and MOOCs
Books and professional training materials

10. Licensing:
GNU General Public License (free and open source)

11. Latest Version / Release Date:
Continuously updated through CRAN

12. Example Use Cases:
Clinical trial analysis in pharmaceutical research
Financial risk modeling and portfolio analysis
Social media sentiment analysis
Government policy analysis and reporting

13. References:
Official Website: https://www.r-project.org
CRAN Repository: https://cran.r-project.org
Documentation: https://www.r-project.org/about.html

14. Other Links:
https://cran.r-project.org/doc/manuals/r-release/R-intro.html - Introduction to R Manual
https://www.rstudio.com/resources/cheatsheets/ - RStudio Cheat Sheets
https://r4ds.had.co.nz/ - R for Data Science Book
https://www.datacamp.com/courses/free-introduction-to-r - DataCamp R Course
https://swirlstats.com/ - Interactive R Learning
https://www.coursera.org/learn/r-programming - Johns Hopkins R Programming
https://stackoverflow.com/questions/tagged/r - Stack Overflow R Questions
https://community.rstudio.com/ - RStudio Community Forum
https://cran.r-project.org/web/views/ - CRAN Task Views
https://www.r-bloggers.com/ - R-bloggers Community
https://rseek.org/ - R Search Engine
https://github.com/qinwf/awesome-R - Awesome R Resources
https://bookdown.org/ - R Bookdown Publishing

https://shiny.rstudio.com/ - Shiny Web Applications

https://rmarkdown.rstudio.com/ - R Markdown Documentation

https://www.bioconductor.org/ - Bioconductor Project

https://cran.r-project.org/doc/contrib/Torfs+Brauer-Short-R-Intro.pdf- Short R Introduction

https://www.statmethods.net/ - Quick-R Reference

https://www.r-project.org/mail.html - R Mailing Lists

https://cran.r-project.org/web/packages/available_packages_by_date.html - Latest R Packages