Interactive Business Analytics Using R and Shiny: The Radiant Package

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Introduction

- Radiant is a free, web-based platform for business analytics
- Works on R but requires no coding
- Provides a point-and-click interface similar to Excel
- Generates R code automatically—learn while you work
- Key applications: Market segmentation, Customer analytics, Predictive modeling, A/B testing

Shiny & Radiant

Shiny: Open-source R package for creating interactive web apps. Transforms R analyses into interactive dashboards.

Radiant: Web-based business analytics platform built on R. Provides an intuitive GUI for statistical analysis. Acts as a bridge: R's power   Point-and-click interface.

Example analogy: "Menu-driven restaurant – pick from menu, R does the cooking"

Key Features & Modules

Data Section: Import/Export data (Excel, CSV), Manage datasets, Transform variables & filter/combine datasets

Model Section: Linear Regression, Logistic Regression, Decision Trees, Neural Networks

Basics Section: Cross-tabs, Correlation, Compare Means, Single Mean Test

Specialized Tools: Design experiments, Factor/Cluster Analysis, Maps

R Code to Install and Launch

- options(repos = c(RSM = "https://radiant-rstats.github.io/minicran", CRAN ="https://cloud.r-project.org"))

- install.packages("radiant")

- library(radiant)

- radiant::radiant()

Live Demo

(Showing Radiant in action)

Advantages

- User-friendly for beginners, no coding required
- Teaches R through code generation
- Reproducible analysis: one-click replication
- Comprehensive business tools in one menu
- Active development with new features

Limitations

- Limited customization vs pure R coding
- Learning curve for interface & statistical terms
- Can be slow with very large datasets
- Requires R installation
- Less flexibility than writing custom code

Practical Exercise

Task for Next Class:

1. Install and launch Radiant on your computer
2. Load the built-in "diamonds" dataset
3. Create a visualization showing the relationship between carat and price
4. Run a simple linear regression with price as dependent variable and carat as independent variable
5. Export the R code generated by Radiant