A new task-based GUI for R

*UseR! The R User Conference 2011*

Sheri Gilley, Principal UI Designer

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Introduction

- Sheri Gilley, Principal User Interface Designer
- BS in Psychology, Statistics
- MS in Statistics
- 26 years of software experience at SPSS
  - Statistician
  - Techline & Training
  - UI Designer
    - SPSS for Windows
    - What If?, What If? Web
    - Clementine (Modeler)
    - Text Analysis for Surveys, Text Analysis for Clementine (Text Analysis for Modeler)
- Now Principal UI Designer at Revolution Analytics
Vision

- Design a user interface for R data analysis
- Easy to use for someone with 1 or more semesters of Statistics courses
  - Expand the use of R to new audiences
  - Task based approach
- While also assisting someone writing R code
  - Write code
  - Ability to view code generated from dialogs
- While allowing someone to add their own dialogs
Architecture

- Web Client UI:
  - Same UI on multiple platforms
  - built on RevoDeployR web services framework

- Server:
  - local machine
  - intranet
  - internet
  - cloud
  - grid (RevoDeployR 2.0 load balancing support)
Design View

- Design Sketches from Fireworks
  - Webpage from Dreamweaver, simple click events
  - Easy to iterate quickly, just draw a different picture
- Live Demo (pre-beta)
For Business User

- Easy to use
- Task based dialogs
- Information you need when you need it

A new task-based GUI for R
For R User

- All the power of R available in Script Editor
- View and/or modify code generated from task dialogs

```
linear_model <- lm(infl ~ nwifeinc + educ + exper + age + kidlt5 + kidge5,
                  data = cps, family = "binomial")
summary(glm.model)
scoreModel(glm.model)
```

```
# Convert to double

function(x) {
  factor (unordered or ordered)
  if ((class(x) == "factor") | (class(x) == "ordered")) {
    # extract the levels as character
    x <- as.character(levels(x)[x])
    # now strip out any of the non-numeric parts of the levels
    x <- gsub("[A-Za-z]+", ",", x)
    conv <- as.double(x)
  }

  else if (class(x) == "character") {
    # strip out non-numeric characters
    x <- gsub("[A-Za-z]+", ",", x)
    conv <- as.double(x)
  }
}
```
For Everyone!

- Attractive “human readable” output
- Integration of charts and tables

Coefﬁcients for logit model

\( \text{inlf} \sim \text{nwifeinc} + \text{educ} + \text{exper} + \text{age} + \text{kidlt6} + \text{kidge6} \)

Built with dataset: cps91

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Prediction of inlf

- Predicted values for inlf
- Comparison of predicted outcomes for TRUE and FALSE
For Everyone!

- Organize work into projects

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Recent Projects

Getting Started

- Create a new project
- Open an existing project
- Manage your projects
- View online help

Projects

Stay organized with Projects in RevoGUI.
All your work – scripts, results, history, and more – are saved as Projects.
Usability Testing

- User Centered Design: Design for Personas / Test with People
- Tied to Milestone Release
- Methodology
  - Online meeting (Go To Meeting)
  - Camtasia for recording
- Subject can be at any location
Results
Usability Results

- Changes based on Usability Testing
  - scrollbars instead of paging in Explorer
  - Better navigation in Results Pane
  - SVG instead of PNG plots in Results Pane
  - New main toolbar layout
  - Terminology changes
  - Image changes
GUI Advisory Group

- Revolution’s GUI Advisory Group
  - usability subjects
  - 1-1 demos
  - specific questions about a design
  - survey of feature desirability
  - early information about beta program

- How to join?
  - see me after this talk
  - email me: sherri@revolutionanalytics.com
Roadmap

- Beta by end of 2011, release in 2012
- First release: Basic Statistics
- Next release: Data Manipulation tasks
- Continue to expand stats
- Continue to expand extensibility