

# West Michigan Users Group

@  **BIG DATA**  
**IGNITE**

# Agenda: 1st Session

***What is R? What is WMRUG?***

## ***Announcements***

Upcoming conferences, local R jobs, Current Events



***What is R?***

Paul Egeler, Spectrum Health



***R for Report Automation***

Aaron Clark, Advanced Radiology Services

# Agenda: 2nd & 3rd Session



## ***When Less is More: Picking your R (starter) Toolkit***

Randall Pruim, Calvin College

9:20am - Grand Gallery B



## ***Statistical Machine Learning with R***

David Zeitler, Grand Valley State University

10:25am - Grand Gallery B

# What is R?



what is R?



All

Videos

News

Shopping

Images

More

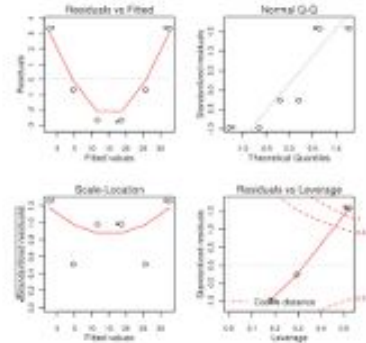
Settings

Tools

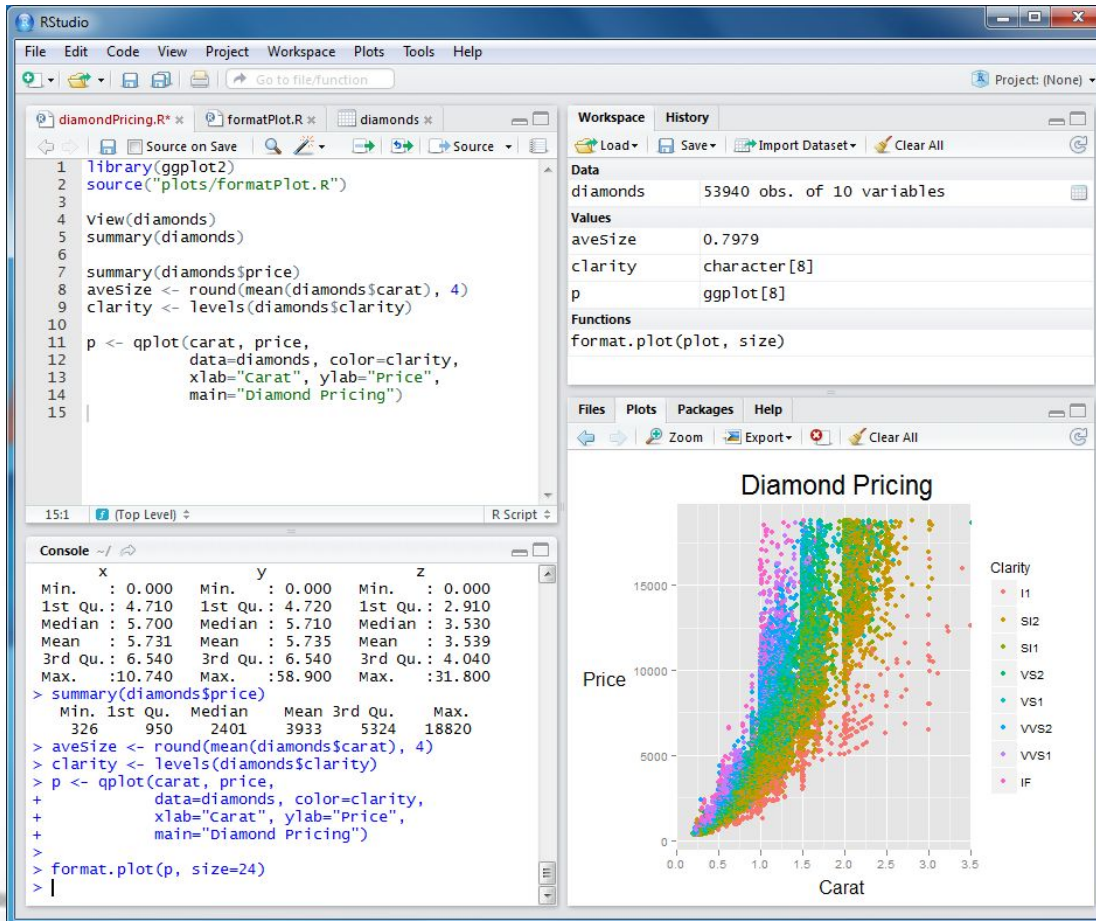
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**R** is an open source programming language and software environment for statistical computing and graphics that is supported by the **R** Foundation for Statistical Computing. The **R** language is widely used among statisticians and data miners for developing statistical software and data analysis.

[R \(programming language\) - Wikipedia](https://en.wikipedia.org/wiki/R_(programming_language))  
[https://en.wikipedia.org/wiki/R\\_\(programming\\_language\)](https://en.wikipedia.org/wiki/R_(programming_language))



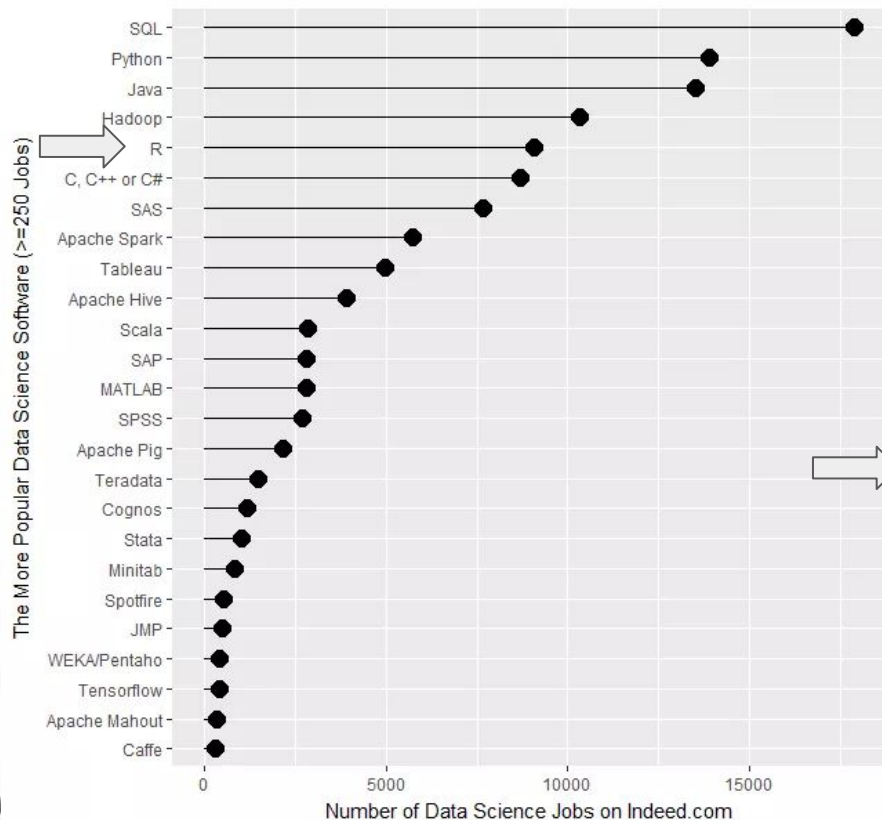
# What is R?






















# What is R?

## # Data Science Jobs by Language/Software (Feb 2017)



## IEEE 2018 Top Enterprise Programming Languages: Derived from search, social media, and job listing trends

Language Rank	Types	Spectrum Ranking
1. Python	   	100.0
2. C++	  	99.7
3. Java	  	97.5
4. C	  	96.7
5. C#	  	89.4
6. R		82.9

### Language Types (click to hide)



# What is WMRUG?

<- 'West Michigan R Users Group'

## A Community to

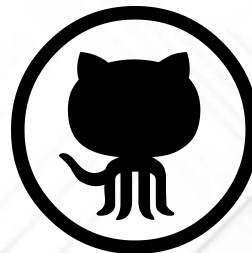
- Learn
- Share
- Innovate
- Troubleshoot
- Network



**For R-Users, by R-users!**

*Meet Monthly on 3rd Tuesdays*

*Usually @ GVSU's Downtown Campus*



# Call for Presenters!

## Lightning Talks:

- 10 min talk with 5 minutes or questions
- Great opportunity for students

## R Use-cases

- 30-50 min talk with time for questions

## In Either case...

- Get R-swig
- Add presentation to Resume/CV
- Share your knowledge!





# Next Meeting: Tues, Oct 16th



***R for the Full Analytics Stack***  
Paul Egeler, Spectrum Health

**6p - 8p**  
**DEV 121E**  
**Pew Campus**  
**GVSU**



# Announcements

## Upcoming Conferences/Talks with R Topics

**Global Data Science Conference: Sep 25 - 27**

Boston, MA

<http://globalbigdataconference.com/>



**Open Data Science Conference: Oct 31 - Nov 3**

San Francisco, CA

<https://odsc.com/>



**Data Science Pop-up: Oct 30**

Chicago, IL

<https://popup.dominodatalab.com/>



**Rstudio Conf: Jan 15 - 18**

Austin, TX

<https://www.rstudio.com/conference/>

rstudio::conf

from  R Studio

# Announcements

## New Remote R Jobs

*In the last month... via r-users.com*

Part-Time	<b>Big Data Discovery Automation in Digital Health (5-10 hours per week)</b> <a href="#">MedStar Institutes for Innovation</a> – Posted by <a href="#">Praxiteles</a>	Anywhere	7 Sep 2018
Full-Time	<b>R&amp;D Database Developer</b> Crescendo Technology Ltd – Posted by Crescendo –  Anywhere		10 Aug 2018
Full-Time	<b>Algorithm Developer</b> Crescendo Technology Ltd – Posted by Crescendo –  Anywhere		10 Aug 2018

### Predictive Modeling & Data Analytics Lead

DW Simpson Global Actuarial Recruitment  
United States

# Announcements

## New Local R Jobs

*In the last month... via r-users.com*

### Senior Software Developer - new

Initech Global

Grand Rapids, MI 49546

Needs experience in object-oriented programming on Python, R, java or .Net

### Research Associate - Cancer Metabolism

Van Andel Institute ★★★★★ 8 reviews

Grand Rapids, MI

R), and experience with the analysis of large data sets (i.e. Research Associate –

### Bioinformatics Research Scientist

Van Andel Institute ★★★★★ 8 reviews

Grand Rapids, MI

Experience in R (Required) and at least one other programming/scripting language

### Computational Biologist - Epigenetics in Metabolism

Van Andel Institute ★★★★★ 8 reviews - Grand Rapids, MI

### Consulting Advanced Analytics Analyst - new

Steelcase ★★★★★ 436 reviews

Grand Rapids, MI 49508

### Research Associate-Fixed Term - new

Michigan State University ★★★★★ 543 reviews

Grand Rapids, MI

The ideal candidate should have experience with eye-tracking methodology and analyses, programming knowledge, and experience using R, MATLAB, or Python

### Senior Business Intell Analyst (Supply Chain)

Spectrum Health ★★★★★ 602 reviews - Walker, MI

### Computational biologist - peds oncology program

Spectrum Health ★★★★★ 602 reviews

Grand Rapids, MI

Programming experience in R and Unix. Experience - Bioinformatics, especially DNA sequence analysis, R programming, and laboratory information management...

### Biostatistician Lead Peds Oncology Research Program

Spectrum Health ★★★★★ 602 reviews

Grand Rapids, MI

### Pricing Data Analyst

Meijer ★★★★★ 6,648 reviews - Grand Rapids, MI

# 1st Talk

## ***What is R?***

-Paul Egeler, Spectrum Health

Networking ice breaker!

- 1) Name
- 2) Company & Role
- 3) Their experience with R



## 2nd Talk

### ***R for Report Automation***

-Aaron Clark, Advanced Radiology Services

# A Typical “Old School” Reporting Process



Download/ Query Data. Plop into excel for cleaning, summarizing, & graphics



Copy and paste tables and graphics into Word. Perhaps add some notes/narration.



Print as PDF!



Compose and email and attach PDF.

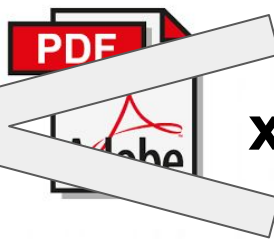
# Script the Process in R



## Why Change?

- Weave together a narrative of text, graphics, and code, so everything's in one place file!
- Makes analysis very shareable/ reproducible
- You can Scale the process up! More reports != more work
- Use multiple languages, like Python & SQL
- Supports many output formats: HTML, Word, PDF, Slides, etc
- Fast
- Easy

# ~~A Real World~~ Example



x160+



x32

**Demo!**

Code: <https://github.com/WestMichiganRUserGroup/Meeting-Materials>

Demo:



# With Great Power Comes Great Responsibility

-Ben Parker

<b>Mentee Shift Productivity Report Generator

dsishiny.advancedrad.com:8787/p/6701/

Mentee Shift Productivity Report Generator

Report Inputs

Date range:  
07/01/2017 to 06/30/2018  
Most Recent Available Data: 2018-09-10  
Most Recent Completed Quarter: 2018 Q2  
Select Physician(s)

Delivery Options

How do you want to receive the report(s)?  
☒ Email Each Report, one at a time  
☐ Download to folder on P-Drive  
Send Email(s) to:  

Generate Reports

Physicians Graduating the Mentee Program

Graduating Quarter: 2 Of Year: 2018

Hired during Quarter 2 of 2015

Last Name	First Name	Status	Hire Date
Humphrey	Kathryn	Full Time	2015-04-01

Advanced Radiology Services PC

R

+

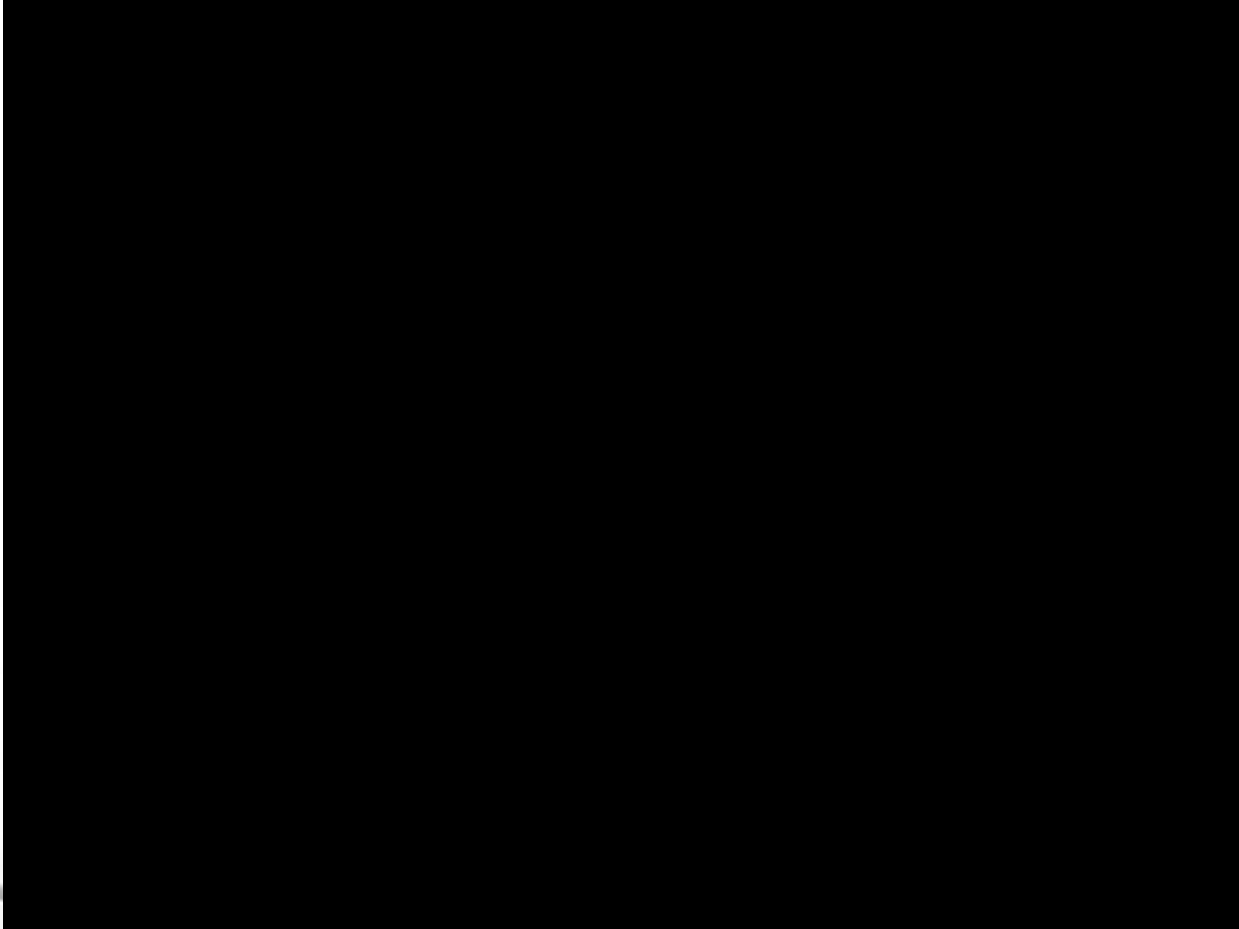
Shiny

STARS

Data Warehouse

Powered by

# Shiny App Report Generator



# Questions?