**Data products**

Insight into problems or trends

Tabular

Graphical

Spatial

Insight into concept development

Decision support

Automated decision making

Data products/service

Business platform

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| Insight into problems or trends (EDA) | Identifying actionable needs | Charts/graphs | R, python (Publications) |
| Insight into concept development (EDA) | Finding the path to value | Charts/graphs | R,python  (Publications) |
| Decision support | Insight into complex data for decision making | Reports, dashboards | PowerBI, Shiny server |
| Automated decision making | Automating process | Amazon recommendation engine | Model service + Ap |
| Data products/service | Supply side service | zillow | Model service + Ap |
| Business platform | Ad revenue | Google search | Model engine + Ad model service + Ap |
| AI knowledgebase | Knowledge to do work | ML Training data set | Embedded system + db |

**Insight into problems or trends**

**Geospatial**

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**Insight into concept development**

**Decision support**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Shiny |  |  |
|  | A web application framework for R |  |  |
|  |  |  |  |
|  | **Shiny server**  **Run on aws**  **Local webserver** |  |  |
|  | Hosted on shinyapps.io.  Should you hit the limit on the free plan, RStudio will send you a message. If you receive the message and are more than a few days from getting a fresh 25 hours on your monthly renewal, please send an email to shinyapps-support@rstudio.com with the email address you use on the service and the account name you are using (the first part of the URL). RStudio will then increase your limit so you can continue working on your project. |  |  |
|  | **Bootstrap package for buttons** |  |  |
| **javascrit** | **Mozilla Developer Network** |  |  |
|  |  |  |  |

**Shiny**

**Library”shiny”**

**Per project:**

ui.R

Server.r

**HTML elements**

h1() to h6 – heading tags

p()

a()

div()

span()

?builder – see all html tags

Create slider

Value for slider -> passed into server function-> back to UI function to display

**Run**

Switch to dir of ui. R and server. R alt+s+W return

runApp() or

runApp(path to ap)

**Interactive Plots**

**Reactive Expressions (with a button, for ML calcs)**

Reactive expression – manipulates inputs from shiny and returns a value

**Operate multiple input$vars and generate a new variable**

Calc\_sum<-reactive({input$box1 +input$box2})

Calc\_sum()

**Reactivity**

As soon as input changes, then

**submitButton("Submit"). @ end of all inputs in the sidebarPanel( section.**

**AdvancedUI**

**Brush**

mainPanel(

plotOutput("plot1", brush = brushOpts(

id = "brush1"

))

You can actually embed RGL, RS 3D graphics library in a Shiny webpage using WebGL.

**Shiny Gadgets (RStudio Viewer Pane)**

mini UI package

**GoogleViz**

**Print M -> html and javascript**

**Merge charts**

|  |  |  |
| --- | --- | --- |
|  | **Show top x rows with slider** | [**https://shiny.rstudio.com/gallery/unicode-characters.html**](https://shiny.rstudio.com/gallery/unicode-characters.html) |
|  | **Pull down -> show value** |  |
|  | **Log in type:**  **Manager**  **Sales1**  **Sales2** | **https://shiny.rstudio.com/gallery/personalized-ui.html** |
|  | **Brush and zoom** |  |
|  | **Left plot and zoom** | **https://shiny.rstudio.com/gallery/plot-interaction-zoom.html** |
|  | **Remove points from a plot** | **https://shiny.rstudio.com/gallery/plot-interaction-exclude.html** |
|  | **Show poit info near brush or click** | <https://shiny.rstudio.com/gallery/plot-interaction-selecting-points.html> |
|  | **Select plot type** | **https://shiny.rstudio.com/gallery/plot-interaction-basic.html** |
|  | **Html text** | **https://shiny.rstudio.com/gallery/including-html-text-and-markdown-files.html** |
|  | **Multiple panels / pages** | [**https://shiny.rstudio.com/gallery/navlistpanel-example.html**](https://shiny.rstudio.com/gallery/navlistpanel-example.html) |
|  | **Running a simulation – scenario**  **Select vars**  **Show plots** | **https://shiny.rstudio.com/gallery/retirement-simulation.html** |
|  | **Navigation bar** | [**https://shiny.rstudio.com/gallery/navbar-example.html**](https://shiny.rstudio.com/gallery/navbar-example.html) |
|  | **Config a ggpolt with many pull downs** | <https://shiny.rstudio.com/gallery/plot-plus-three-columns.html> |
|  | **Show math text**  **Math jax** | **https://shiny.rstudio.com/gallery/mathjax.html** |
|  | **Date range** |  |
|  | **tabs** | **https://shiny.rstudio.com/gallery/datatables-demo.html** |
|  | **Widgets gallery** |  |
|  | **Plot by year** | **Select year** |
|  | **Show a section on a map with legend** | [**https://shiny.rstudio.com/gallery/bus-dashboard.html**](https://shiny.rstudio.com/gallery/bus-dashboard.html)    **(refresh rate)** |
|  | **Map + tables** | <https://shiny.rstudio.com/gallery/superzip-example.html> |
|  | **Multiple maps + dataset page tabs**  **Imput sliders** | https://shiny.rstudio.com/gallery/lego-set.html |
|  | **Ggvis**  **Maps (by tabs)** | [**https://www.showmeshiny.com/ggvis-maps/**](https://www.showmeshiny.com/ggvis-maps/) |
|  | Map example |  |
|  | **Time-series forecasting comparison** | **https://raviolli77.shinyapps.io/forecast\_dashboard/** |
|  | **Menu – side bar (show or hide)** | <https://www.showmeshiny.com/power-in-ab-testing/> |
|  | **Machine learning model comparison and performance** | <https://www.showmeshiny.com/machlearn/> |
|  | **Forecasting with annotations** | [**https://www.showmeshiny.com/portender/**](https://www.showmeshiny.com/portender/) **@ time intervals** |
|  | **Web application**  **Explore and use tools** | <https://www.showmeshiny.com/gliovis/> |
|  | **Compare forecasting** | <https://www.showmeshiny.com/erp-data-analysis/> |
|  | **Geo explore by brush** | [**http://davesteps.com/geoExploreR/**](http://davesteps.com/geoExploreR/) |
|  | **,map with overlay** | **https://www.showmeshiny.com/netassess-air-monitoring/** |
|  | **Dynamic dashboard** | [**https://www.rstudio.com/resources/webinars/dynamic-dashboards-with-shiny/**](https://www.rstudio.com/resources/webinars/dynamic-dashboards-with-shiny/) |
|  | **Icon set** | [**https://semantic-ui.com/elements/icon.html**](https://semantic-ui.com/elements/icon.html) |
|  | **Awesome dashboard** | [**https://appsilon.com/create-outstanding-dashboards-with-the-new-semantic-dashboard-package/**](https://appsilon.com/create-outstanding-dashboards-with-the-new-semantic-dashboard-package/) |
|  | **Shiny dashboard** | **https://rstudio.github.io/shinydashboard/** |
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**Installed packages**

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|  |  |  |  |  |
| **Homebrew** | **Package manager** | /usr/bin/ruby -e "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/master/install)" | installs packages to their own directory and then symlinks their files into /usr/local. |  |
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**Geocomputation in R**

[**https://bookdown.org/robinlovelace/geocompr/**](https://bookdown.org/robinlovelace/geocompr/)

**Making maps in R**

**library**(sf)

**library**(raster)

**library**(dplyr)

**library**(spData)

**library**(spDataLarge)

* In addition, it uses the following visualization packages:

**library**(tmap) *# for static and interactive maps*

**library**(leaflet) *# for interactive maps*

**library**(mapview) *# for interactive maps*

**library**(ggplot2) *# tidyverse vis package*

**library**(shiny) *# for web applications*

Automated decision making

Data products/service

Business platform