



Using R Shiny Dashboard to Predict Commerce Traffic

By : Dwi Lucia Arfani

Hii, I'm Fani

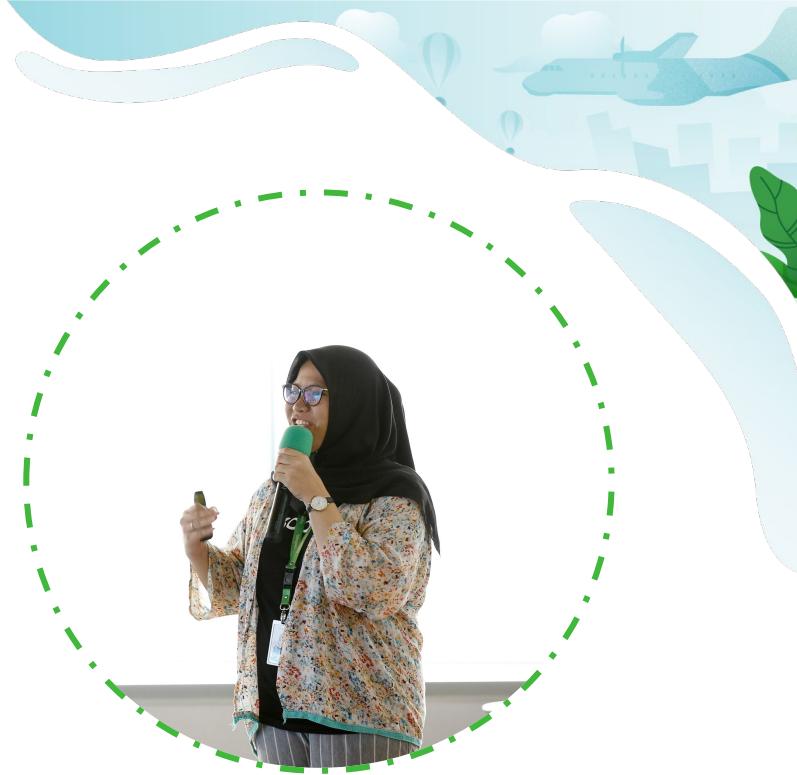
I was born in Bandung, May 30th 1994.

Currently, I live in Kebayoran Lama, South Jakarta.

My hobbies are painting and watching movie.

I worked on Tokopedia from 2015 until now as Data Analyst. Nowadays, I handle analysis on Centre of Excellence team.

I received a Bachelor of Science from Universitas Padjadjaran.



About Tokopedia

Vision

Build a Super Ecosystem where anyone can start and discover anything

Mission

Democratize commerce through technology



Our Businesses



Marketplace & Digital Goods

Free C2C business platform for merchants and buyers. Merchant tools that empower merchants to do more. Also host Official Stores for brands. 30 digital products that simplify lives.



Fintech & Payment

Digital wallet, affordable investments, merchant loans, virtual credit card, protection products, data-driven credit scoring for lending, investments and other financial services.



Logistic & Fulfillment

Shipping made easy with our integrated logistics system. Customers can choose their preferred package arrival time which will be accommodated by our logistic providers.



New Retail

Mitra Tokopedia enables small merchant to sell digital goods and keep their offline store, and allow stores to buy products and stocks in wholesale.



4,500+

Nakama

90M+

Active users
monthly

98%

Districts
reached

350 M+

Products

8.9 M+

Merchants

86.5%

First time
entrepreneurs

Our DNA



Focus on Consumer



Growth Mindset



**Make It Happen,
Make It Better**



+ Data Office Tokopedia +

Let's Democratize Access To Knowledge



Tokopedia Data Office



Business
Intelligence



Data
Engineer



Data
Analyst



Data
Scientist



Data
Tracking

Vision Mision DA

VISION

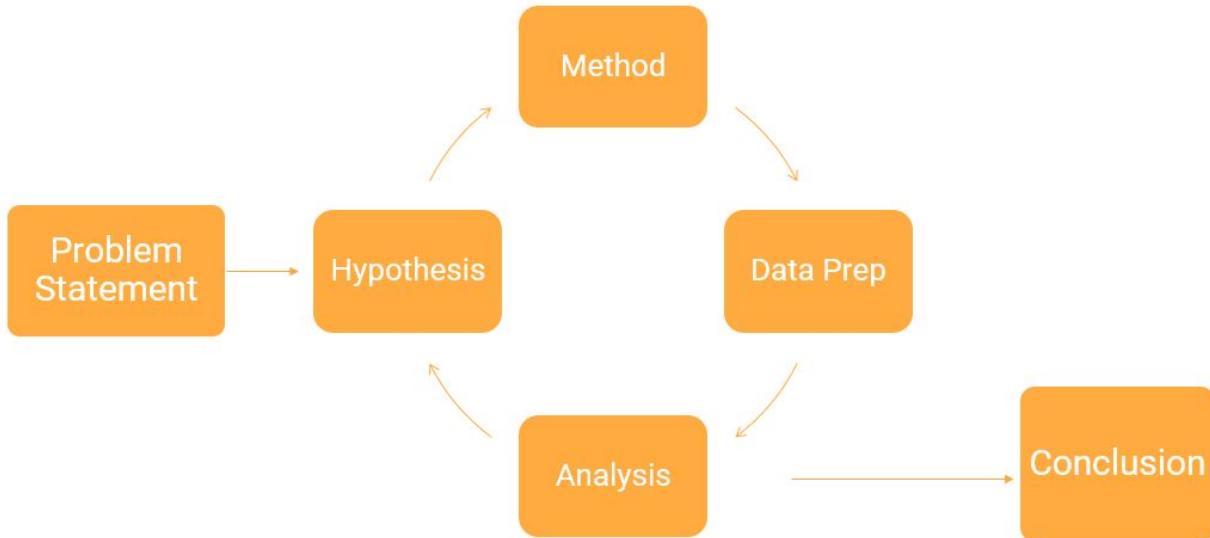
Transforming Data to Knowledge

MISSION

Providing Intelligent Insights and Advanced Data Platform



Agile Data Analysis Process



What it takes to be in Data Analyst?



Google BigQuery



R USE CASE

Problem Statement

Internet Marketing Team



How to optimize budget to get traffic ?



Hypothesis

Is there any algorithm can provide prediction to explore budget optimization ?

Regression Linear



Tools for user interaction



Method & Analysis

Regression Linear

Regression helps to understand the relationships between variables

R + R Shiny

is an R package that makes it easy to build interactive web apps straight from R. So user can use this web apps to do what they want by themself

From Wikipedia and R website

Regression Linear

1. Setting Variable Related
2. Hypothesis Testing
3. Model Build

R + R Shiny

1. R Scripting
2. Create UI
3. Publish Web Apps

Method & Analysis

Setting Variable Related

Critical Stage and May Be Try and Error

Model Build

50% Workload

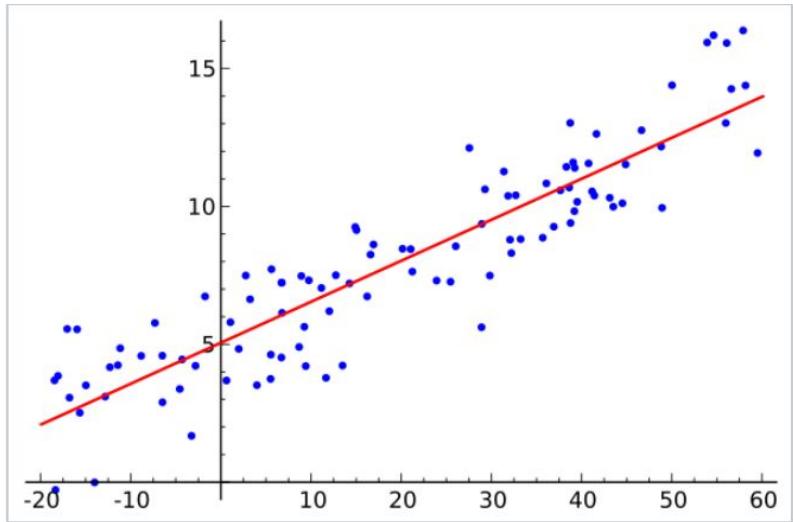
Create UI

20% Workload

Publish Web Apps

Regression Linear

linear regression is a linear approach to modeling the relationship between a scalar response (or dependent variable) and one or more explanatory variables (or independent variables)



Dependent variable :

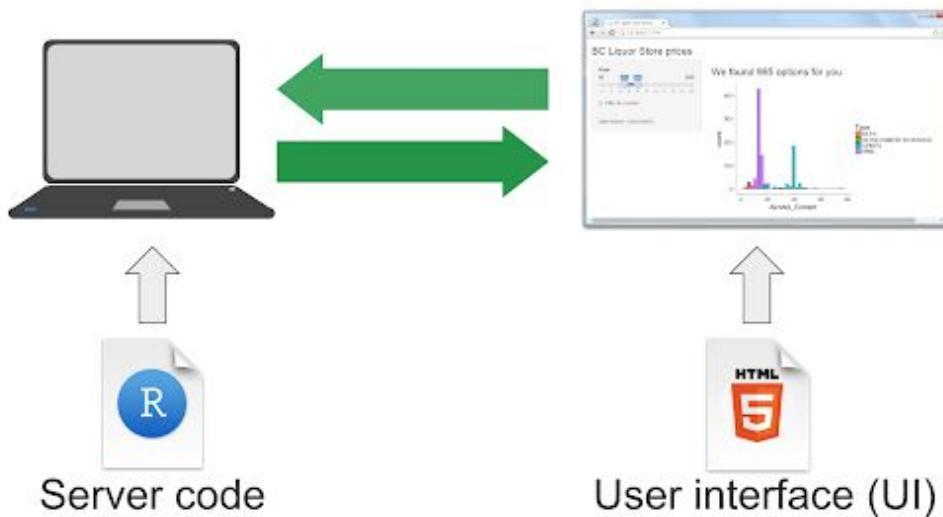
- budget or spending

Independent variables :

- Traffic
- Promotion
- User Behavior on Online Shopping

R-Shiny

A Shiny app is a web page (UI) connected to a computer running a live R session (Server)



R-Shiny

3 Component :

UI

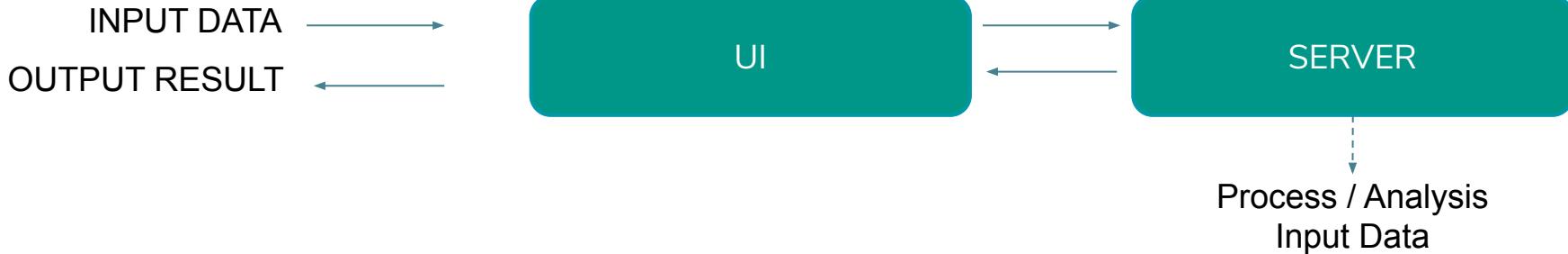
nested R functions that assemble an HTML user interface for your app

SERVER

a function with instructions on how to build and rebuild the R objects displayed in the UI

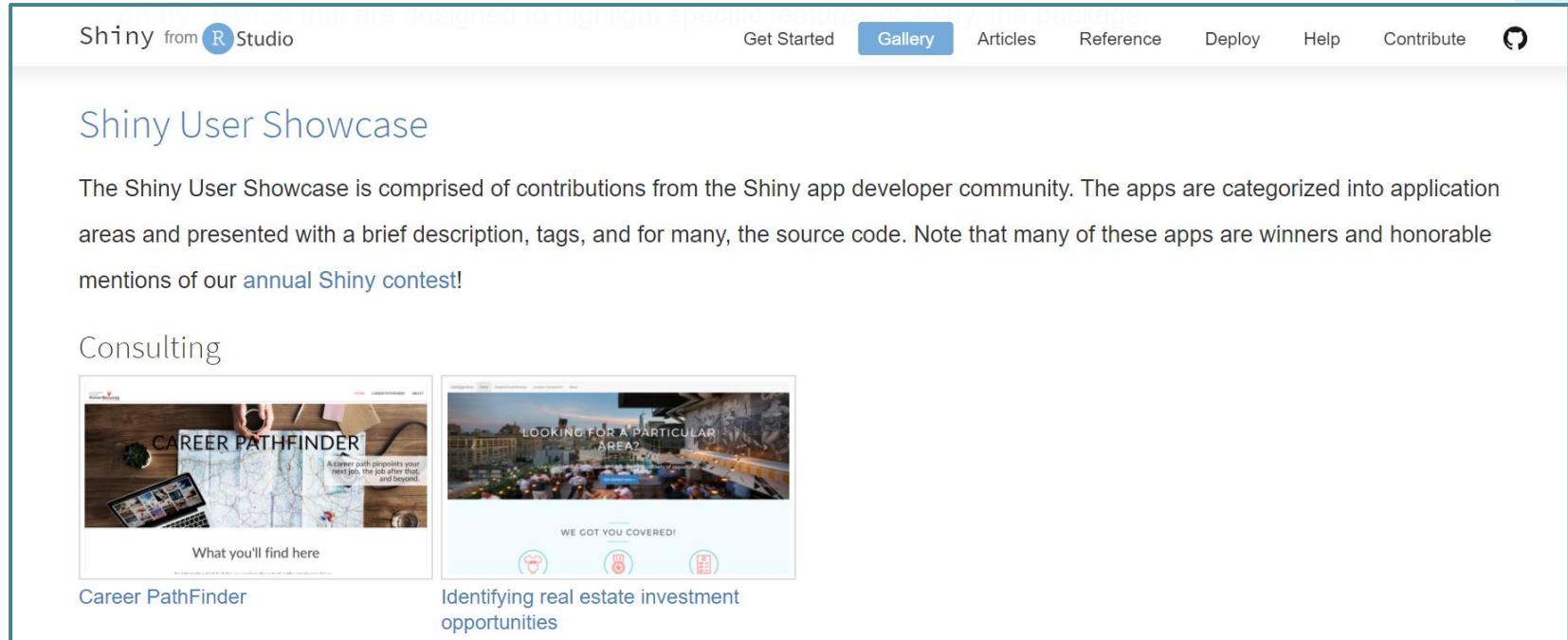
SHINY APP

combines ui and server into a functioning app. Wrap with runApp() if calling from a sourced script or inside a function.



R-Shiny

[link]



The Shiny User Showcase is comprised of contributions from the Shiny app developer community. The apps are categorized into application areas and presented with a brief description, tags, and for many, the source code. Note that many of these apps are winners and honorable mentions of our [annual Shiny contest](#)!

Consulting



CAREER PATHFINDER
A career path generator for your next job, the job after that, and beyond.

What you'll find here

Career PathFinder



LOOKING FOR A PARTICULAR AREA?
WE GOT YOU COVERED!

Identifying real estate investment opportunities



Try Yourself ...



Example

```
#          #
# Dwi Lucia Arfani      #
# Principal Data Analysis#  
  
# Load R packages  
library(shiny)  
library(shinythemes)  
  
# Define UI  
ui <- fluidPage(theme = shinytheme("cerulean"),  
  navbarPage(  
    # theme = "cerulean", # <--- To use a theme, uncomment this  
    "My first app",  
    tabPanel("Navbar 1",  
      sidebarPanel(  
        tags$h3("Input:"),  
        textInput("txt1", "Given Name:", ""),  
        textInput("txt2", "Surname:", ""),  
      ), # sidebarPanel  
      mainPanel(  
        h1("Header 1"),  
        h4("Output 1"),  
        verbatimTextOutput("txtout"),  
      ) # mainPanel  
, # Navbar 1, tabPanel  
tabPanel("Navbar 2", "This panel is intentionally left blank"),  
tabPanel("Navbar 3", "This panel is intentionally left blank")  
  
) # navbarPage  
) # fluidPage  
  
# Define server function  
server <- function(input, output) {  
  
  output$txtout <- renderText({  
    paste( input$txt1, input$txt2, sep = " " )  
  })  
} # server  
  
# Create Shiny object  
shinyApp(ui = ui, server = server)
```



Happy to share with you

Example

[Link]

Traffic Prediction

Prediction Explanation

Select Date to Predict: 2019-03-01 to 2019-03-31

Input Spending: 10

9,138 Traffic Total - Upper Limit

8,909 Traffic Total - Median

8,680 Traffic Total - Bottom Limit

tokopedia Data Office Marketing

Prediction Daily Breakdown

Date	Traffic
Mar 01	320
Mar 02	280
Mar 03	280
Mar 04	320
Mar 05	320
Mar 06	280
Mar 07	250
Mar 08	320
Mar 09	270
Mar 10	300
Mar 11	310
Mar 12	305
Mar 13	305
Mar 14	260
Mar 15	260
Mar 16	260
Mar 17	260
Mar 18	300
Mar 19	295
Mar 20	295
Mar 21	295
Mar 22	295
Mar 23	250
Mar 24	250
Mar 25	280
Mar 26	280
Mar 27	280
Mar 28	250
Mar 29	250
Mar 30	250
Mar 31	250
Apr 01	250

Conclusion & Action

Regression Linear



Tools for user interaction



R + R Shiny





Thank you!