

Diabetes

1. Introduction:

Diabetes is a browser-based R Shiny graphical user interface (GUI) for scientists or data experts to explore the Pima Indian diabetes dataset. The Purpose of this application is to determine if the Females that are around the age of 21 and are Pima Indian heritage have diabetes or not.

2. How to start

This is an instruction and how to run Diabetes shiny software locally using shinyapps.io with free RStudio service (<http://alladyaditi.shinyapps.io/Diabetes>)

Requirement:

- R ($\geq 4.0.2$)
- Shiny ($\geq 1.2.0$)

How to install shiny package:

1. Open R.
2. User can install the shiny package by the following command in R:
`install.packages("shiny ")`

How to install and run Diabetes locally

1. Open R.
2. Run Diabetes by the following commands in R:
`library(shiny)`
`shiny::runGitHub(repo = "Diabetes",username = "alladyaditi",ref="main")`

(The first module of Diabetes Descriptive Statistics page will pop-up, see Figure 1)

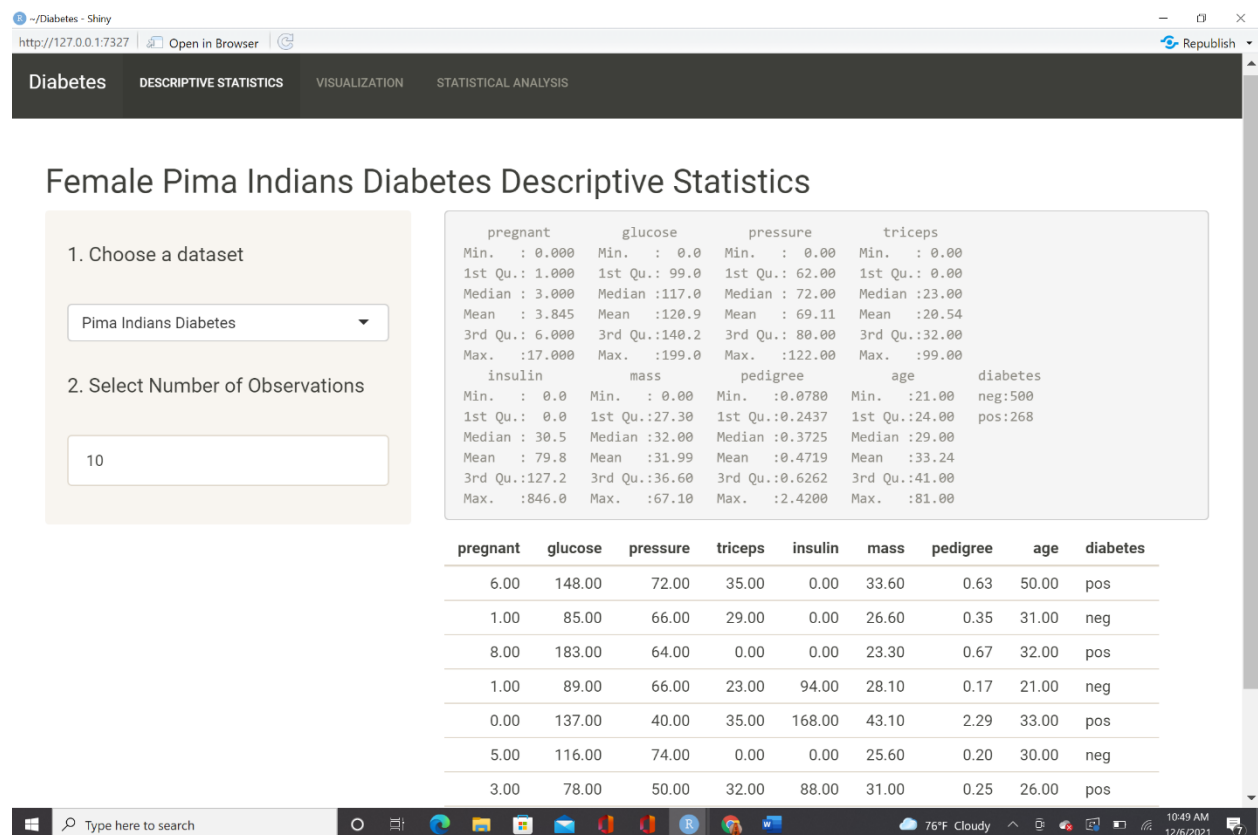


Figure 1: The first module of Diabetes Descriptive Statistics

3. Run Diabetes

Module 1: Descriptive Statistics

The first module contains (1) choose a dataset; (2) Select Number of Observations – RA (Figure 1). User can RA data set by simply the “choose a dataset”. They can simply see the continuous and categorical data statistics such as the mean and median and can also view the datasets observations of 10 or more.

Module 2: Visualization

The second module contains (1) y-axis, (2) x-axis, and (3) filter by (Figure 2). The user can use the prima Indian diabetes to box - plot the data. Continuous and categorical data. For example, in Figure two plots glucose vs age and is filtered by if the two variables are diabetes or not.

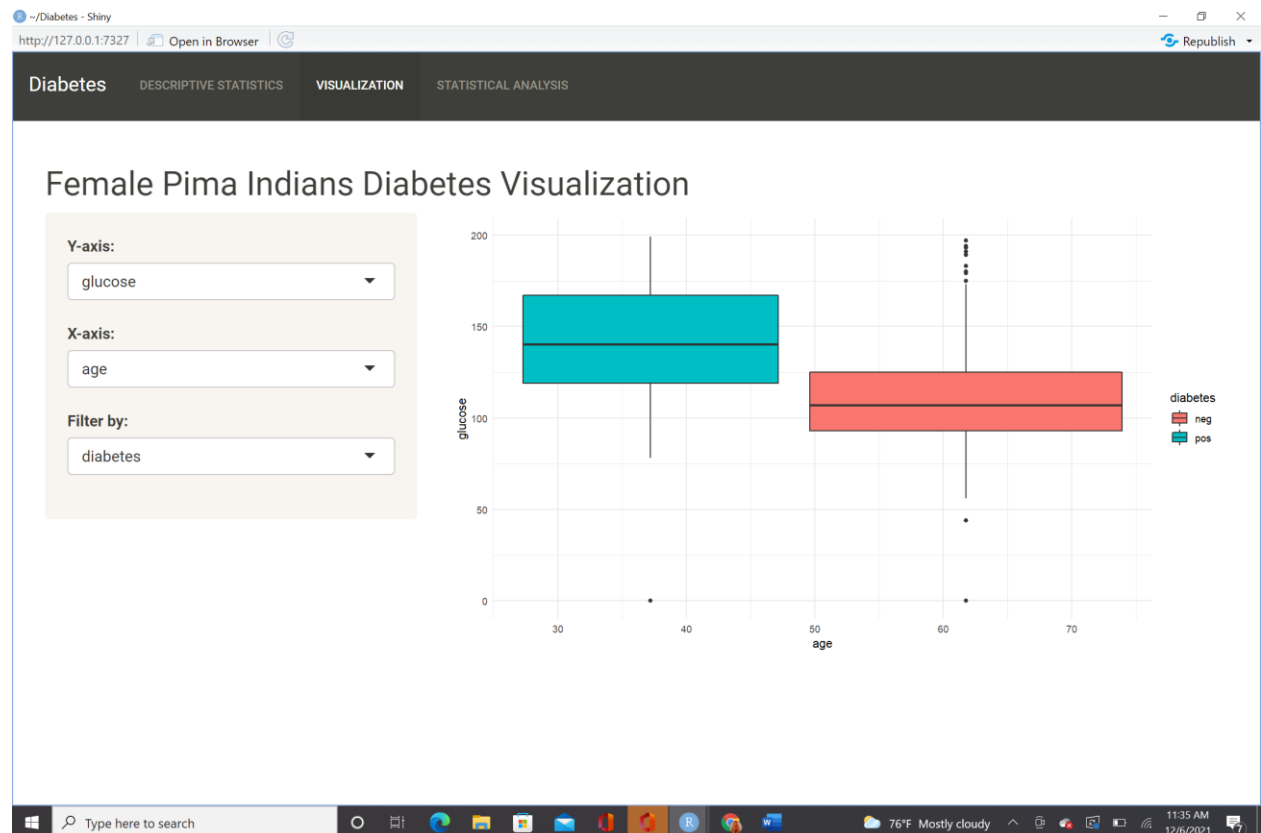


Figure 2: The second module of Diabetes visualization

Module 3: Statistical Analysis

The second module contains (1) choose a dataset, (2) choose a response variable, (3) choose a Explanatory variable, and (4) Select a confidence level (Figure 3). The user can use the prima Indian diabetes to choose a response and explanatory variable and select a confidence level to conduct a

T-test that is one and two sample, and a Wilcox test.

The screenshot displays the 'Diabetes' Shiny application in a web browser. The interface is divided into a left sidebar and a main content area. The sidebar contains four steps: 1. Choose a dataset (Pima Indians Diabetes), 2. Choose a Response Variable (pregnant), 3. Choose a Explanatory Variable (triceps), and 4. Select a Confidence Level (0.95). The main content area is titled 'Female Pima Indians Diabetes Statistical Analysis' and features two tabs: 'T- Test Two sample' and 'T- Test One sample'. The 'T- Test Two sample' tab is active, showing the results of a Welch Two Sample t-test. The output text is as follows:

```
Welch Two Sample t-test

data:  var1 and var2
t = -28.371, df = 835.31, p-value < 2.2e-16
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -17.84618 -15.53663
sample estimates:
mean of x mean of y
 3.845052 20.536458
```

The 'T- Test One sample' tab is also visible, showing the results of a One Sample t-test. The output text is as follows:

```
One Sample t-test

data:  diff
t = -27.914, df = 767, p-value < 2.2e-16
alternative hypothesis: true mean is not equal to 0
95 percent confidence interval:
 -17.86525 -15.51756
sample estimates:
mean of x
```

The bottom of the image shows a Windows taskbar with various application icons and a system tray displaying the date and time as 11:42 AM on 12/6/2021.

Figure 3: The third module of Diabetes is statistical analysis