**ECE3502 – IoT Domain Analyst**

**LAB – 11. RStudio to Node Red data transfer**

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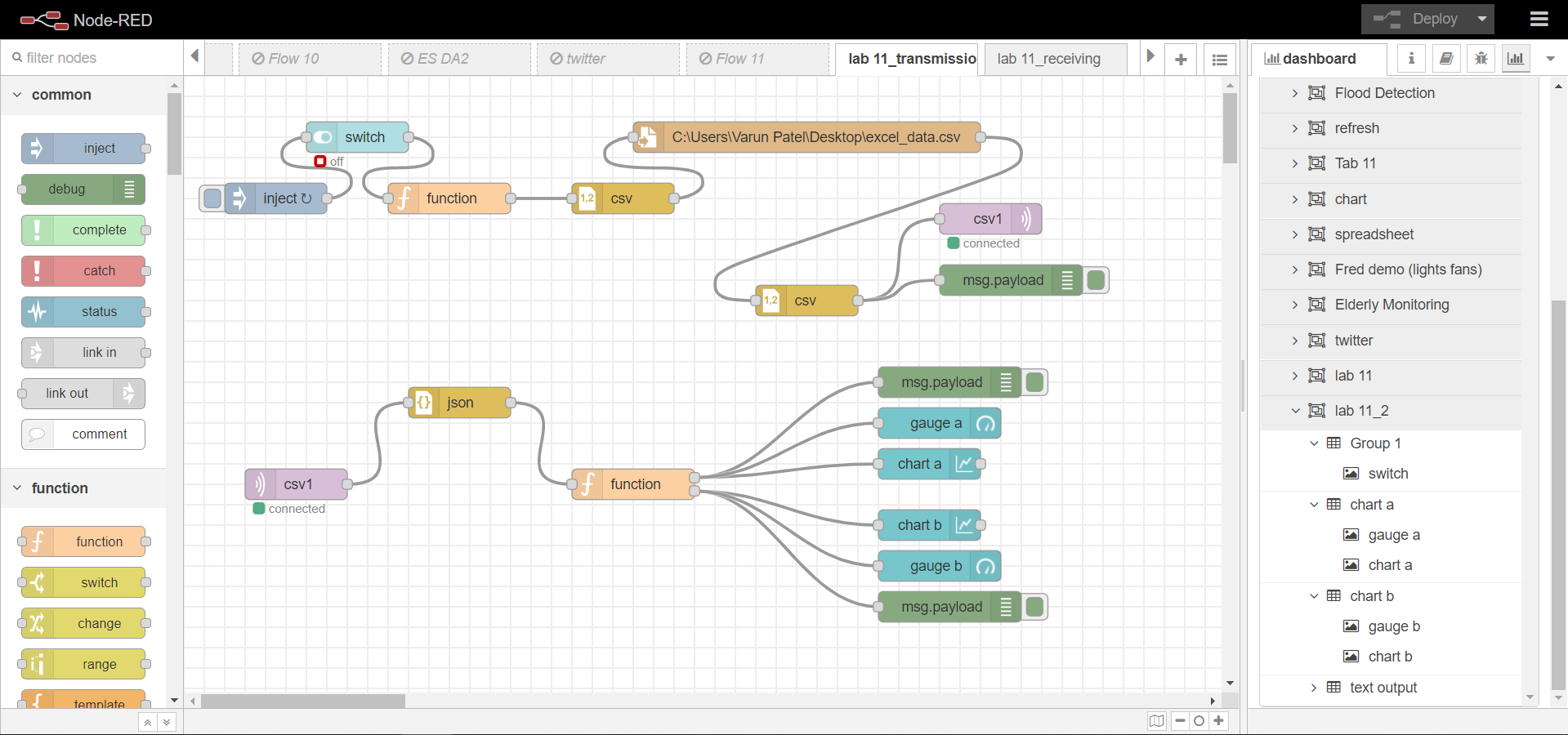
**Date: 01-06-2021**

**Q1. Linear Regression.**

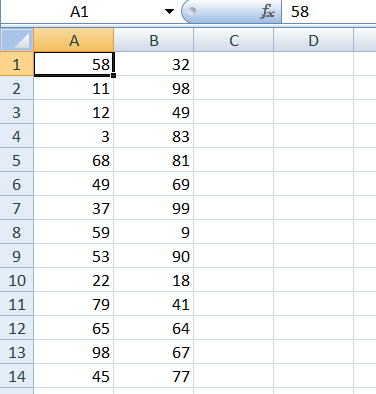
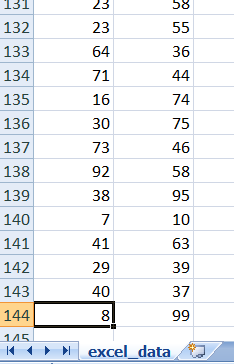
**Generate 2 random values (height, weight) on Node Red and store them onto a csv file. Take this dataset into RStudio and generate a linear regression model to predict height at a given weight value. Send this predicted output to Node Red to display on dashboard.**

**Ans.**

**Node Red flow:**

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**Dataset (2 random numbers between 1 – 100):**

**RStudio (Script Code):**

#put csv file in current working directory("Documents")

#create dataframe of csv file

setwd("C:/Users/Varun Patel/Desktop")

print(getwd())

hw <- read.csv("excel\_data.csv", header = FALSE)

#print(hw)

#separating columns into dataframes

h1 <- hw$V1

w1 <- hw$V2

#print(h1)

#plot graphs

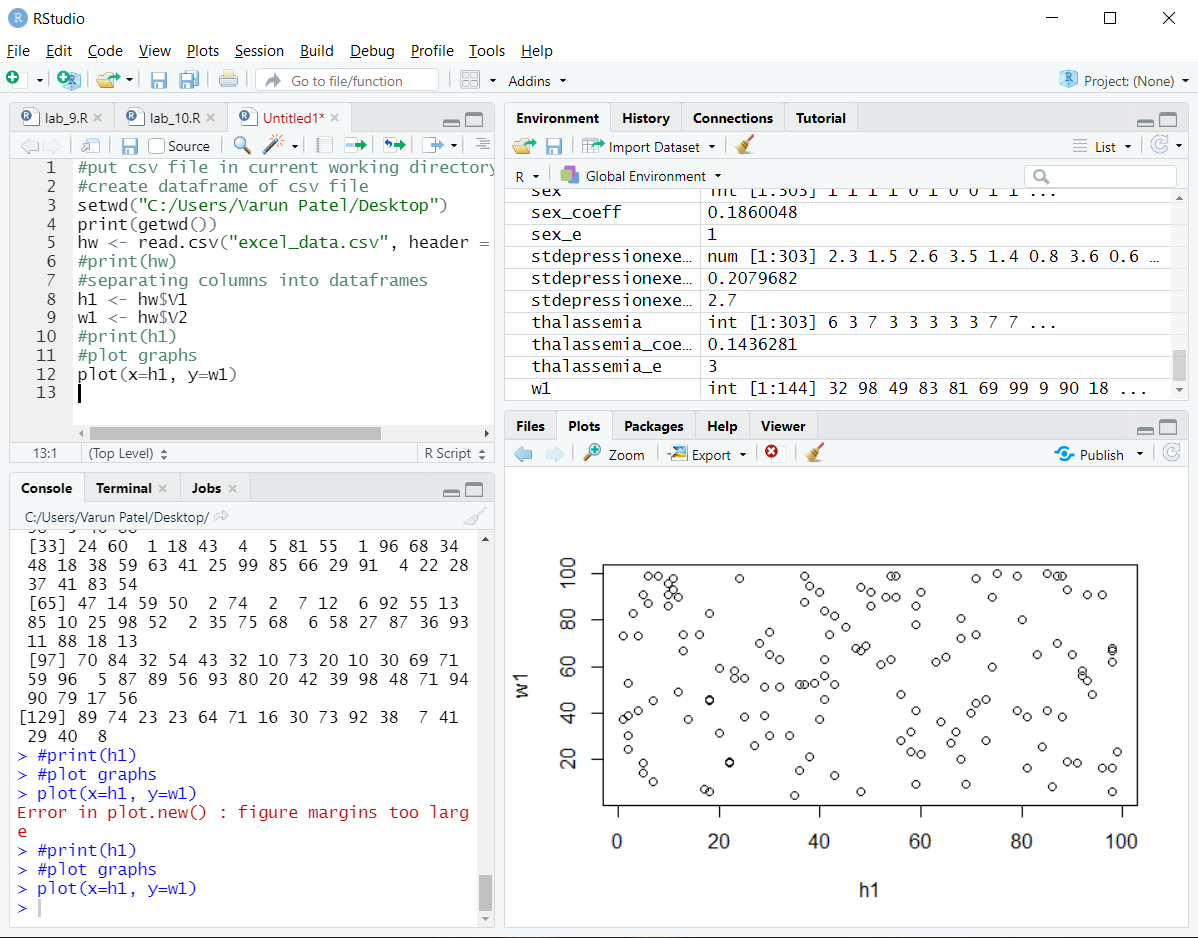
plot(x=h1, y=w1)

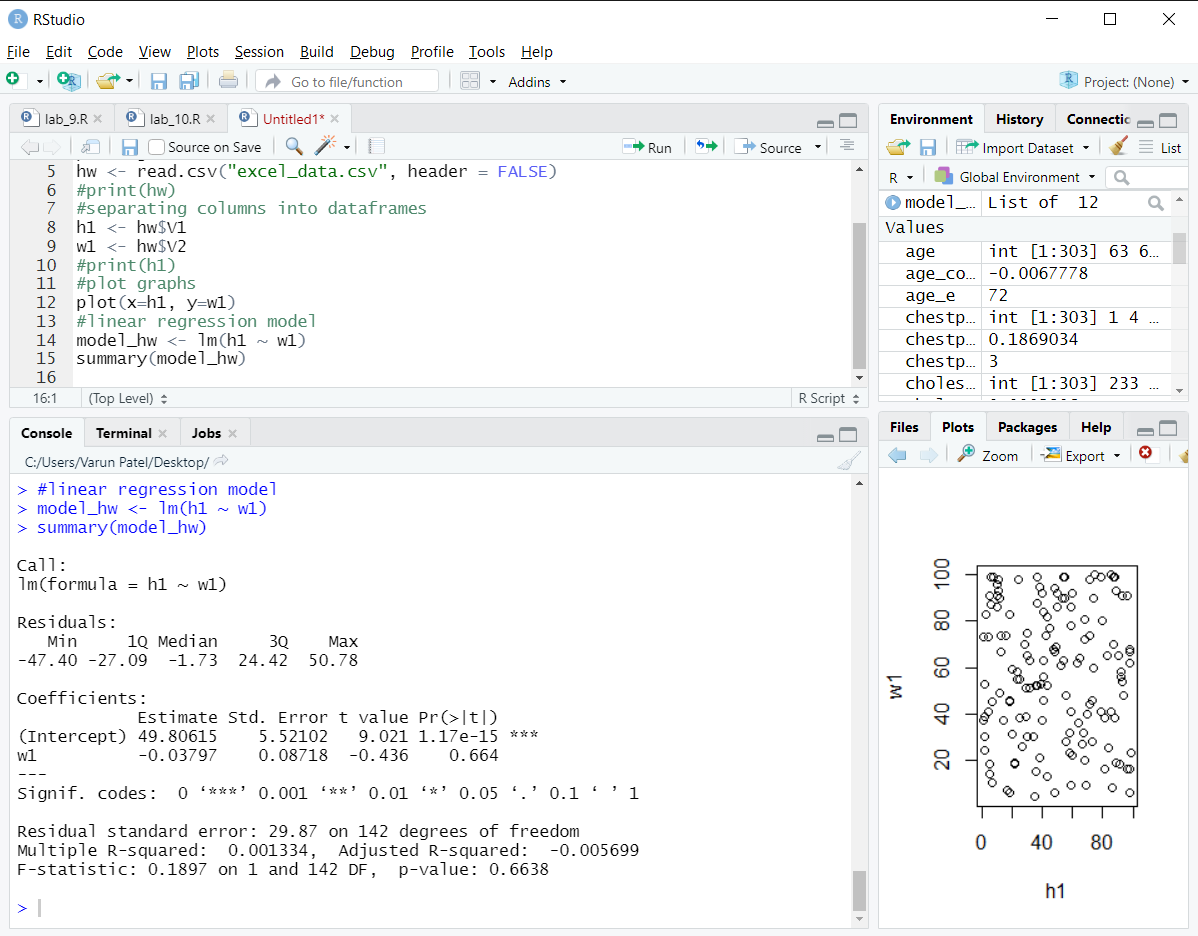
#linear regression model

model\_hw <- lm(h1 ~ w1)

summary(model\_hw)

**Screenshots:**





**Console Code (Prediction and saving output in a .txt file):**

> # save output in file

> sink(file = "pred.txt")

> print("#prediction")

> print(intercept:)

Error: unexpected ')' in "print(intercept:)"

> print("intercept:")

> intercept = 49.80615

> intercept

> print("w coefficient:")

> w\_coeff = -0.03797

> w\_coeff

> # w random value

> w\_rand = 37

> print("w random value:")

> w\_rand

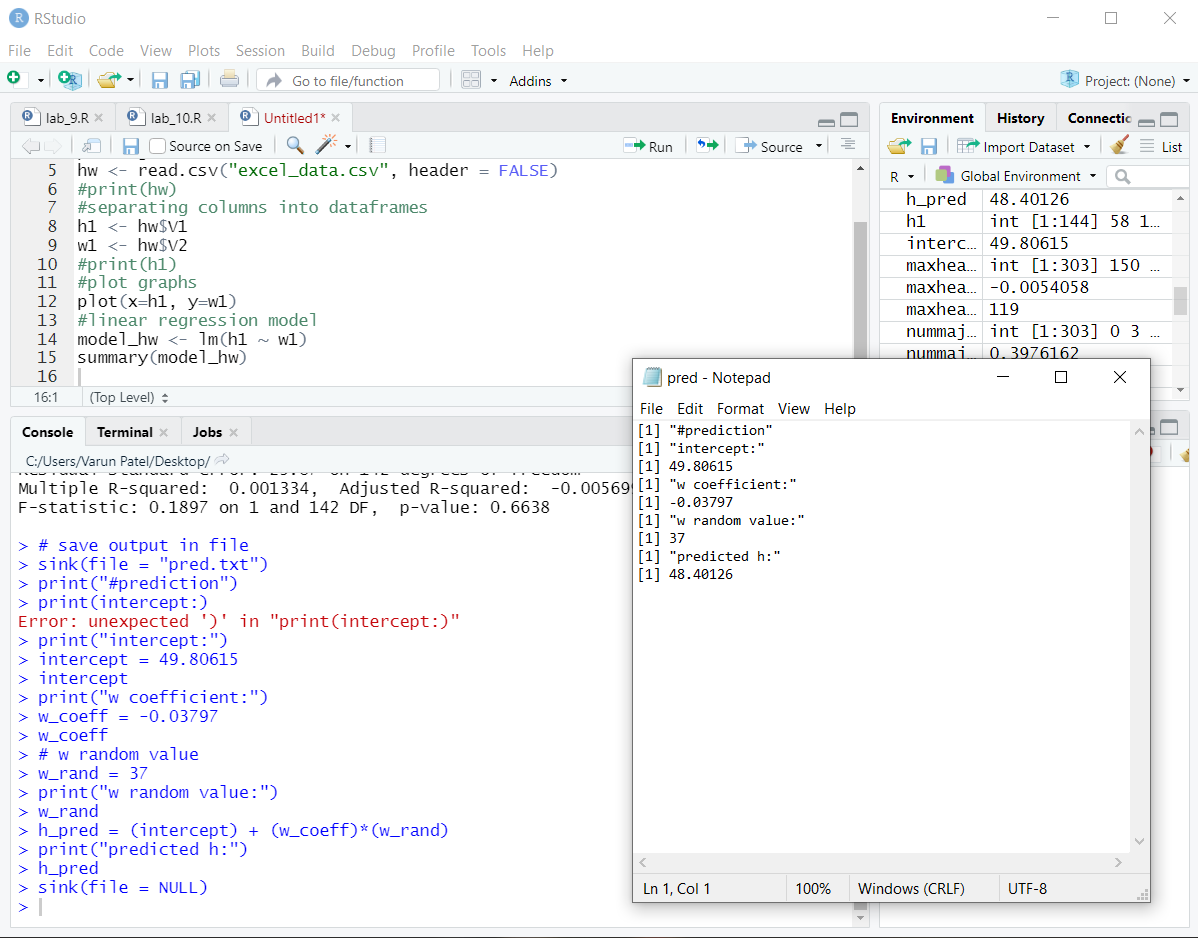
> h\_pred = (intercept) + (w\_coeff)\*(w\_rand)

> print("predicted h:")

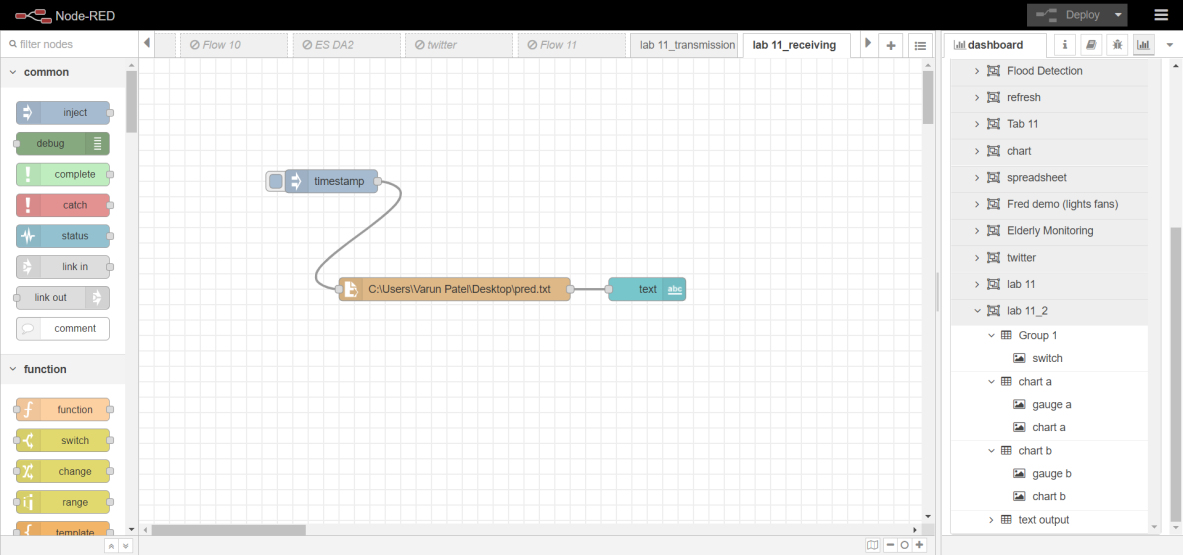
> h\_pred

> sink(file = NULL)

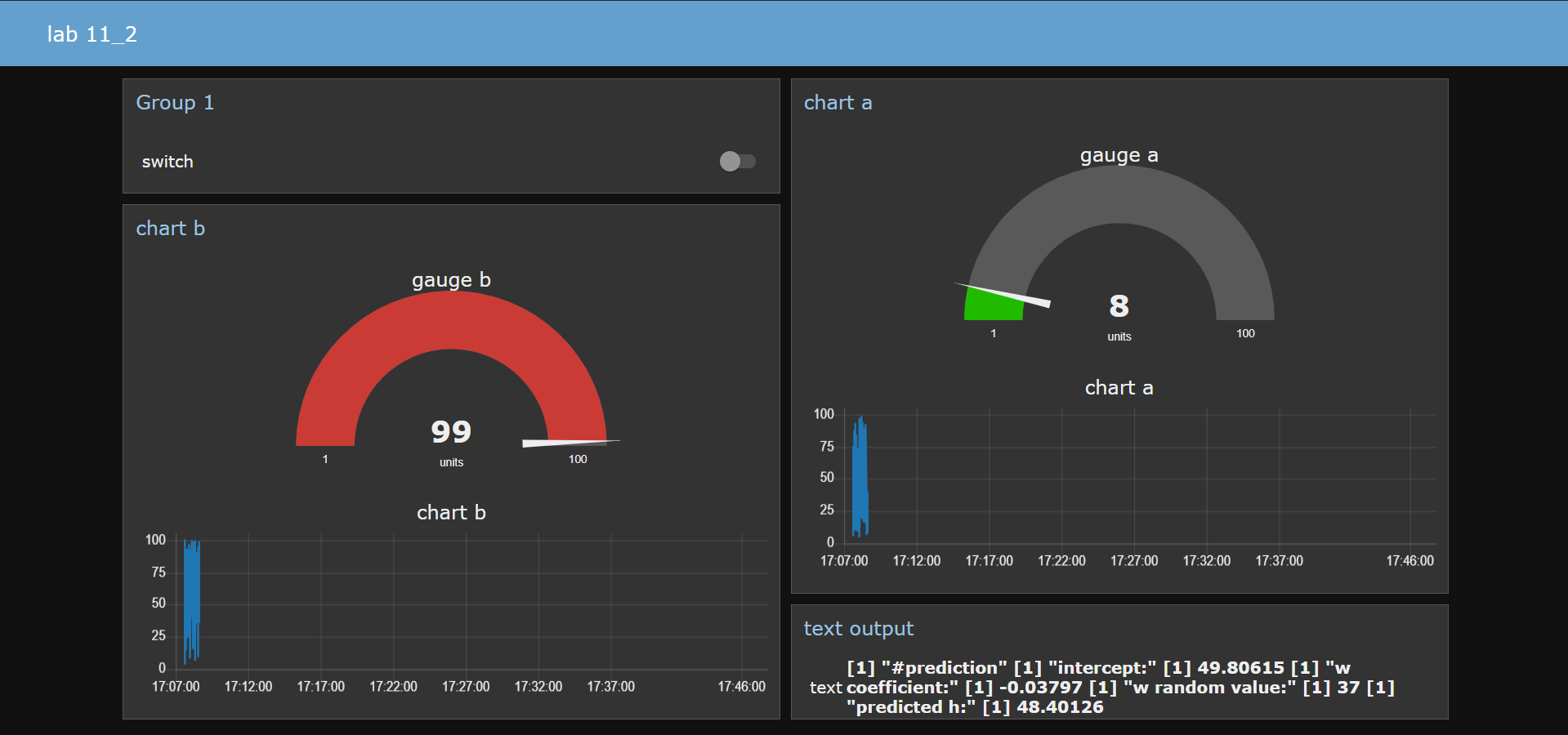
**Output:**



**Node Red flow for receiving data and display on dashboard:**

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**Dashboard output:**

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