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Tipe Data, Filter Data & Koneksi ke Database

1. Teori Singkat

R (juga dikenal sebagai GNU S) adalah bahasa pemrograman dan perangkat lunak untuk analisis statistika dan grafik. R dibuat oleh Ross Ihaka dan Robert Gentleman di Universitas Auckland, Selandia Baru, dan kini dikembangkan oleh R Development Core Team, di mana Chambers merupakan anggotanya. R dinamakan sebagian setelah nama dua pembuatnya (Robert Gentleman dan Ross Ihaka), dan sebagian sebagian dari permainan nama dari S.

Bahasa R kini menjadi standar de facto di antara statistikawan untuk pengembangan perangkat lunak statistika, serta digunakan secara luas untuk pengembangan perangkat lunak statistika dan analisis data. R merupakan bagian dari proyek GNU. Kode sumbernya tersedia secara bebas di bawah Lisensi Publik Umum GNU, dan versi biner prekompilasinya tersedia untuk berbagai sistem operasi. R menggunakan antarmuka baris perintah, meski beberapa antarmuka pengguna grafik juga tersedia.

R menyediakan berbagai teknik statistika (permodelan linier dan nonlinier, uji statistik klasik, analisis deret waktu, klasifikasi, klasterisasi, dan sebagainya) serta grafik. R, sebagaimana S, dirancang sebagai bahasa komputer sebenarnya, dan mengizinkan penggunaannya untuk menambah fungsi tambahan dengan mendefinisikan fungsi baru. Kekuatan besar dari R yang lain adalah fasilitas grafiknya, yang menghasilkan grafik dengan kualitas publikasi yang dapat memuat simbol matematika. R memiliki format dokumentasi seperti LaTeX, yang digunakan untuk menyediakan dokumentasi yang lengkap, baik secara daring (dalam berbagai format) maupun secara cetakan.



RStudio merupakan integrated development environment (IDE) khusus bagi bahasa pemrograman R. Software ini menyediakan R console, code editor dengan syntax highlighting, code completion dan direct execution, environment, history, connections, dan fitur-fitur tambahan lainnya seperti file manager, packages manager, help, plot viewer, hingga project versioning menggunakan git. RStudio sebenarnya memiliki dua versi, yaitu open source (gratis) dan commercial edition (berbayar). RStudio juga tidak hanya terbatas dalam bentuk aplikasi dekstop, melainkan terdapat versi RStudio Server, yaitu RStudio yang dapat diakses melalui browser yang terhubung dengan suatu jaringan komputer. Untuk saat ini, versi RStudio yang akan dijelaskan hanyalah RStudio open source berbasis dekstop saja.

2. Alat dan Bahan

Hardware : Laptop/PC

Software : R Studio

3. Elemen Kompetensi

Terdapat beberapa tipe data di R antara lain vektor, matriks dan data frame. Cantumkan setiap output yang dihasilkan dari console Rstudio, ke kolom yang sudah disediakan.

a. Latihan pertama – Vektor

1. Tuliskan Perintah berikut ini di window R Script:

```
a <- c(1,2,-5,0.3,6,-2,4) # numeric vector  
b <- c("one","two","three") # character vector  
c <- c(TRUE,TRUE,TRUE,FALSE,TRUE) #logical vector  
print(a)  
print(b)  
print(c)
```

Output:



```

1 a <- c(1,2,-5,0.3,6,-2,4) # numeric vector
2 b <- c("one","two","three") # character vector
3 c <- c(TRUE,TRUE,TRUE,FALSE,TRUE) #logical vector
4 print(a)
5 print(b)
6 print(c)
7

```

Console Output:

```

> a <- c(1,2,-5,0.3,6,-2,4) # numeric vector
> b <- c("one","two","three") # character vector
> c <- c(TRUE,TRUE,TRUE,FALSE,TRUE) #logical vector
> print(a)
[1] 1.0 2.0 -5.0 0.3 6.0 -2.0 4.0
> print(b)
[1] "one" "two" "three"
> print(c)
[1] TRUE TRUE TRUE FALSE TRUE
>

```

Global Environment Values:

Variable	Type	Value
a	num [1:7]	1 2 -5 0.3 6 -2 4
b	chr [1:3]	"one" "two" "three"
c	logi [1:5]	TRUE TRUE TRUE FALSE TRUE
x	int [1:10]	1 2 3 4 5 6 7 8 9 10
x1	int [1:9]	12 13 14 15 16 17 18 19 20

System Library:

Name	Description	Version
<input checked="" type="checkbox"/> base	The R Base Package	4.2.1
<input type="checkbox"/> boot	Bootstrap Functions (Originally by Angelo Canty for S)	1.3-28
<input type="checkbox"/> class	Functions for Classification	7.3-20
<input type="checkbox"/> cluster	"Finding Groups in Data": Cluster Analysis Extended Rousseeuw et al.	2.1.3
<input type="checkbox"/> codetools	Code Analysis Tools for R	0.2-18

b. Latihan Kedua – Matriks

1. Seluruh kolom dalam sebuah matriks harus memiliki tipe yang sama (numerik semua, karakter semua, dll) dan memiliki panjang yang sama.

***gunakan nama variable dengan nama anda masing-masing**

```

cells <- c(3,15,-27,38)
rgagah <- c("R1", "R2")
cgagah <- c("C1", "C2")
mymatrix <- matrix(cells, nrow=2, ncol=2, byrow=TRUE,
                    dimnames=list(rgagah, cgagah))
print(mymatrix)

```

Output:



The screenshot shows the R Studio environment. The script editor contains the following code:

```

1 a <- c(1,2,-5,0.3,6,-2,4) # numeric vector
2 b <- c("one","two","three") # character vector
3 c <- c(TRUE,TRUE,TRUE,FALSE,TRUE) # logical vector
4 print(a)
5 print(b)
6 print(c)
7
8 cells <- c(3,15,-27,38)
9 rgagah <- c("r1","r2")
10 cgagah <- c("c1","c2")
11 mymatrix <- matrix(cells, nrow=2, ncol=2, byrow=TRUE,
12                     dimnames=list(rgagah, cgagah))
13 print(mymatrix)
14

```

The console shows the output of the code:

```

> cells <- c(3,15,-27,38)
> rgagah <- c("r1","r2")
> cgagah <- c("c1","c2")
> mymatrix <- matrix(cells, nrow=2, ncol=2, byrow=TRUE,
+                     dimnames=list(rgagah, cgagah))
> print(mymatrix)
      c1 c2
r1    3 15
r2   -27 38

```

The Environment pane on the right shows the objects in the global environment:

Object	Class	Attributes
mymatrix	num	[1:2, 1:2] 3 -27 15 38
cells	num	[1:4] 3 15 -27 38
cgagah	chr	[1:2] "c1" "c2"
rgagah	chr	[1:2] "r1" "r2"

c. Latihan Ketiga – Data Frame

1. Mengubah data input menjadi data frame

***gunakan nama variable dengan nama anda masing-masing**

```

d <- c(1,2,3,4)
e <- c("red", "white", "red", NA)
f <- c(TRUE,TRUE,TRUE,FALSE)
data_gagah <- data.frame(d,e,f)
names(data_gagah) <- c("ID","Color","Passed") # variable names
print(data_gagah)

```

Output:



The screenshot displays the RStudio environment with the following components:

- Source Editor:** Contains R code for creating vectors, a matrix, and a data frame. The code is as follows:


```

1 a <- c(1,2,-5,0,3,6,-2,4) # numeric vector
2 b <- c("one","two","three") # character vector
3 c <- c(TRUE,TRUE,TRUE,FALSE,TRUE) #logical vector
4 print(a)
5 print(b)
6 print(c)
7 #=====
8 cells <- c(3,15,-27,38)
9 rgagah <- c("R1", "R2")
10 cgagah <- c("c1", "c2")
11 mymatrix <- matrix(cells, nrow=2, ncol=2, byrow=TRUE,
12                     dimnames=list(rgagah, cgagah))
13 print(mymatrix)
14 #=====
15 d <- c(1,2,3,4)
16 e <- c("red", "white", "red", NA)
17 f <- c(TRUE,TRUE,TRUE,FALSE)
18 data_gagah <- data.frame(d,e,f)
19 names(data_gagah) <- c("ID","color","Passed") # variable names
20 print(data_gagah)
21

```
- Environment Pane:** Shows the variable `data_gagah` with 4 observations and 3 variables. The values are:

Variable	Value
d	num [1:4] 1 2 3 4
e	chr [1:4] "red" "white" "red" NA
f	logi [1:4] TRUE TRUE TRUE FALSE
- Console:** Shows the output of the code execution:


```

> d <- c(1,2,3,4)
> e <- c("red", "white", "red", NA)
> f <- c(TRUE,TRUE,TRUE,FALSE)
> data_gagah <- data.frame(d,e,f)
> names(data_gagah) <- c("ID","color","Passed") # variable names
> print(data_gagah)
  ID color Passed
1  1  red    TRUE
2  2 white    TRUE
3  3  red    TRUE
4  4 <NA> FALSE

```
- Files Pane:** Shows the system library with the following packages:

Package	Description	Version
<input checked="" type="checkbox"/> base	The R Base Package	4.2.1
<input type="checkbox"/> boot	Bootstrap Functions (Originally by Angelo Canty for S)	1.3-28
<input type="checkbox"/> class	Functions for Classification	7.3-20
<input type="checkbox"/> cluster	"Finding Groups in Data": Cluster Analysis Extended Rousseeuw et al.	2.1.3
<input type="checkbox"/> codetools	Code Analysis Tools for R	0.2-18
<input type="checkbox"/> compiler	The R Compiler Package	4.2.1

2. Selanjutnya ketikkan perintah dibawah ini

```
data_gagah <- data.frame(id = letters[1:10], x = 1:10, y = 11:20)
print (data_gagah)
```

Output:



```

1 a <- c(1,2,-5,0.3,6,-2.4) # numeric vector
2 b <- c("one","two","three") # character vector
3 c <- c(TRUE,TRUE,TRUE,FALSE,TRUE) #logical vector
4 print(a)
5 print(b)
6 print(c)
7 #=====
8 cells <- c(3,15,-27,38)
9 rgagah <- c("R1", "R2")
10 cgagah <- c("C1", "C2")
11 mymatrix <- matrix(cells, nrow=2, ncol=2, byrow=TRUE,
12                     dimnames=list(rgagah, cgagah))
13 print(mymatrix)
14 #=====
15 d <- c(1,2,3,4)
16 e <- c("red", "white", "red", NA)
17 f <- c(TRUE,TRUE,TRUE,FALSE)
18 data_gagah <- data.frame(d,e,f)
19 names(data_gagah) <- c("ID","color","Passed") # variable names
20 print(data_gagah)
21 #=====
22 data_gagah <- data.frame(id = letters[1:10], x = 1:10, y = 11:20)
23 print (data_gagah)

```

Console output:

```

> data_gagah <- data.frame(id = letters[1:10], x = 1:10, y = 11:20)
> print (data_gagah)
  id x y
1 a 1 11
2 b 2 12
3 c 3 13
4 d 4 14
5 e 5 15
6 f 6 16
7 g 7 17
8 h 8 18
9 i 9 19
10 j 10 20
> view(data_gagah)

```

Environment window shows data_gagah with 10 observations and 3 variables (id, x, y).

Files window shows the System Library with various R packages installed.

Beberapa fungsi penting terkait data frame :

head() - shows first 6 rows

tail() - shows last 6 rows

dim() - returns the dimensions of data frame (i.e. number of rows and number of columns)

nrow() - number of rows

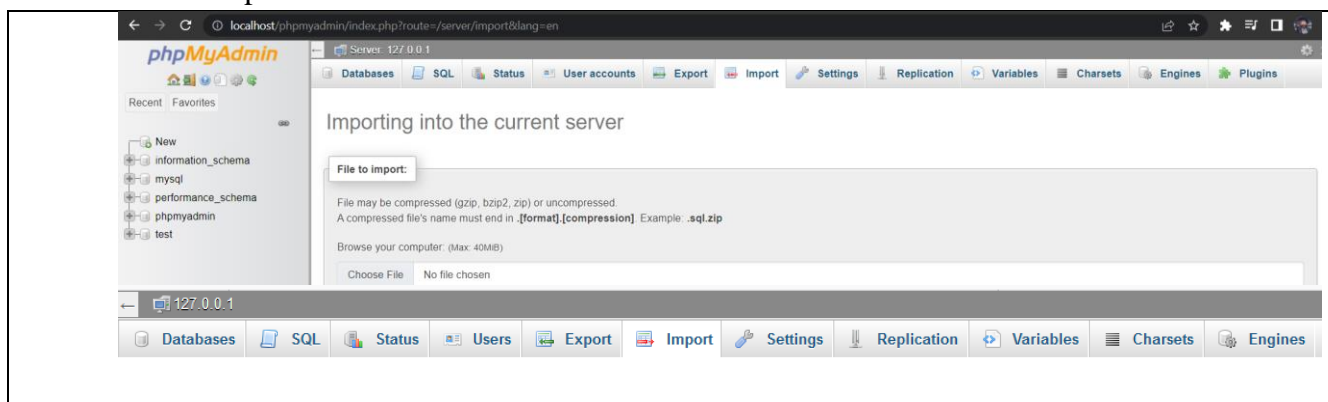
ncol() - number of columns

str() - structure of data frame - name, type and preview of data in each column

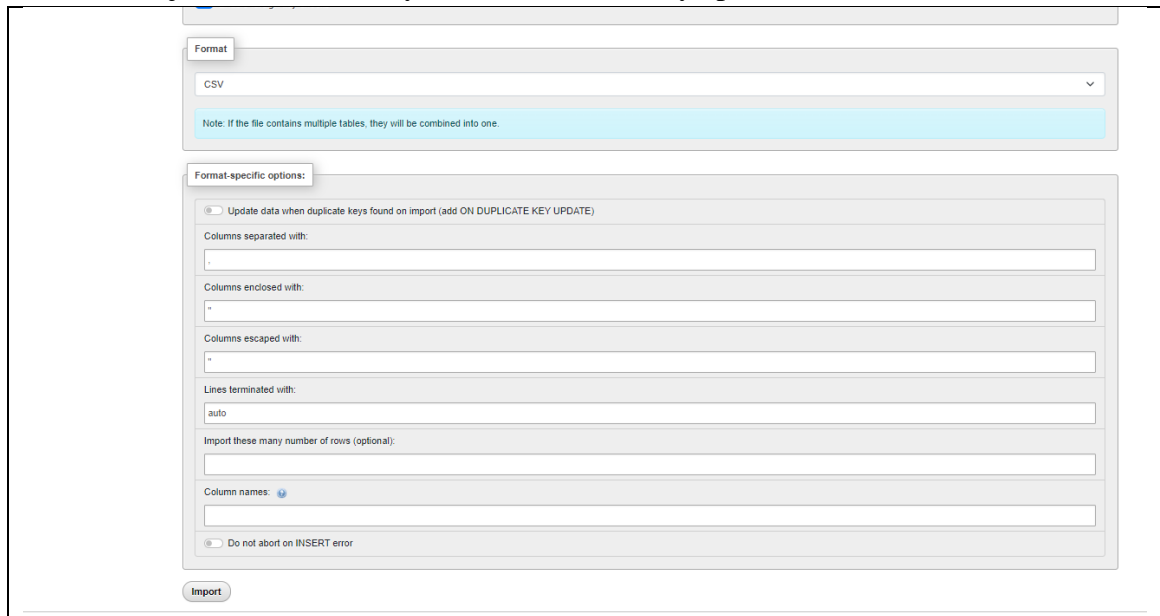
names() - shows the names attribute for a data frame, which gives the column names.

d. Latihan Keempat – Koneksi ke Database

1. Buat sebuah nama database terlebih dahulu dengan nama houseprices di phpmyadmin, Lalu klik menu import



2. Pilih file yang ingin di import ke database (untuk file nama_excel.csv), Ceklis the first line of the file contains the table column name untuk membuat baris pertama pada file excel tersebut menjadi nama atributnya atau nama kolomnya pada database.



The screenshot displays a web-based interface for importing data into a database. At the top, there is a 'Format' section with a dropdown menu set to 'CSV'. Below this, a light blue note states: 'Note: If the file contains multiple tables, they will be combined into one.' The main section is titled 'Format-specific options:' and contains several settings: a checkbox for 'Update data when duplicate keys found on import (add ON DUPLICATE KEY UPDATE)' which is currently unchecked; a text input for 'Columns separated with:' containing a comma; a text input for 'Columns enclosed with:' containing a double quote; a text input for 'Columns escaped with:' containing a backslash; a text input for 'Lines terminated with:' containing 'auto'; a text input for 'Import these many number of rows (optional):' which is empty; a text input for 'Column names:' with a small icon to its left; and a checkbox for 'Do not abort on INSERT error' which is checked. At the bottom left of the form is an 'Import' button.

3. Klik go, Rename nama tabel sesuai dengan nama anda



Server: 127.0.0.1 » Database: houseprices » Table: gaga_houseprices

Browse Structure SQL Search Insert Export Import Priv

⚠ Current selection does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not available.

✓ Showing rows 0 - 24 (128 total, Query took 0.0003 seconds.)

`SELECT * FROM gaga_houseprices``

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

1 > >> ☐ Show all Number of rows: 25 Filter rows: Search this table

Extra options

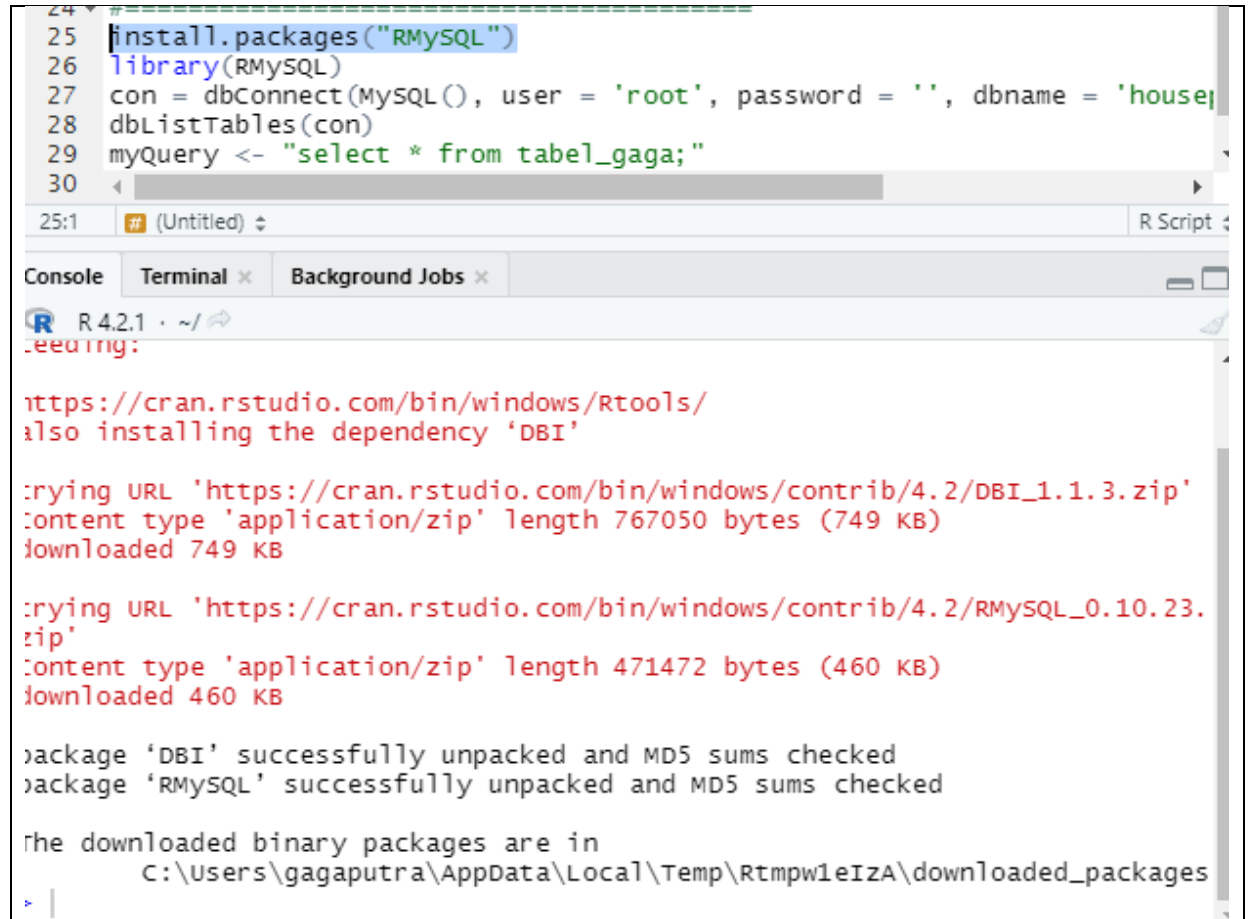
Price	SqFt	Bedrooms	Bathrooms	Offers	Brick	Neighborhood
114300	1790	2	2	2	No	East
114200	2030	4	2	3	No	East
114800	1740	3	2	1	No	East
94700	1980	3	2	3	No	East
119800	2130	3	3	3	No	East
114600	1780	3	2	2	No	North
151600	1830	3	3	3	Yes	West
150700	2160	4	2	2	No	West
119200	2110	4	2	3	No	East
104000	1730	3	3	3	No	East
132500	2030	3	2	3	Yes	East
123000	1870	2	2	2	Yes	East
102600	1910	3	2	4	No	North
126300	2150	3	3	5	Yes	North
176800	2590	4	3	4	No	West
145800	1780	4	2	1	No	West
147100	2190	3	3	4	Yes	East
83600	1990	3	3	4	No	North
111400	1700	2	2	1	Yes	East
167200	1920	3	3	2	Yes	West
116200	1790	3	2	3	No	East

Console



4. Kembali ke R Studio, lalu instal dahulu library yang dibutuhkan pada RStudio. Jika belum tersedia, maka lakukan instruksi:

`install.packages("RMySQL")`



```
25 install.packages("RMySQL")
26 library(RMySQL)
27 con = dbConnect(MySQL(), user = 'root', password = '', dbname = 'houseprices', host = 'localhost')
28 dbListTables(con)
29 myQuery <- "select * from tabel_gaga;"
30
```

Console

```
R 4.2.1 · ~/
Installing:
https://cran.rstudio.com/bin/windows/Rtools/
also installing the dependency 'DBI'

trying URL 'https://cran.rstudio.com/bin/windows/contrib/4.2/DBI_1.1.3.zip'
content type 'application/zip' length 767050 bytes (749 KB)
downloaded 749 KB

trying URL 'https://cran.rstudio.com/bin/windows/contrib/4.2/RMySQL_0.10.23.zip'
content type 'application/zip' length 471472 bytes (460 KB)
downloaded 460 KB

package 'DBI' successfully unpacked and MD5 sums checked
package 'RMySQL' successfully unpacked and MD5 sums checked

The downloaded binary packages are in
C:\Users\gagaputra\AppData\Local\Temp\Rtmpw1eIzA\downloaded_packages
>
```

5. Lalu jalankan perintah dibawah ini

```
library(RMySQL)
con = dbConnect(MySQL(), user = 'root', password = "", dbname = 'houseprices', host = 'localhost')
dbListTables(con)
myQuery <- "select * from nama;"
df <- dbGetQuery(con, myQuery)
```

Output:



The screenshot shows the R Studio environment. The script editor on the left contains the following code:

```
17 f <- c(TRUE,TRUE,TRUE,FALSE)
18 data_gagah <- data.frame(d,e,f)
19 names(data_gagah) <- c("ID","color","Passed") # variable names
20 print(data_gagah)
21 -
22 data_gagah <- data.frame(id = letters[1:10], x = 1:10, y = 11:20)
23 print(data_gagah)
24 -
25 install.packages('RMySQL')
26 library(RMySQL)
27 con <- dbConnect(MySQL(), user = 'root', password = '', dbname = 'csv_db')
28 dbListTables(con)
29 myQuery <- "select * from gaga__houseprices;"
30 -
31 library(dplyr)
32 df1 <- filter(df, Brick == "No")
33 print(df1)
34 -
35 library(dplyr)
36 df2 <- filter(df, Brick == "No" | Neighborhood == "East")
37 print(df2)
38 -
39 install.packages('RMySQL')
40 require(RMySQL) #if already installed
41 con <- dbConnect(RMySQL::MySQL(), host = "localhost", dbname = "extraction")
42 test_extraction <- dbReadTable(con, "utilisateurs") #utilisateurs is a
43
```

The console on the bottom left shows the following error messages:

```
R 4.2.1 ~ /
ces , :
could not find function "dbConnect"
> rgagah <- c("R1", "R2")
> library(RMySQL)
Loading required package: DBI
> con <- dbConnect(MySQL(), user = 'root', password = '', dbname = 'houseprices', host = 'localhost')
Error in .local(drv, ...) :
Failed to connect to database: Error: Unknown database 'houseprices'
> library(RMySQL)
> con <- dbConnect(MySQL(), user = 'root', password = '', dbname = 'houseprices', host = 'localhost')
Error in .local(drv, ...) :
Failed to connect to database: Error: Unknown database 'houseprices'
> con <- dbConnect(MySQL(), user = 'root', password = '', dbname = 'csv_db', host = 'localhost')
> dbListTables(con)
[1] "gaga__houseprices"
> myQuery <- "select * from gaga__houseprices;"
>
```

The Environment pane on the right shows the following data objects:

Object	Class	Value
con	Formal class 'MySQLConnection'	..@ Id: int [1:2] 0 0
myQuery	chr	"select * from gaga__houseprices;"
rgagah	chr	[1:2] "R1" "R2"

The Packages pane on the bottom right shows the following installed packages:

Package	Description	Version
base	The R Base Package	4.2.1
boot	Bootstrap Functions (Originally by Angelo Canty for S)	1.3-28
class	Functions for Classification	7.3-20
cli	Helpers for Developing Command Line Interfaces	3.4.0
cluster	"Finding Groups in Data": Cluster Analysis Extended Rousseeuw et al.	2.1.3
codetools	Code Analysis Tools for R	0.2-18
compiler	The R Compiler Package	4.2.1
datasets	The R Datasets Package	4.2.1
DBI	R Database Interface	1.1.3
dplyr	A Grammar of Data Manipulation	1.0.10

e. Latihan Kelima – Teknik Filter Data

1. Jalankan perintah dibawah ini:

***Perintah ini akan menampilkan 86 baris data hasil filter.**

```
library(dplyr)
df<-filter(df,Brick=="No")
print(df)
```

Output:



```

32 install.packages("dplyr")
33 library(dplyr)
34 df<-filter(df,Brick=="No")
35 print(df)
36 #=====
37 library(dplyr)
38 df<-filter(df,Brick=="No" | Neighborhood=="East")
39 print(df)
40 #=====
41
36:10 (Untitled) R Script

```

Console Terminal Background Jobs

```

R 4.2.1 ~ /
> url<-usgetquery(con,myquery)
> library(dplyr)
> df<- filter(df,Brick=="No")
> print(df)

```

	Price	SqFt	Bedrooms	Bathrooms	offers	Brick	Neighborhood
1	114300	1790	2	2	2	No	East
2	114200	2030	4	2	3	No	East
3	114800	1740	3	2	1	No	East
4	94700	1980	3	2	3	No	East
5	119800	2130	3	3	3	No	East
6	114600	1780	3	2	2	No	North
7	150700	2160	4	2	2	No	West
8	119200	2110	4	2	3	No	East
9	104000	1730	3	3	3	No	East
10	102600	1910	3	2	4	No	North
11	176800	2590	4	3	4	No	West
12	145800	1780	4	2	1	No	West
13	83600	1990	3	3	4	No	North
14	116200	1790	3	2	3	No	East
15	113800	2000	3	2	4	No	North
16	91700	1690	3	2	3	No	North
17	149300	2290	4	3	3	No	North
18	137000	2000	4	2	3	No	West

2. Jalankan perintah dibawah ini:

***Perintah ini akan menampilkan 105 baris data hasil filter.**

```

library(dplyr)
df<-filter(df,Brick=="No" , Neighborhood=="East")
print(df)

```

Output: (uda saya beneran sedikit ya kak sc nya 😊)

```

36 print(df)
37 #=====
38 library(dplyr)
39 df<-filter(df,Brick=="No" , Neighborhood == "East")
40 print(df)
41 #=====
42
40:10 (Untitled) R Script

```

Console Terminal Background Jobs

```

R 4.2.1 ~ /
> library(dplyr)
> df<-filter(df,Brick=="No" , Neighborhood == "East")
> print(df)

```

	Price	SqFt	Bedrooms	Bathrooms	offers	Brick	Neighborhood
1	114300	1790	2	2	2	No	East
2	114200	2030	4	2	3	No	East
3	114800	1740	3	2	1	No	East
4	94700	1980	3	2	3	No	East
5	119800	2130	3	3	3	No	East
6	114600	1780	3	2	2	No	North
7	150700	2160	4	2	2	No	West
8	119200	2110	4	2	3	No	East
9	104000	1730	3	3	3	No	East
10	102600	1910	3	2	4	No	North
11	176800	2590	4	3	4	No	West
12	145800	1780	4	2	1	No	West
13	83600	1990	3	3	4	No	North
14	116200	1790	3	2	3	No	East
15	113800	2000	3	2	4	No	North
16	91700	1690	3	2	3	No	North
17	149300	2290	4	3	3	No	North
18	137000	2000	4	2	3	No	West

Files Plots Packages Help Viewer Presentations

System Library

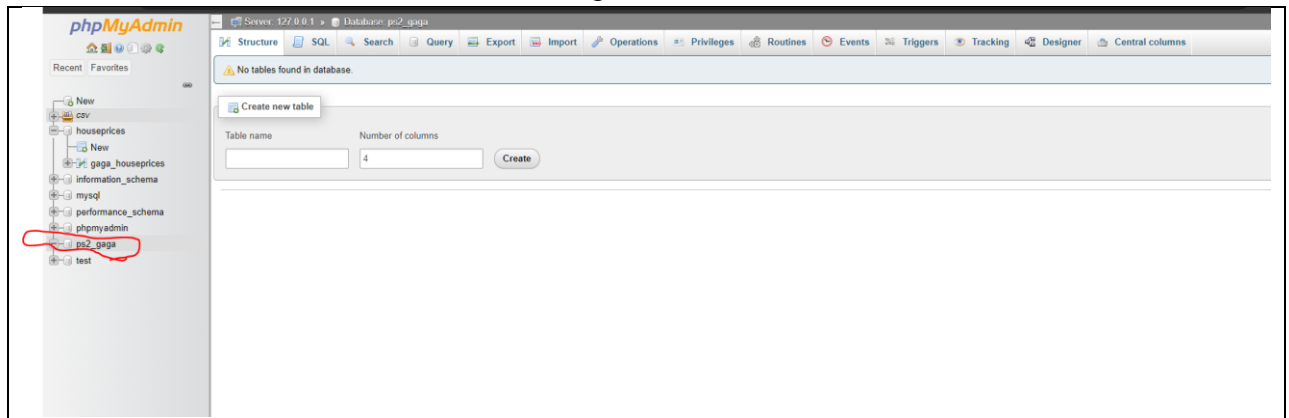
- ☒ base The R Base Package
- ☐ boot Bootstrap Functions (Ori...
- ☐ class Functions for Classificati...
- ☐ cli Helpers for Developing C...
- ☐ cluster "Finding Groups in Data"...
- ☐ codetools Code Analysis Tools for f...
- ☐ compiler The R Compiler Package
- ☐ datasets The R Datasets Package
- ☒ DBI R Database Interface
- ☒ dplyr A Grammar of Data Man...
- ☐ ellipsis Tools for Working with ...
- ☐ fansi ANSI Control Sequence...
- ☐ foreign Read Data Stored by 'Mi...



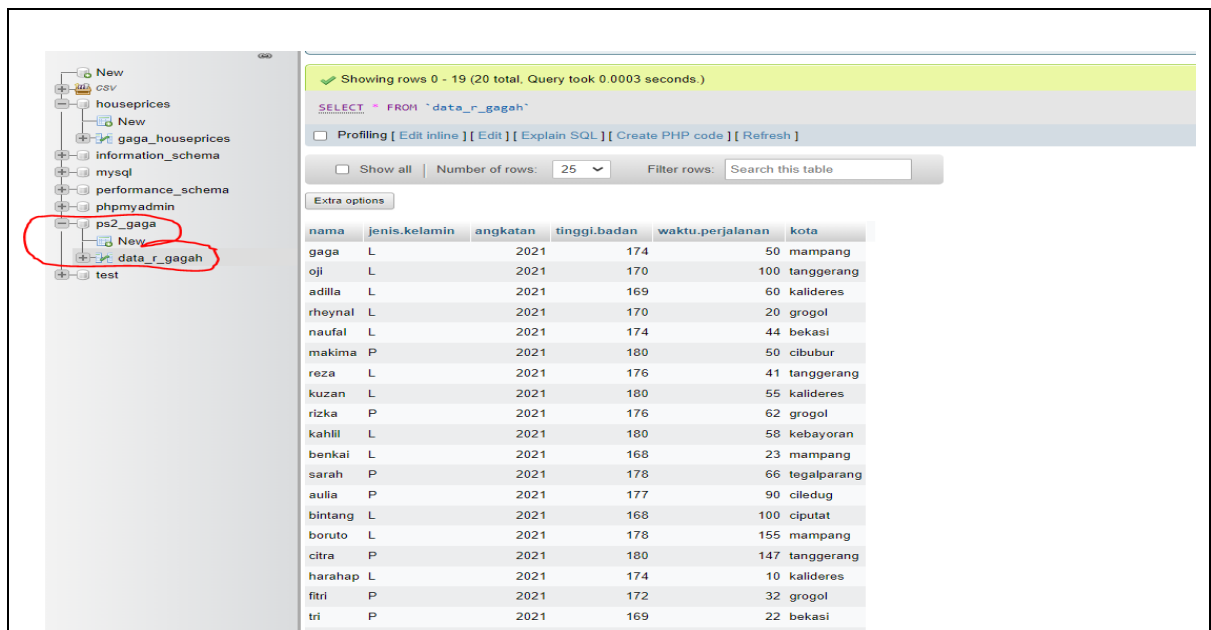
f. Latihan Keenam – Tugas

Buat sebuah database serta tabel di dalamnya (bisa gunakan data teman dipraktikum ke 1). Lakukan koneksi R ke database serta berikan beberapa filter data sesuai yang anda inginkan. Tampilkan data tersebut

1. Buatlah terlebih dahulu Database baru dengan format PS2[NamaAnda]



2. Import file berformat csv yang telah anda buat sebelumnya di Praktikum 1, dimana file tersebut berisi 6 kolom dan 20 baris data.



3. Koneksikan R ke Database tersebut sebagaimana yang telah anda lakukan pada Elemen Kompetensi 1 dimodul kedua ini dengan menyesuaikan kembali nama Database baru yang sudah dibuat.

```

25 install.packages('RMySQL')
26 library(RMySQL)
27 con = dbConnect(MySQL(), user = 'root', password = '', dbname = 'PS2_gaga', host = 'localhost')
28 dbListTables(con)
29 myQuery <- "select * from data_r_gagah;"
30 df<-dbGetQuery(con,myQuery)
31 #=====
32
33 install.packages("dplyr")
34 library(dplyr)
35 df<- filter(df,Brick=="No")
36 print(df)
37 #=====
38 library(dplyr)
39 df<-filter(df,Brick=="No" , Neighborhood == "East")
40 print(df)
41 #=====
30:28 (Untitled)

```

```

R 4.2.1 ~ /
• library(RMySQL)
• con = dbConnect(MySQL(), user = 'root', password = '', dbname = 'PS2_gaga', host = 'localhost')
• dbListTables(con)
[1] "data_r_gagah"
• myQuery <- "select * from data_r_gagah;"
• df<-dbGetQuery(con,myQuery)
•

```

4. Lakukan filter data terhadap Kolom Gender, untuk melihat berapa baris data Pria/Wanita (Pilih salah 1).

```

37 #=====
38 library(dplyr)
39 df<-filter(df,jenis.kelamin=="P")
40 print(df)
41 #=====
40:10 (Untitled)

```

```

R 4.2.1 ~ /
> library(RMySQL)
> con = dbConnect(MySQL(), user = 'root', password = '', dbname = 'PS2_gaga', host = 'localhost')
> dbListTables(con)
[1] "data_r_gagah"
> myQuery <- "select * from data_r_gagah;"
> df<-dbGetQuery(con,myQuery)
> library(dplyr)
> df<-filter(df,jenis.kelamin=="P")
> print(df)
  nama jenis.kelamin angkatan tinggi.badan waktu.perjalanan      kota
1 makima            P    2021      180          50      cibubur
2 rizka             P    2021      176          62      grogol
3 sarah             P    2021      178          66 tegalparang
4 aulia             P    2021      177          90      ciledug
5 citra             P    2021      180         147 tanggerang
6 fitri             P    2021      172          32      grogol
7 tri               P    2021      169          22      bekasi
8 binti             P    2021      165          23      cibubur
>

```

5. Lampirkan Screenshot

☐ Hasil import file kedalam Database



Showing rows 0 - 19 (20 total, Query took 0.0003 seconds.)

SELECT * FROM `data_r_gagah`

Number of rows: 25

nama	jenis_kelamin	angkatan	tinggi_badan	waktu_perjalanan	kota
gaga	L	2021	174	50	mampang
oji	L	2021	170	100	tanggerang
adilla	L	2021	169	60	kalideres

□ Berhasilnya koneksi R ke Database

```

10 cgagah <- c("1", "2")
11 mymatrix <- matrix(cgagah, nrow=2, ncol=2, byrow=TRUE,
12                     dimnames=list(rgagah, cgagah))
13 print(mymatrix)
14 #>
15 d <- c(1,2,3,4)
16 e <- c("red", "white", "red", NA)
17 f <- c(TRUE, TRUE, FALSE)
18 data_gagah <- data.frame(d,e,f)
19 names(data_gagah) <- c("id", "color", "passed") # variable names
20 print(data_gagah)
21 #>
22 data_gagah <- data.frame(id = letters[1:10], x = 1:10, y = 11:20)
23 print(data_gagah)
24 #>
25 install.packages("mysql")
26 library(mysql)
27 con <- dbConnect(mysql(), user = "root", password = "", dbname = "ps2_gaga", host = "localhost")
28 dbListTables(con)
29 myQuery <- "select * from data_r_gagah"
30 df <- dbGetQuery(con, myQuery)
31 #>
32
33 install.packages("dplyr")
34 library(dplyr)
35 df <- filter(df, Brick=="no")
36 print(df)
37 #>
38 library(dplyr)
39 df <- filter(df, jenis_kelamin=="P")
40 print(df)
41 #>

```

Environment: Global Environment

con: Formal class 'MySQLConnection'

data_gagah: 10 obs. of 3 variables

df: 8 obs. of 6 variables

values

d: num [1:4] 1 2 3 4

e: chr [1:4] "red" "white" "red" NA

f: logi [1:4] TRUE TRUE FALSE

myQuery: "select * from data_r_gagah"

rgagah: chr [1:2] "k1" "k2"

□ Kode serta hasil filter di RStudio

Kode:

```

library(dplyr)
df <- filter(df, jenis_kelamin == "P")
print(df)

```

Hasil:

```

> library(dplyr)
> df <- filter(df, jenis_kelamin == "P")
> print(df)
  nama jenis_kelamin angkatan tinggi_badan waktu_perjalanan kota
1 makima           P    2021         180          50 cibubur
2 rizka            P    2021         176          62 grogol
3 sarah            P    2021         178          66 tegalparang
4 aulia            P    2021         177          90 ciledug
5 citra            P    2021         180         147 tanggerang
6 fitri            P    2021         172          32 grogol
7 tri              P    2021         169          22 bekasi
8 binti            P    2021         165          23 cibubur

```



4. File Praktikum

Github Repository:

https://github.com/gagahputrabangsa/PS_GagaPutraB.git

5. Soal Latihan

Soal:

1. Ada berapa tipe data yang data di deklarasikan oleh Rstudio?
2. Bagaimana cara memanggil sebuah tabel di dalam database ke Rstudio?

Jawaban:

1. Ada 5 tipe data yang dapat di deklarasi, antara lain:

1. Vektor

2. Matriks

3. Array

4. List

5. Faktor

2. Dengan cara berikut:

```
library(RMySQL) con = dbConnect(MySQL(), user = 'root', password = "", dbname =  
'nama_database', host = 'localhost') dbListTables(con) myQuery <- "select * from  
nama_berkas;" nama_variabel <- dbGetQuery(con, myQuery)
```

6. Kesimpulan

- a. Dalam pengerjaan praktikum Statistika, kita belajar menghitung matrix, belajar mengupload file csv ke db dan mengaksesnya menggunakan Rstudio.
- b. Kita juga dapat mengetahui mengetahui bahwa kita bisa membuat tabel dri db dengan library (RMySQL).

7. Cek List (✓)



No	Elemen Kompetensi	Penyelesaian	
		Selesai	Tidak Selesai
1.	Latihan Pertama	V	
2.	Latihan Kedua	V	
3.	Latihan Ketiga	V	
4.	Latihan Keempat	V	
5.	Latihan Kelima	V	
6.	Latihan Keenam	V	

8. Formulir Umpan Balik

No	Elemen Kompetensi	Waktu Pengerjaan	Kriteria
1.	Latihan Pertama	5 Menit	1
2.	Latihan Kedua	10 Menit	1
3.	Latihan Ketiga	25 Menit	1
4.	Latihan Keempat	5 Menit	1
5.	Latihan Kelima	4 Menit	2
6.	Latihan Keenam	2 Menit	2

Keterangan:

1. Menarik
2. Baik
3. Cukup
4. Kurang

