

**SISTEM BASIS DATA
TUGAS**

**“PROJECT AKHIR”
(KELAS B)**



Oleh :

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**INFORMATIKA
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SOAL

1. Buat DDL Create untuk membuat database (Minimal 5 Tabel) !

```
Command Prompt - mysql -u root -p
Microsoft Windows [Version 10.0.18363.1256]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\ASUS>cd
C:\>cd xampp
C:\xampp>cd mysql
C:\xampp\mysql>cd bin
C:\xampp\mysql\bin>mysql -u root -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 102
Server version: 10.4.17-MariaDB mariadb.org binary distribution
Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> show databases;
+-----+
| Database |
+-----+
| cbt      |
| information_schema |
| kampus  |
| klinik_sehat_walafiat |
| mysql   |
| perbankan |
| performance_schema |
| perkuliahan |
| phpmyadmin |
| relational |
| test     |
+-----+
11 rows in set (0.001 sec)

MariaDB [(none)]> use kampus;
Database changed
MariaDB [kampus]> create table mahasiswa(
  -> id_mahasiswa integer primary key,
  -> nama_mahasiswa varchar(45) not null,
  -> jenis_kelamin varchar(10) not null,
  -> nohp_mahasiswa varchar(15) not null,
  -> alamat_mahasiswa varchar(255));
Query OK, 0 rows affected (0.032 sec)

MariaDB [kampus]> create table jurusan(
```

```
MariaDB [kampus]> create table jurusan(
  -> id_jurusan integer primary key,
  -> id_mahasiswaFK integer references mahasiswa(id_mahasiswa)
  -> on delete set null on update cascade,
  -> nama_jurusan varchar(25) not null);
Query OK, 0 rows affected (0.027 sec)

MariaDB [kampus]> create table dosen(
  -> id_dosen integer primary key,
  -> id_matakuliahFK integer references matakuliah(id_matakuliah)
  -> on delete set null on update cascade,
  -> nama_dosen varchar(45) not null,
  -> nohp_dosen varchar(15) not null,
  -> alamat_dosen varchar(255));
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server version for the right syntax to use near '(255))' at line 7

MariaDB [kampus]> create table dosen(
  -> id_dosen integer primary key,
  -> id_matakuliahFK integer references matakuliah(id_matakuliah)
  -> on delete set null on update cascade,
  -> nama_dosen varchar(45) not null,
  -> nohp_dosen varchar(15) not null,
  -> alamat_dosen varchar(255));
Query OK, 0 rows affected (0.028 sec)

MariaDB [kampus]> create table jadwal(
  -> id_jadwal integer primary key,
  -> id_matakuliahFK integer references matakuliah(id_matakuliah)
  -> on delete set null on update cascade,
  -> tanggal datetime not null default current_timestamp,
  -> ruangan varchar(25) not null);
Query OK, 0 rows affected (0.024 sec)

MariaDB [kampus]> create table mahasiswa_has_matakuliah(
  -> id_mahasiswaFK integer references mahasiswa(id_mahasiswa)
  -> on delete cascade on update cascade,
  -> id_matakuliahFK integer references matakuliah(id_matakuliah)
  -> on delete cascade on update cascade,
  -> primary key(id_mahasiswaFK, id_matakuliahFK));
Query OK, 0 rows affected (0.028 sec)

MariaDB [kampus]> show tables;
+-----+
| Tables_in_kampus |
+-----+
| dosen             |
| jadwal            |
| jurusan           |
| mahasiswa         |
| mahasiswa_has_matakuliah |
+-----+
```

```

Command Prompt - mysql -u root -p

jurusan
mahasiswa
mahasiswa_has_matakuliah
5 rows in set (0.001 sec)

MariaDB [kampus]> desc mahasiswa;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| id_mahasiswa | int(11) | NO | PRI | NULL | |
| nama_mahasiswa | varchar(45) | NO | | NULL | |
| jenis_kelamin | varchar(10) | NO | | NULL | |
| nohp_mahasiswa | varchar(15) | NO | | NULL | |
| alamat_mahasiswa | varchar(255) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.016 sec)

MariaDB [kampus]> desc jurusan;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| id_jurusan | int(11) | NO | PRI | NULL | |
| id_mahasiswaFK | int(11) | YES | | NULL | |
| nama_jurusan | varchar(25) | NO | | NULL | |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.012 sec)

MariaDB [kampus]> desc dosen;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| id_dosen | int(11) | NO | PRI | NULL | |
| id_matakuliahFK | int(11) | YES | | NULL | |
| nama_dosen | varchar(45) | NO | | NULL | |
| nohp_dosen | varchar(15) | NO | | NULL | |
| alamat_dosen | varchar(255) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.015 sec)

MariaDB [kampus]> desc jadwal;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| id_jadwal | int(11) | NO | PRI | NULL | |
| id_matakuliahFK | int(11) | YES | | NULL | |
| tanggal | datetime | NO | | current_timestamp() | |
| ruangan | varchar(25) | NO | | NULL | |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.019 sec)

```

2. Buat DML Insert table, masing-masing table minimal 20 data !

```

Run SQL query/queries on table kampus.mahasiswa:

1 INSERT INTO `mahasiswa` (`id_mahasiswa`, `nama_mahasiswa`, `jenis_kelamin`, `nohp_mahasiswa`, `alamat_mahasiswa`)
VALUES ('20019001', 'Dinda', 'Perempuan', '081234567891', 'Salatiga'), ('20019002', 'Laura', 'Perempuan',
'081234567892', 'Salatiga'), ('20019003', 'Agustin', 'Perempuan', '081234567893', 'Salatiga'), ('20019004',
'Ahlan', 'laki-laki', '081234567894', 'Semarang'), ('20019005', 'Wasahlan', 'laki-laki', '081234567895',
'Ambarawa'), ('20019006', 'Hadaris', 'laki-laki', '081234567896', 'Salatiga'), ('20019007', 'Rina', 'Perempuan',
'081234567897', 'Ambarawa'), ('20019008', 'Danang', 'laki-laki', '081234567898', 'Semarang'), ('20019009', 'Lesti',
'Perempuan', '081234567899', 'Surakarta'), ('20019010', 'Joko', 'laki-laki', '081234567810', 'Surakarta'),
('20019011', 'Wisnu', 'laki-laki', '081234567811', 'Surakarta'), ('20019012', 'Handoko', 'laki-laki',
'081234567812', 'Bojolanli'), ('20019013', 'Widi', 'laki-laki', '081234567813', 'Semarang'), ('20019014', 'Dani',
'Perempuan', '081234567814', 'Bojolanli'), ('20019015', 'Andika', 'laki-laki', '081234567815', 'Cilacap'),
('20019016', 'Siti', 'Perempuan', '081234567816', 'Surakarta'), ('20019017', 'Sundari', 'Perempuan',
'081234567817', 'Klaten'), ('20019018', 'Eta', 'Perempuan', '081234567818', 'Ambarawa'), ('20019019', 'Devy',
'Perempuan', '081234567819', 'Semarang'), ('20019020', 'Indah', 'Perempuan', '08123456781', 'Salatiga')

```

localhost / 127.0.0.1 / kampus / x (129) WhatsApp x +

localhost/phpmyadmin/tbl_sql.php?db=kampus&table=dosen

phpMyAdmin

Server: 127.0.0.1 Database: kampus Table: dosen

Run SQL query/queries on table kampus.dosen:

```
1 INSERT INTO `dosen` (`id_dosen`, `id_matakuliahFK`, `nama_dosen`, `nohp_dosen`, `alamat_dosen`) VALUES ('101', '201', 'Sindika', '081111111111', 'Surakarta'), ('102', '201', 'Amalia', '081111111112', 'Semarang'), ('103', '201', 'Bambang', '081111111113', 'Bojolali'), ('104', '201', 'Sugianto', '081111111114', 'Klaten'), ('105', '201', 'Sumini', '081111111115', 'Bandung'), ('106', '202', 'Darti', '081111111116', 'Semarang'), ('107', '202', 'Dika', '081111111117', 'Bojolali'), ('108', '202', 'Denis', '081111111118', 'Surakarta'), ('109', '202', 'Deka', '081111111119', 'Salatiga'), ('110', '203', 'Sani', '0812345678920', 'Salatiga'), ('111', '204', 'Farel', '0812345678921', 'Semarang'), ('112', '205', 'Femi', '0812345678922', 'Bandung'), ('113', '206', 'Laila', '0812345678923', 'Klaten'), ('114', '207', 'Siska', '0812345678924', 'Bengkulu'), ('115', '208', 'Tutik', '0812345678925', 'Rawa Permai'), ('116', '209', 'Tisna', '0812345678926', 'Jakarta'), ('117', '210', 'Pandu', '0812345678927', 'Semarang'), ('118', '211', 'Dastan', '0812345678928', 'Solo'), ('119', '212', 'Sumini', '0812345678929', 'Surakarta'), ('120', '212', 'Mustika', '0812345678930', 'Solo');
```

Columns

id_dosen
id_matakuliahFK
nama_dosen
nohp_dosen
alamat_dosen

SELECT * SELECT INSERT UPDATE DELETE Clear Format Get auto-saved query

☐ Bind parameters

Bookmark this SQL query:

[Delimiter:] ☐ Show this query here again ☐ Retain query box ☐ Rollback when finished ☒ Enable foreign key checks Go

Console

localhost / 127.0.0.1 / kampus / x (130) WhatsApp x +

localhost/phpmyadmin/tbl_change.php?db=kampus&table=jadwal

phpMyAdmin

Server: 127.0.0.1 Database: kampus Table: jadwal

20 rows inserted

```
1 INSERT INTO `jadwal` (`id_jadwal`, `id_matakuliahFK`, `tanggal`, `ruangan`) VALUES ('401', '201', '2021-06-01 22:14:29', '301'), ('402', '202', '2021-06-02 22:14:29', '302'), ('403', '203', '2021-06-03 22:16:13', '303'), ('404', '204', '2021-06-04 22:16:13', '304'), ('405', '205', '2021-06-05 22:16:13', '305'), ('406', '206', '2021-06-06 22:16:13', '306'), ('407', '207', '2021-06-07 22:16:13', '307'), ('408', '208', '2021-06-08 22:16:13', '308'), ('409', '209', '2021-06-09 22:16:13', '309'), ('410', '210', '2021-06-10 22:16:13', '310'), ('411', '211', '2021-06-11 22:16:13', '311'), ('412', '212', '2021-06-12 22:16:13', '312'), ('413', '213', '2021-06-13 22:16:13', '313'), ('414', '214', '2021-06-14 22:16:13', '314'), ('415', '215', '2021-06-15 22:16:13', '315'), ('416', '216', '2021-06-16 22:16:13', '316'), ('417', '217', '2021-06-17 22:16:13', '317'), ('418', '218', '2021-06-18 22:16:13', '318'), ('419', '219', '2021-06-19 22:16:13', '319'), ('420', '220', '2021-06-20 22:16:13', '320') [...]
```

Columns

id_jadwal
id_matakuliahFK
tanggal
ruangan

SELECT * SELECT INSERT UPDATE DELETE Clear Format Get auto-saved query

☐ Bind parameters

Bookmark this SQL query:

[Delimiter:] ☐ Show this query here again ☐ Retain query box ☐ Rollback when finished ☒ Enable foreign key checks Go

Console

localhost / 127.0.0.1 / kampus / x (130) WhatsApp x +

localhost/phpmyadmin/tbl_change.php?db=kampus&table=jurusan

phpMyAdmin

Server: 127.0.0.1 » Database: kampus » Table: jurusan

20 rows inserted.

```
INSERT INTO `jurusan` (`id_jurusan`, `id_mahasiswaFK`, `nama_jurusan`) VALUES ('501', '20019001', 'Informatika'), ('502', '20019002', 'Informatika'), ('503', '20019003', 'Informatika'), ('504', '20019004', 'Informatika'), ('505', '20019005', 'Informatika'), ('506', '20019006', 'Informatika'), ('507', '20019007', 'Informatika'), ('508', '20019008', 'Informatika'), ('509', '20019009', 'Informatika'), ('510', '20019010', 'Informatika'), ('511', '20019011', 'Informatika'), ('512', '20019012', 'Informatika'), ('513', '20019013', 'Informatika'), ('514', '20019014', 'Informatika'), ('515', '20019015', 'Informatika'), ('516', '20019016', 'Informatika'), ('517', '20019017', 'Informatika'), ('518', '20019018', 'Informatika'), ('519', '20019019', 'Informatika'), ('520', '20019020', 'Informatika');
```

[Edit inline] [Edit] [Create PHP code]

Run SQL query/queries on table kampus.jurusan:

```
1 INSERT INTO `jurusan` (`id_jurusan`, `id_mahasiswaFK`, `nama_jurusan`) VALUES ('501', '20019001', 'Informatika'), ('502', '20019002', 'Informatika'), ('503', '20019003', 'Informatika'), ('504', '20019004', 'Informatika'), ('505', '20019005', 'Informatika'), ('506', '20019006', 'Informatika'), ('507', '20019007', 'Informatika'), ('508', '20019008', 'Informatika'), ('509', '20019009', 'Informatika'), ('510', '20019010', 'Informatika'), ('511', '20019011', 'Informatika'), ('512', '20019012', 'Informatika'), ('513', '20019013', 'Informatika'), ('514', '20019014', 'Informatika'), ('515', '20019015', 'Informatika'), ('516', '20019016', 'Informatika'), ('517', '20019017', 'Informatika'), ('518', '20019018', 'Informatika'), ('519', '20019019', 'Informatika'), ('520', '20019020', 'Informatika');
```

Columns: id_jurusan, id_mahasiswaFK, nama_jurusan

SELECT * SELECT INSERT UPDATE DELETE Clear Format Get auto-saved query

☐ Bind parameters

Bookmark this SQL query:

Delimiter: ; Show this query here again Retain query box Rollback when finished ☒ Enable foreign key checks Go

Console

localhost / 127.0.0.1 / kampus / x (129) WhatsApp x +

localhost/phpmyadmin/tbl_change.php?db=kampus&table=mahasiswa_has_matakuliah

phpMyAdmin

Server: 127.0.0.1 » Database: kampus » Table: mahasiswa_has_matakuliah

20 rows inserted.

```
INSERT INTO `mahasiswa_has_matakuliah` (`id_mahasiswaFK`, `id_matakuliahFK`) VALUES ('20019001', '201'), ('20019002', '202'), ('20019003', '203'), ('20019004', '204'), ('20019005', '205'), ('20019006', '206'), ('20019007', '207'), ('20019008', '208'), ('20019009', '209'), ('20019010', '201'), ('20019011', '211'), ('20019012', '212'), ('20019013', '213'), ('20019014', '214'), ('20019015', '215'), ('20019016', '216'), ('20019017', '217'), ('20019018', '218'), ('20019019', '219'), ('20019020', '220');
```

[Edit inline] [Edit] [Create PHP code]

Run SQL query/queries on table kampus.mahasiswa_has_matakuliah:

```
1 INSERT INTO `mahasiswa_has_matakuliah` (`id_mahasiswaFK`, `id_matakuliahFK`) VALUES ('20019001', '201'), ('20019002', '202'), ('20019003', '203'), ('20019004', '204'), ('20019005', '205'), ('20019006', '206'), ('20019007', '207'), ('20019008', '208'), ('20019009', '209'), ('20019010', '201'), ('20019011', '211'), ('20019012', '212'), ('20019013', '213'), ('20019014', '214'), ('20019015', '215'), ('20019016', '216'), ('20019017', '217'), ('20019018', '218'), ('20019019', '219'), ('20019020', '220');
```

Columns: id_mahasiswaFK, id_matakuliahFK

SELECT * SELECT INSERT UPDATE DELETE Clear Format Get auto-saved query

☐ Bind parameters

Bookmark this SQL query:

Delimiter: ; Show this query here again Retain query box Rollback when finished ☒ Enable foreign key checks Go

Console

3. Tunjukkan beberapa query standar, join, fungsi agregat, dan subquery dari database anda. Kemudian tampilkan hasilnya dan jelaskan bagaimana hasil query tersebut diperoleh !

a. QUERY STANDAR

- Untuk melihat semua kolom dari table mahasiswa

```
SELECT * FROM mahasiswa;
```

Command Prompt - mysql -u root -p

MariaDB [kampus]> select * from mahasiswa;

id_mahasiswa	nama_mahasiswa	jenis_kelamin	nohp_mahasiswa	alamat_mahasiswa
20019001	Dinda	Perempuan	081234567891	Salatiga
20019002	Laura	Perempuan	081234567892	Salatiga
20019003	Agustin	Perempuan	081234567893	Salatiga
20019004	Ahlan	laki-laki	081234567894	Semarang
20019005	Wasahlan	laki-laki	081234567895	Ambarawa
20019006	Madaris	laki-laki	081234567896	Salatiga
20019007	Rima	Perempuan	081234567897	Ambarawa
20019008	Danang	laki-laki	081234567898	Semarang
20019009	Lesti	Perempuan	081234567899	Surakarta
20019010	Joko	laki-laki	081234567810	Surakarta
20019011	Wisnu	laki-laki	081234567811	Surakarta
20019012	Handoko	laki-laki	081234567812	Boyolali
20019013	Widi	laki-laki	081234567813	Semarang
20019014	Dani	Perempuan	081234567814	Boyolali
20019015	Andika	laki-laki	081234567815	Cilacap
20019016	Siti	Perempuan	081234567816	Surakarta
20019017	Sundari	Perempuan	081234567817	Klaten
20019018	Ezta	Perempuan	081234567818	Ambarawa
20019019	Devy	Perempuan	081234567819	Semarang
20019020	Indah	Perempuan	08123456781	Salatiga

20 rows in set (0.003 sec)

- Untuk melihat kolom nama_mahasiswa dari table mahasiswa

```
SELECT nama_mahasiswa FROM mahasiswa;
```

Command Prompt - mysql -u root -p

MariaDB [kampus]> select nama_mahasiswa from mahasiswa;

nama_mahasiswa
Dinda
Laura
Agustin
Ahlan
Wasahlan
Madaris
Rima
Danang
Lesti
Joko
Wisnu
Handoko
Widi
Dani
Andika
Siti
Sundari
Ezta
Devy
Indah

20 rows in set (0.001 sec)

MariaDB [kampus]>

- Menampilkan ID mahasiswa yang mempunyai nama_mahasiswa = 'Agustin'

```
SELECT id_mahasiswa FROM mahasiswa WHERE nama_mahasiswa='Agustin';
```

Command Prompt - mysql -u root -p

```
MariaDB [kampus]> select id_mahasiswa from mahasiswa where nama_mahasiswa='Agustin';
+-----+
| id_mahasiswa |
+-----+
|      20019003 |
+-----+
1 row in set (0.000 sec)

MariaDB [kampus]>
```

- Menampilkan data dosen yang yang id mata kuliah = 201

```
SELECT*FROM dosen WHERE id_matakuliahFK=201;
```

Command Prompt - mysql -u root -p

```
MariaDB [kampus]> select*from dosen where id_matakuliahFK=201;
+-----+-----+-----+-----+-----+
| id_dosen | id_matakuliahFK | nama_dosen | nohp_dosen | alamat_dosen |
+-----+-----+-----+-----+-----+
|      101 |             201 | Sindika    | 08111111111 | Surakarta    |
|      102 |             201 | Amalia     | 08111111112 | Semarang     |
|      103 |             201 | Bambang    | 08111111113 | Boyolali     |
|      104 |             201 | Sugiarto   | 08111111114 | Klaten       |
|      105 |             201 | Sumini     | 08111111115 | Bandung      |
+-----+-----+-----+-----+-----+
5 rows in set (0.000 sec)

MariaDB [kampus]> _
```

- Menampilkan dosen yang ber-id mata kuliah = 201 dan ber-alamat = 'Surakarta'

```
SELECT*FROM dosen WHERE id_matakuliahFK=201 AND alamat_dosen='Surakarta';
```

Command Prompt - mysql -u root -p

```
MariaDB [kampus]> select*from dosen where id_matakuliahFK=201 and alamat_dosen='Surakarta';
+-----+-----+-----+-----+-----+
| id_dosen | id_matakuliahFK | nama_dosen | nohp_dosen | alamat_dosen |
+-----+-----+-----+-----+-----+
|      101 |             201 | Sindika    | 08111111111 | Surakarta    |
+-----+-----+-----+-----+-----+
1 row in set (0.000 sec)

MariaDB [kampus]>
```

- Menampilkan mahasiswa yang ber-id = 20019001 atau yang berjenis kelamin perempuan

```
SELECT*FROM mahasiswa WHERE id_mahasiswa = 20019001 or jenis_kelamin = 'Perempuan';
```

```
Command Prompt - mysql -u root -p
MariaDB [kampus]> select*from mahasiswa where id_mahasiswa=20019001 or jenis_kelamin='Perempuan';
```

id_mahasiswa	nama_mahasiswa	jenis_kelamin	nohp_mahasiswa	alamat_mahasiswa
20019001	Dinda	Perempuan	081234567891	Salatiga
20019002	Laura	Perempuan	081234567892	Salatiga
20019003	Agustin	Perempuan	081234567893	Salatiga
20019007	Rima	Perempuan	081234567897	Ambarawa
20019009	Lesti	Perempuan	081234567899	Surakarta
20019014	Dani	Perempuan	081234567814	Boyolali
20019016	Siti	Perempuan	081234567816	Surakarta
20019017	Sundari	Perempuan	081234567817	Klaten
20019018	Ezta	Perempuan	081234567818	Ambarawa
20019019	Devy	Perempuan	081234567819	Semarang
20019020	Indah	Perempuan	08123456781	Salatiga

```
11 rows in set (0.000 sec)

MariaDB [kampus]>
```

- Menampilkan mahasiswa yang namanya sudah diurutkan sesuai urutan abjad

```
SELECT*FROM mahasiswa ORDER BY nama_mahasiswa;
```

```
Command Prompt - mysql -u root -p
MariaDB [kampus]> select* from mahasiswa order by nama_mahasiswa;
```

id_mahasiswa	nama_mahasiswa	jenis_kelamin	nohp_mahasiswa	alamat_mahasiswa
20019003	Agustin	Perempuan	081234567893	Salatiga
20019004	Ahlan	laki-laki	081234567894	Semarang
20019015	Andika	laki-laki	081234567815	Cilacap
20019008	Danang	laki-laki	081234567898	Semarang
20019014	Dani	Perempuan	081234567814	Boyolali
20019019	Devy	Perempuan	081234567819	Semarang
20019001	Dinda	Perempuan	081234567891	Salatiga
20019018	Ezta	Perempuan	081234567818	Ambarawa
20019012	Handoko	laki-laki	081234567812	Boyolali
20019020	Indah	Perempuan	08123456781	Salatiga
20019010	Joko	laki-laki	081234567810	Surakarta
20019002	Laura	Perempuan	081234567892	Salatiga
20019009	Lesti	Perempuan	081234567899	Surakarta
20019006	Madaris	laki-laki	081234567896	Salatiga
20019007	Rima	Perempuan	081234567897	Ambarawa
20019016	Siti	Perempuan	081234567816	Surakarta
20019017	Sundari	Perempuan	081234567817	Klaten
20019005	Wasahlan	laki-laki	081234567895	Ambarawa
20019013	Widi	laki-laki	081234567813	Semarang
20019011	Wisnu	laki-laki	081234567811	Surakarta

```
20 rows in set (0.001 sec)

MariaDB [kampus]>
```


- Menampilkan 3 mahasiswa yang alamatnya sudah diurutkan sesuai urutan abjad

```
SELECT * FROM mahasiswa ORDER BY alamat_mahasiswa LIMIT 3;
```

Command Prompt - mysql -u root -p

```
MariaDB [kampus]> select * from mahasiswa order by alamat_mahasiswa limit 3;
```

id_mahasiswa	nama_mahasiswa	jenis_kelamin	nohp_mahasiswa	alamat_mahasiswa
20019005	Wasahlan	laki-laki	081234567895	Ambarawa
20019007	Rima	Perempuan	081234567897	Ambarawa
20019018	Ezta	Perempuan	081234567818	Ambarawa

```
3 rows in set (0.000 sec)

MariaDB [kampus]> _
```

b. JOIN

- Menampilkan id jadwal dan id mata kuliah dari jadwal natural yang berhubungan dengan dosen.

```
SELECT id_jadwal, id_matakuliahFK FROM jadwal natural join dosen WHERE
jadwal.id_matakuliahFK = dosen.id_matakuliahFK;
```

Command Prompt - mysql -u root -p

```
MariaDB [kampus]> select id_jadwal, id_matakuliahFK from jadwal natural join dosen where jadwal.id_matakuliahFK = dosen.id_matakuliahFK;
```

id_jadwal	id_matakuliahFK
401	201
401	201
401	201
401	201
401	201
401	201
402	202
402	202
402	202
402	202
403	203
404	204
405	205
406	206
407	207
408	208
409	209
410	210
411	211
412	212
412	212

```
20 rows in set (0.001 sec)

MariaDB [kampus]>
```

c. FUNGSI AGREGAT

- Menampilkan data dosen yang mempunyai id dosen 101,109

```
SELECT*FROM dosen WHERE id_dosen IN (101,109);
```

Command Prompt - mysql -u root -p

```
MariaDB [kampus]> select*from dosen where id_dosen in (101,109);
+-----+-----+-----+-----+-----+
| id_dosen | id_matakuliahFK | nama_dosen | nohp_dosen | alamat_dosen |
+-----+-----+-----+-----+-----+
|      101 |           201 | Sindika    | 08111111111 | Surakarta    |
|      109 |           202 | Deka       | 08111111119 | Salatiga     |
+-----+-----+-----+-----+-----+
2 rows in set (0.001 sec)

MariaDB [kampus]>
```

- Menampilkan data mahasiswa kecuali data 'Dinda'

```
SELECT*FROM mahasiswa WHERE nama_mahasiswa NOT IN ('Dinda');
```

Command Prompt - mysql -u root -p

```
MariaDB [kampus]> select*from mahasiswa where nama_mahasiswa not in('Dinda');
+-----+-----+-----+-----+-----+
| id_mahasiswa | nama_mahasiswa | jenis_kelamin | nohp_mahasiswa | alamat_mahasiswa |
+-----+-----+-----+-----+-----+
|      20019002 | Laura          | Perempuan     | 081234567892   | Salatiga          |
|      20019003 | Agustin        | Perempuan     | 081234567893   | Salatiga          |
|      20019004 | Ahlan          | laki-laki     | 081234567894   | Semarang          |
|      20019005 | Wasahlan       | laki-laki     | 081234567895   | Ambarawa          |
|      20019006 | Madaris        | laki-laki     | 081234567896   | Salatiga          |
|      20019007 | Rima           | Perempuan     | 081234567897   | Ambarawa          |
|      20019008 | Danang         | laki-laki     | 081234567898   | Semarang          |
|      20019009 | Lesti          | Perempuan     | 081234567899   | Surakarta          |
|      20019010 | Joko           | laki-laki     | 081234567810   | Surakarta          |
|      20019011 | Wisnu          | laki-laki     | 081234567811   | Surakarta          |
|      20019012 | Handoko        | laki-laki     | 081234567812   | Boyolali          |
|      20019013 | Widi           | laki-laki     | 081234567813   | Semarang          |
|      20019014 | Dani           | Perempuan     | 081234567814   | Boyolali          |
|      20019015 | Andika         | laki-laki     | 081234567815   | Cilacap           |
|      20019016 | Siti           | Perempuan     | 081234567816   | Surakarta          |
|      20019017 | Sundari        | Perempuan     | 081234567817   | Klaten            |
|      20019018 | Ezta           | Perempuan     | 081234567818   | Ambarawa          |
|      20019019 | Devy           | Perempuan     | 081234567819   | Semarang          |
|      20019020 | Indah          | Perempuan     | 08123456781    | Salatiga          |
+-----+-----+-----+-----+-----+
19 rows in set (0.001 sec)

MariaDB [kampus]> _
```

- Menampilkan dosen yang mempunyai id_dosen tidak diantara 102 sampai 106

SELECT*FROM dosen WHERE id_dosen NOT BETWEEN 102 AND 106;

Command Prompt - mysql -u root -p

```
MariaDB [kampus]> select*from dosen where id_dosen not between 102 and 106;
```

id_dosen	id_matakuliahFK	nama_dosen	nohp_dosen	alamat_dosen
101	201	Sindika	081111111111	Surakarta
107	202	Dika	081111111117	Boyolali
108	202	Danis	081111111118	Surakarta
109	202	Deka	081111111119	Salatiga
110	203	Sani	0812345678920	Salatiga
111	204	Farel	0812345678921	Semarang
112	205	Femi	0812345678922	Bandung
113	206	Laila	0812345678923	Klaten
114	207	Siska	0812345678924	Bengkulu
115	208	Tutik	0812345678925	Rawa Permai
116	209	Tisna	0812345678926	Jakarta
117	210	Pandu	0812345678927	Semarang
118	211	Dastan	0812345678928	Solo
119	212	Sumini	0812345678929	Surakarta
120	212	Mustika	0812345678930	Solo

```
15 rows in set (0.003 sec)

MariaDB [kampus]>
```

- Menampilkan dosen yang diantara dosen ber-id 105 dan 110

SELECT*FROM dosen WHERE id_dosen BETWEEN 105 AND 110;

Command Prompt - mysql -u root -p

```
MariaDB [kampus]> select*from dosen where id_dosen between 105 and 110;
```


id_dosen	id_matakuliahFK	nama_dosen	nohp_dosen	alamat_dosen
105	201	Sumini	081111111115	Bandung
106	202	Darti	081111111116	Semarang
107	202	Dika	081111111117	Boyolali
108	202	Danis	081111111118	Surakarta
109	202	Deka	081111111119	Salatiga
110	203	Sani	0812345678920	Salatiga

```
6 rows in set (0.001 sec)

MariaDB [kampus]> _
```

- Menampilkan id dosen paling minimal dari tabel dosen

```
SELECT MIN(id_dosen) FROM dosen;
```


 Command Prompt - mysql -u root -p

```
MariaDB [kampus]> select min(id_dosen) from dosen;
+-----+
| min(id_dosen) |
+-----+
|           101 |
+-----+
1 row in set (0.002 sec)

MariaDB [kampus]>
```

- Menampilkan jumlah data nama_dosen dari tabel dosen

```
SELECT COUNT(nama_dosen) FROM dosen;
```

 Command Prompt - mysql -u root -p

```
MariaDB [kampus]> select count(nama_dosen) from dosen;
+-----+
| count(nama_dosen) |
+-----+
|                20 |
+-----+
1 row in set (0.000 sec)

MariaDB [kampus]>
```

- Menampilkan tanggal dan id_matakuliah yang sudah diurutkan

```
SELECT tanggal, id_matakuliahFK FROM jadwal GROUP BY tanggal, id_matakuliahFK;
```

```
Command Prompt - mysql -u root -p
MariaDB [kampus]> select tanggal,id_matakuliahFK from jadwal group by tanggal,id_matakuliahFK;
+-----+-----+
| tanggal          | id_matakuliahFK |
+-----+-----+
| 2021-06-01 22:14:29 | 201              |
| 2021-06-02 22:14:29 | 202              |
| 2021-06-03 22:16:13 | 203              |
| 2021-06-04 22:16:13 | 204              |
| 2021-06-05 22:16:13 | 205              |
| 2021-06-06 22:16:13 | 206              |
| 2021-06-07 22:16:13 | 207              |
| 2021-06-08 22:16:13 | 208              |
| 2021-06-09 22:16:13 | 209              |
| 2021-06-10 22:16:13 | 210              |
| 2021-06-11 22:16:13 | 211              |
| 2021-06-12 22:16:13 | 212              |
| 2021-06-13 22:16:13 | 213              |
| 2021-06-14 22:16:13 | 214              |
| 2021-06-15 22:16:13 | 215              |
| 2021-06-16 22:16:13 | 216              |
| 2021-06-17 22:16:13 | 217              |
| 2021-06-18 22:16:13 | 218              |
| 2021-06-19 22:16:13 | 219              |
| 2021-06-20 22:16:13 | 220              |
+-----+-----+
20 rows in set (0.001 sec)

MariaDB [kampus]> _
```

d. SUBQUERY

- Menampilkan detail Dosen yang menempati ruangan J04

```
SELECT * FROM dosen
```

```
-> WHERE dosen.id_matakuliahFK
```

```
-> IN (select DISTINCT jadwal.id_matakuliahFK FROM jadwal WHERE ruangan='J04');
```

```
Command Prompt - mysql -u root -p
MariaDB [kampus]> select*from dosen
-> where dosen.id_matakuliahFK
-> in (select distinct jadwal.id_matakuliahFK from jadwal where ruangan='J04');
+-----+-----+-----+-----+-----+
| id_dosen | id_matakuliahFK | nama_dosen | nohp_dosen | alamat_dosen |
+-----+-----+-----+-----+-----+
| 111      | 204             | Farel      | 0812345678921 | Semarang      |
+-----+-----+-----+-----+-----+
1 row in set (0.003 sec)

MariaDB [kampus]> _
```