

# **TUGAS MERANCANG DATABASE MENGGUNAKAN SQL**

Diajukan untuk memenuhi tugas mata kuliah Basis Data I



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**PROGRAM DIPLOMA IV TEKNIK INFORMATIKA**

**POLITEKNIK POS INDONESIA**

**BANDUNG**

**2020**

1. Akses direktori MySQL menggunakan perintah `cd c:\xampp\mysql\bin`
2. Login ke MySQL menggunakan perintah `mysql -u root -p`

Ganti “root” pada perintah diatas dengan username masing-masing, karena “root” merupakan username default dari MySQL.

Masukkan password pada “Enter password:” lalu klik enter.

```
C:\Users\Unknown>cd c:\xampp\mysql\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 48
Server version: 10.4.11-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.
```

3. Masukkan perintah `show databases` untuk melihat database yang sudah tersedia di MySQL.

```
MariaDB [(none)]> show databases;
+-----+
| Database |
+-----+
| akademik |
| elektronik |
| freebies_reservasihotel |
| information_schema |
| mysql |
| penjualan |
| performance_schema |
| perpustakaan |
| phpmyadmin |
| tes |
| test |
| toko_sport |
+-----+
12 rows in set (0.001 sec)
```

4. Untuk Membuat database masukkan perintah `create database db_akademik;`  
Lalu masukan kembali perintah `show databases;` maka akan terlihat bahwa database bernama `db_akademik` berhasil dibuat

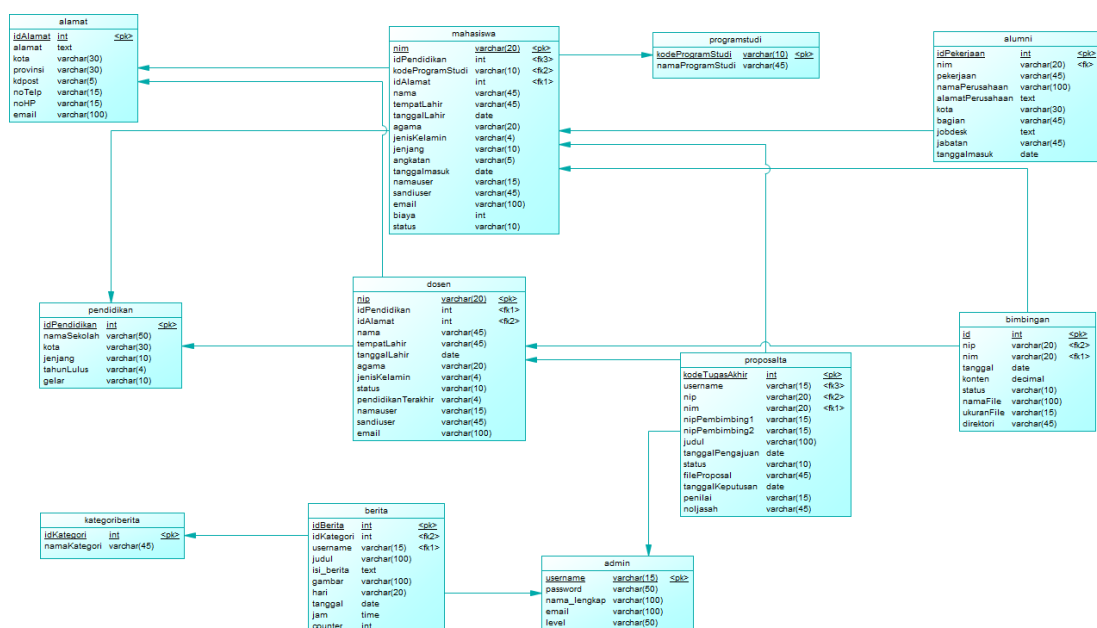
```
MariaDB [(none)]> create database db_akademik;
Query OK, 1 row affected (0.013 sec)

MariaDB [(none)]> show databases;
+-----+
| Database |
+-----+
| akademik |
| db_akademik |
| elektronik |
| freebies_reservasihotel |
| information_schema |
| mysql |
| penjualan |
| performance_schema |
| perpustakaan |
| phpmyadmin |
| tes |
| test |
| toko_sport |
+-----+
13 rows in set (0.001 sec)
```

5. Untuk dapat mengakses database, ketikkan perintah use db\_akademik

```
C:\Windows\system32\cmd.exe - mysql -u root -p
MariaDB [(none)]> use db_akademik
Database changed
```

Agar bisa membuat database yang baik, pertama buatlah seluruh tabel pada PDM berikut, baru di relasikan di akhir.



6. Ketikkan query seperti pada gambar dibawah.

```
MariaDB [db_akademik]> create table admin(  
-> username varchar(15) not null,  
-> password varchar(50),  
-> nama_lengkap varchar(100),  
-> email varchar(100),  
-> level varchar(50),  
-> primary key (username)  
-> );  
Query OK, 0 rows affected (0.417 sec)
```

7. Ketikkan perintah show tables untuk memastikan tabel berhasil dibuat

```
MariaDB [db_akademik]> show tables;  
+-----+  
| Tables_in_db_akademik |  
+-----+  
| admin                  |  
+-----+  
1 row in set (0.000 sec)
```

8. Ketikkan perintah desc admin; untuk mengetahui struktur data pada tabel admin

Pada kolom key ada yang berisikan PRI yang berarti primary key. Untuk sementara, tabel admin belum terdapat foreign key karena belum berelasi dengan tabel lain.

```
MariaDB [db_akademik]> desc admin;  
+-----+-----+-----+-----+-----+-----+  
| Field      | Type      | Null | Key | Default | Extra |  
+-----+-----+-----+-----+-----+-----+  
| username   | varchar(15) | NO   | PRI | NULL    |       |  
| password   | varchar(50) | YES  |     | NULL    |       |  
| nama_lengkap | varchar(100) | YES  |     | NULL    |       |  
| email      | varchar(100) | YES  |     | NULL    |       |  
| level      | varchar(50) | YES  |     | NULL    |       |  
+-----+-----+-----+-----+-----+-----+  
5 rows in set (0.023 sec)
```

Dibawah ini adalah Screenshoot tabel yang dibuat untuk membangun database db\_akademik

```
MariaDB [db_akademik]> create table alamat(  
-> idAlamat int not null,  
-> alamat text,  
-> kota varchar(30),  
-> provinsi varchar(30),  
-> kdpost varchar(5),  
-> noTelp varchar(15),  
-> noHP varchar(15),  
-> email varchar(100),  
-> primary key (idAlamat)  
-> );  
Query OK, 0 rows affected (0.357 sec)  
  
MariaDB [db_akademik]> desc alamat;  
+-----+-----+-----+-----+-----+-----+  
| Field | Type | Null | Key | Default | Extra |  
+-----+-----+-----+-----+-----+-----+  
| idAlamat | int(11) | NO | PRI | NULL | |  
| alamat | text | YES | | NULL | |  
| kota | varchar(30) | YES | | NULL | |  
| provinsi | varchar(30) | YES | | NULL | |  
| kdpost | varchar(5) | YES | | NULL | |  
| noTelp | varchar(15) | YES | | NULL | |  
| noHP | varchar(15) | YES | | NULL | |  
| email | varchar(100) | YES | | NULL | |  
+-----+-----+-----+-----+-----+-----+  
8 rows in set (0.024 sec)
```

*Tabel Alamat*

```
MariaDB [db_akademik]> create table alumni(  
-> idPekerjaan int not null,  
-> nim varchar(20),  
-> pekerjaan varchar(45),  
-> namaPerusahaan varchar(100),  
-> alamatPerusahaan text,  
-> kota varchar(30),  
-> bagian varchar(45),  
-> jobdesk text,  
-> jabatan varchar(45),  
-> tanggalmasuk date,  
-> primary key (idPekerjaan)  
-> );  
Query OK, 0 rows affected (0.367 sec)  
  
MariaDB [db_akademik]> desc alumni;  
+-----+-----+-----+-----+-----+-----+  
| Field | Type | Null | Key | Default | Extra |  
+-----+-----+-----+-----+-----+-----+  
| idPekerjaan | int(11) | NO | PRI | NULL | |  
| nim | varchar(20) | YES | | NULL | |  
| pekerjaan | varchar(45) | YES | | NULL | |  
| namaPerusahaan | varchar(100) | YES | | NULL | |  
| alamatPerusahaan | text | YES | | NULL | |  
| kota | varchar(30) | YES | | NULL | |  
| bagian | varchar(45) | YES | | NULL | |  
| jobdesk | text | YES | | NULL | |  
| jabatan | varchar(45) | YES | | NULL | |  
| tanggalmasuk | date | YES | | NULL | |  
+-----+-----+-----+-----+-----+-----+  
10 rows in set (0.025 sec)
```

*Tabel alumni*

```

MariaDB [db_akademik]> create table berita(
  -> idBerita int not null,
  -> idKategori int,
  -> username varchar(15),
  -> judul varchar(100),
  -> isi_berita text,
  -> gambar varchar(100),
  -> hari varchar(20),
  -> tanggal date,
  -> jam time,
  -> counter int,
  -> primary key (idBerita)
  -> );
Query OK, 0 rows affected (0.299 sec)

MariaDB [db_akademik]> desc berita;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| idBerita | int(11) | NO | PRI | NULL | |
| idKategori | int(11) | YES | | NULL | |
| username | varchar(15) | YES | | NULL | |
| judul | varchar(100) | YES | | NULL | |
| isi_berita | text | YES | | NULL | |
| gambar | varchar(100) | YES | | NULL | |
| hari | varchar(20) | YES | | NULL | |
| tanggal | date | YES | | NULL | |
| jam | time | YES | | NULL | |
| counter | int(11) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
10 rows in set (0.025 sec)

```

*Tabel berita*

```

C:\Windows\system32\cmd.exe - mysql -u root -p
MariaDB [db_akademik]> create table bimbingan(
  -> id int not null,
  -> nip varchar(20),
  -> nim varchar(20),
  -> tanggal date,
  -> konten decimal(2,0),
  -> status varchar(10),
  -> namaFile varchar(100),
  -> ukuranFile varchar(15),
  -> direktori varchar(45),
  -> primary key (id)
  -> );
Query OK, 0 rows affected (0.306 sec)

MariaDB [db_akademik]> desc bimbingan
-> ;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| id | int(11) | NO | PRI | NULL | |
| nip | varchar(20) | YES | | NULL | |
| nim | varchar(20) | YES | | NULL | |
| tanggal | date | YES | | NULL | |
| konten | decimal(2,0) | YES | | NULL | |
| status | varchar(10) | YES | | NULL | |
| namaFile | varchar(100) | YES | | NULL | |
| ukuranFile | varchar(15) | YES | | NULL | |
| direktori | varchar(45) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
9 rows in set (0.026 sec)

```

*Tabel bimbingan*

```

MariaDB [db_akademik]> create table dosen(
  -> nip varchar(20) not null,
  -> idPendidikan int,
  -> idAlamat int,
  -> nama varchar(45),
  -> tempatLahir varchar(45),
  -> tanggalLahir date,
  -> agama varchar(20),
  -> jenisKelamin varchar(4),
  -> status varchar(10),
  -> pendidikanTerakhir varchar(4),
  -> namauser varchar(15),
  -> sandiuser varchar(45),
  -> email varchar(100),
  -> primary key (nip)
  -> );
Query OK, 0 rows affected (0.283 sec)

MariaDB [db_akademik]> desc dosen;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| nip   | varchar(20) | NO | PRI | NULL | |
| idPendidikan | int(11) | YES | | NULL | |
| idAlamat | int(11) | YES | | NULL | |
| nama  | varchar(45) | YES | | NULL | |
| tempatLahir | varchar(45) | YES | | NULL | |
| tanggalLahir | date | YES | | NULL | |
| agama | varchar(20) | YES | | NULL | |
| jenisKelamin | varchar(4) | YES | | NULL | |
| status | varchar(10) | YES | | NULL | |
| pendidikanTerakhir | varchar(4) | YES | | NULL | |
| namauser | varchar(15) | YES | | NULL | |
| sandiuser | varchar(45) | YES | | NULL | |
| email | varchar(100) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
13 rows in set (0.089 sec)

```

*Tabel dosen*

```

MariaDB [db_akademik]> create table kategoriberita(
  -> idKategori int not null,
  -> namaKategori varchar(45),
  -> primary key (idKategori)
  -> );
Query OK, 0 rows affected (0.318 sec)

MariaDB [db_akademik]> desc kategoriberita;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| idKategori | int(11) | NO | PRI | NULL | |
| namaKategori | varchar(45) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.023 sec)

```

*Tabel kategoriberita*



```

MariaDB [db_akademik]> create table mahasiswa(
  -> nim varchar(20) not null,
  -> idPendidikan int,
  -> kodeProgramStudi varchar(10),
  -> idAlamat int,
  -> nama varchar(45),
  -> tempatLahir varchar(45),
  -> tanggalLahir date,
  -> agama varchar(20),
  -> jenisKelamin varchar(4),
  -> jenjang varchar(10),
  -> angkatan varchar(5),
  -> tanggalmasuk date,
  -> namauser varchar(15),
  -> sandiuser varchar(45),
  -> email varchar(100),
  -> biaya int,
  -> status varchar(10),
  -> primary key (nim)
  -> );
Query OK, 0 rows affected (0.283 sec)

MariaDB [db_akademik]> desc mahasiswa;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| nim | varchar(20) | NO | PRI | NULL | |
| idPendidikan | int(11) | YES | | NULL | |
| kodeProgramStudi | varchar(10) | YES | | NULL | |
| idAlamat | int(11) | YES | | NULL | |
| nama | varchar(45) | YES | | NULL | |
| tempatLahir | varchar(45) | YES | | NULL | |
| tanggalLahir | date | YES | | NULL | |
| agama | varchar(20) | YES | | NULL | |
| jenisKelamin | varchar(4) | YES | | NULL | |
| jenjang | varchar(10) | YES | | NULL | |
| angkatan | varchar(5) | YES | | NULL | |
| tanggalmasuk | date | YES | | NULL | |
| namauser | varchar(15) | YES | | NULL | |
| sandiuser | varchar(45) | YES | | NULL | |
| email | varchar(100) | YES | | NULL | |
| biaya | int(11) | YES | | NULL | |
| status | varchar(10) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
17 rows in set (0.128 sec)

```

*Tabel mahasiswa*

```

MariaDB [db_akademik]> create table pendidikan(
  -> idPendidikan int not null,
  -> namaSekolah varchar(50),
  -> kota varchar(30),
  -> jenjang varchar(10),
  -> tahunLulus varchar(4),
  -> gelar varchar(10),
  -> primary key (idPendidikan)
  -> );
Query OK, 0 rows affected (0.263 sec)

MariaDB [db_akademik]> desc pendidikan
-> ;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| idPendidikan | int(11) | NO | PRI | NULL | |
| namaSekolah | varchar(50) | YES | | NULL | |
| kota | varchar(30) | YES | | NULL | |
| jenjang | varchar(10) | YES | | NULL | |
| tahunLulus | varchar(4) | YES | | NULL | |
| gelar | varchar(10) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
6 rows in set (0.023 sec)

```

*Tabel Pendidikan*



```

MariaDB [db_akademik]> create table programstudi(
  -> kodeProgramStudi varchar(10) not null,
  -> namaProgramStudi varchar(45),
  -> primary key (kodeProgramStudi)
  -> );
Query OK, 0 rows affected (0.289 sec)

MariaDB [db_akademik]> desc programstudi;
+-----+-----+-----+-----+-----+-----+
| Field          | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| kodeProgramStudi | varchar(10)   | NO   | PRI | NULL    |       |
| namaProgramStudi | varchar(45)   | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.023 sec)

```

*Tabel programstudi*

```

MariaDB [db_akademik]> create table proposalta(
  -> kodeTugasAkhir int not null,
  -> username varchar(15),
  -> nip varchar(20),
  -> nim varchar(20),
  -> nipPembimbing1 varchar(15),
  -> nipPembimbing2 varchar(15),
  -> judul varchar(100),
  -> tanggalPengajuan date,
  -> status varchar(10),
  -> fileProposal varchar(45),
  -> tanggalKeputusan date,
  -> penilai varchar(15),
  -> noIjasah varchar(45),
  -> primary key (kodeTugasAkhir)
  -> );
Query OK, 0 rows affected (0.510 sec)

MariaDB [db_akademik]> desc proposalta;
+-----+-----+-----+-----+-----+-----+
| Field          | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| kodeTugasAkhir | int(11)       | NO   | PRI | NULL    |       |
| username       | varchar(15)   | YES  |     | NULL    |       |
| nip            | varchar(20)   | YES  |     | NULL    |       |
| nim            | varchar(20)   | YES  |     | NULL    |       |
| nipPembimbing1 | varchar(15)   | YES  |     | NULL    |       |
| nipPembimbing2 | varchar(15)   | YES  |     | NULL    |       |
| judul          | varchar(100)  | YES  |     | NULL    |       |
| tanggalPengajuan | date          | YES  |     | NULL    |       |
| status         | varchar(10)   | YES  |     | NULL    |       |
| fileProposal    | varchar(45)   | YES  |     | NULL    |       |
| tanggalKeputusan | date          | YES  |     | NULL    |       |
| penilai        | varchar(15)   | YES  |     | NULL    |       |
| noIjasah       | varchar(45)   | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
13 rows in set (0.023 sec)

```

*Tabel proposalta*

9. Ketikkan kembali show tables; maka akan muncul tabel yang tadi telah dibuat.

```
MariaDB [db_akademik]> show tables;
+-----+
| Tables_in_db_akademik |
+-----+
| admin                  |
| alamat                 |
| alumni                 |
| berita                 |
| bimbingan              |
| dosen                  |
| kategoriberita         |
| mahasiswa              |
| pendidikan             |
| programstudi           |
| proposalta             |
+-----+
11 rows in set (0.001 sec)
```

10. Relasikan tabel yang telah dibuat. Pada gambar berikut adalah query untuk merelasikan tabel mahasiswa dengan tabel pendidikan, programstudi, dan alamat.

```
MariaDB [db_akademik]> alter table mahasiswa
-> add constraint fk_pendidikan_mahasiswa foreign key (idPendidikan) references pendidikan (idPendidikan) on delete cascade on update cascade;
Query OK, 0 rows affected (1.178 sec)
Records: 0 Duplicates: 0 Warnings: 0

MariaDB [db_akademik]> alter table mahasiswa
-> add constraint fk_programstudi_mahasiswa foreign key (kodeProgramStudi) references programstudi (kodeProgramStudi) on delete cascade on update cascade;
Query OK, 0 rows affected (1.147 sec)
Records: 0 Duplicates: 0 Warnings: 0

MariaDB [db_akademik]> alter table mahasiswa
-> add constraint fk_alamat_mahasiswa foreign key (idAlamat) references alamat (idAlamat) on delete cascade on update cascade;
Query OK, 0 rows affected (1.026 sec)
Records: 0 Duplicates: 0 Warnings: 0
```

11. Ketika dilihat kembali struktur data dari tabel mahasiswa dengan menggunakan perintah desc mahasiswa; maka pada kolom key akan ada yang berisikan MUL. Artinya field yang sejajar dengan key Mul adalah foreign key.

```
MariaDB [db_akademik]> desc mahasiswa;
+-----+-----+-----+-----+-----+-----+
| Field          | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| nim            | varchar(20)   | NO   | PRI | NULL    |       |
| idPendidikan   | int(11)       | YES  | MUL | NULL    |       |
| kodeProgramStudi | varchar(10)   | YES  | MUL | NULL    |       |
| idAlamat       | int(11)       | YES  | MUL | NULL    |       |
| nama           | varchar(45)   | YES  |     | NULL    |       |
| tempatLahir    | varchar(45)   | YES  |     | NULL    |       |
| tanggalLahir  | date          | YES  |     | NULL    |       |
| agama          | varchar(20)   | YES  |     | NULL    |       |
| jenisKelamin   | varchar(4)    | YES  |     | NULL    |       |
| jenjang        | varchar(10)   | YES  |     | NULL    |       |
| angkatan       | varchar(5)    | YES  |     | NULL    |       |
| tanggalmasuk  | date          | YES  |     | NULL    |       |
| namauser       | varchar(15)   | YES  |     | NULL    |       |
| sandiuser      | varchar(45)   | YES  |     | NULL    |       |
| email          | varchar(100)  | YES  |     | NULL    |       |
| biaya          | int(11)       | YES  |     | NULL    |       |
| status         | varchar(10)   | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
17 rows in set (0.027 sec)
```

Berikut adalah screenshoot merelasikan tabel-tabel.

```
MariaDB [db_akademik]> alter table alumni
-> add constraint fk_mahasiswa_alumni foreign key (nim) references mahasiswa (nim) on delete cascade on update cascade;
Query OK, 0 rows affected (1.117 sec)
Records: 0 Duplicates: 0 Warnings: 0

MariaDB [db_akademik]> desc alumni;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| idPekerjaan | int(11) | NO | PRI | NULL | |
| nim | varchar(20) | YES | MUL | NULL | |
| pekerjaan | varchar(45) | YES | | NULL | |
| namaPerusahaan | varchar(100) | YES | | NULL | |
| alamatPerusahaan | text | YES | | NULL | |
| kota | varchar(30) | YES | | NULL | |
| bagian | varchar(45) | YES | | NULL | |
| jobdesk | text | YES | | NULL | |
| jabatan | varchar(45) | YES | | NULL | |
| tanggalmasuk | date | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
10 rows in set (0.043 sec)
```

*Relasi tabel alumni dengan tabel mahasiswa*

```
MariaDB [db_akademik]> alter table dosen
-> add constraint fk_pendidikan_dosen foreign key (idPendidikan) references pendidikan (idPendidikan) on delete cascade on update cascade;
Query OK, 0 rows affected (1.341 sec)
Records: 0 Duplicates: 0 Warnings: 0

MariaDB [db_akademik]> alter table dosen
-> add constraint fk_alamat_dosen foreign key (idAlamat) references alamat (idAlamat) on delete cascade on update cascade;
Query OK, 0 rows affected (1.031 sec)
Records: 0 Duplicates: 0 Warnings: 0

MariaDB [db_akademik]> desc dosen;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| nip | varchar(20) | NO | PRI | NULL | |
| idPendidikan | int(11) | YES | MUL | NULL | |
| idAlamat | int(11) | YES | MUL | NULL | |
| nama | varchar(45) | YES | | NULL | |
| tempatLahir | varchar(45) | YES | | NULL | |
| tanggalahir | date | YES | | NULL | |
| agama | varchar(20) | YES | | NULL | |
| jenisKelamin | varchar(4) | YES | | NULL | |
| status | varchar(10) | YES | | NULL | |
| pendidikanTerakhir | varchar(4) | YES | | NULL | |
| namauser | varchar(15) | YES | | NULL | |
| sandiuser | varchar(45) | YES | | NULL | |
| email | varchar(100) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
13 rows in set (0.113 sec)
```

*Relasi tabel dosen dengan tabel pendidikan dan tabel alamat*

```
MariaDB [db_akademik]> alter table proposalta
-> add constraint fk_admin_proposalta foreign key (username) references admin (username) on delete cascade on update cascade;
Query OK, 0 rows affected (0.059 sec)
Records: 0 Duplicates: 0 Warnings: 0

MariaDB [db_akademik]> alter table proposalta
-> add constraint fk_dosen_proposalta foreign key (nip) references dosen (nip) on delete cascade on update cascade;
Query OK, 0 rows affected (1.273 sec)
Records: 0 Duplicates: 0 Warnings: 0

MariaDB [db_akademik]> alter table proposalta
-> add constraint fk_mahasiswa_proposalta foreign key (nim) references mahasiswa (nim) on delete cascade on update cascade;
Query OK, 0 rows affected (0.768 sec)
Records: 0 Duplicates: 0 Warnings: 0

MariaDB [db_akademik]> desc proposalta;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| kodeTugasAkhir | int(11) | NO | PRI | NULL | |
| username | varchar(15) | YES | MUL | NULL | |
| nip | varchar(20) | YES | MUL | NULL | |
| nim | varchar(20) | YES | MUL | NULL | |
| nipPembimbing1 | varchar(15) | YES | | NULL | |
| nipPembimbing2 | varchar(15) | YES | | NULL | |
| judul | varchar(100) | YES | | NULL | |
| tanggalPengajuan | date | YES | | NULL | |
| status | varchar(10) | YES | | NULL | |
| fileProposal | varchar(45) | YES | | NULL | |
| tanggalKeputusan | date | YES | | NULL | |
| penilai | varchar(15) | YES | | NULL | |
| noTjasa | varchar(45) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
13 rows in set (0.021 sec)
```

*Relasi tabel proposalta dengan tabel dosen dan tabel mahasiswa*

```

MariaDB [db_akademik]> alter table bimbingan
-> add constraint fk_dosen_bimbingan foreign key (nip) references dosen (nip) on delete cascade on update cascade;
Query OK, 0 rows affected (0.937 sec)
Records: 0 Duplicates: 0 Warnings: 0

MariaDB [db_akademik]> alter table bimbingan
-> add constraint fk_mahasiswa_bimbingan foreign key (nim) references mahasiswa (nim) on delete cascade on update cascade;
Query OK, 0 rows affected (1.196 sec)
Records: 0 Duplicates: 0 Warnings: 0

MariaDB [db_akademik]> desc bimbingan;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| id     | int(11) | NO   | PRI | NULL    |       |
| nip    | varchar(20) | YES | MUL | NULL    |       |
| nim    | varchar(20) | YES | MUL | NULL    |       |
| tanggal | date | YES |     | NULL    |       |
| konten | decimal(2,0) | YES |     | NULL    |       |
| status | varchar(10) | YES |     | NULL    |       |
| namaFile | varchar(100) | YES |     | NULL    |       |
| ukuranFile | varchar(15) | YES |     | NULL    |       |
| direktori | varchar(45) | YES |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
9 rows in set (0.024 sec)

```

*Relasi tabel bimbingan dengan tabel dosen dan tabel mahasiswa*

```

MariaDB [db_akademik]> alter table berita
-> add constraint fk_kategoriBerita_berita foreign key (idKategori) references kategoriBerita (idKategori) on delete cascade on update cascade;
Query OK, 0 rows affected (1.007 sec)
Records: 0 Duplicates: 0 Warnings: 0

MariaDB [db_akademik]> alter table berita
-> add constraint fk_adminBerita foreign key (username) references admin (username) on delete cascade on update cascade;
Query OK, 0 rows affected (1.135 sec)
Records: 0 Duplicates: 0 Warnings: 0

MariaDB [db_akademik]> desc berita;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| idBerita | int(11) | NO   | PRI | NULL    |       |
| idKategori | int(11) | YES | MUL | NULL    |       |
| username | varchar(15) | YES | MUL | NULL    |       |
| judul    | varchar(100) | YES |     | NULL    |       |
| isi_berita | text | YES |     | NULL    |       |
| gambar   | varchar(100) | YES |     | NULL    |       |
| hari     | varchar(20) | YES |     | NULL    |       |
| tanggal | date | YES |     | NULL    |       |
| jam      | time | YES |     | NULL    |       |
| counter  | int(11) | YES |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
10 rows in set (0.034 sec)

```

*Relasi tabel berita dengan tabel kategori berita dan tabel admin*

Jika sudah direlasikan, saat menggunakan designer di phpMyAdmin akan terlihat garis relasinya seperti ini

