# TUGAS
# SISTEM DATABASE I

**Disusun Oleh:**

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**PROGRAM STUDI S-1 TEKNIK INFORMATIKA**

**FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM**

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**JATINANGOR**

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1. Create Database:

```
mysql> CREATE database jurusan; #Prames-59
Query OK, 1 row affected (0.00 sec)

mysql> USE jurusan; #Prames-59
Database changed
```

2. Create Table:

    a. Table Mahasiswa:

```
mysql> CREATE TABLE mahasiswa(npm char(4) NOT NULL, nama varchar(30), alamat varchar(40), primary key (npm)); #Prames-59
Query OK, 0 rows affected (0.02 sec)

mysql> DESC mahasiswa; #Prames-59
+--------+-------------+------+-----+---------+-------+
| Field  | Type        | Null | Key | Default | Extra |
+--------+-------------+------+-----+---------+-------+
| npm    | char(4)     | NO   | PRI | NULL    |       |
| nama   | varchar(30) | YES  |     | NULL    |       |
| alamat | varchar(40) | YES  |     | NULL    |       |
+--------+-------------+------+-----+---------+-------+
```

    b. Table Matkul:

```
mysql> CREATE TABLE matkul (kode char(3) NOT NULL, nama varchar(20), sks int, primary key (kode)); #Prames-59
Query OK, 0 rows affected (0.03 sec)
mysql> DESC matkul; #Prames-59
+-------+-------------+------+-----+---------+-------+
| Field | Type        | Null | Key | Default | Extra |
+-------+-------------+------+-----+---------+-------+
| kode  | char(3)     | NO   | PRI | NULL    |       |
| nama  | varchar(20) | YES  |     | NULL    |       |
| sks   | int         | YES  |     | NULL    |       |
+-------+-------------+------+-----+---------+-------+
3 rows in set (0.00 sec)
```

    c. Table Ambil:

```
mysql> CREATE TABLE ambil (
    -> npm char(4) NOT NULL,
    -> kode char
    -> (3),
    -> nilai int,
    -> CONSTRAINT npm FOREIGN KEY (npm) REFERENCES mahasiswa (npm),
    -> CONSTRAINT kode FOREIGN KEY (kode) REFERENCES matkul (kode)
    -> ); #Prames-59
Query OK, 0 rows affected (0.05 sec)

mysql> DESC ambil; #Prames-59
+-------+---------+------+-----+---------+-------+
| Field | Type    | Null | Key | Default | Extra |
+-------+---------+------+-----+---------+-------+
| npm   | char(4) | NO   | MUL | NULL    |       |
| kode  | char(3) | YES  | MUL | NULL    |       |
| nilai | int     | YES  |     | NULL    |       |
+-------+---------+------+-----+---------+-------+
3 rows in set (0.00 sec)
```

3. Insert Attribute:
   a. Table Mahasiswa:

```
mysql> INSERT INTO mahasiswa VALUES ("A001", "Adistia", "Bandung"); #Prames-59
Query OK, 1 row affected (0.02 sec)

mysql> INSERT INTO mahasiswa VALUES ("A002", "Bayu", "Cirebon"); #Prames-59
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO mahasiswa VALUES ("A003", "Cahya", "Depok"); #Prames-59
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO mahasiswa VALUES ("A004", "Dadang", "Sukabumi"); #Prames-59
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO mahasiswa VALUES ("A005", "Eneng", "Bogor"); #Prames-59
Query OK, 1 row affected (0.01 sec)

mysql> SELECT * FROM mahasiswa;
+------+---------+----------+
| npm  | nama    | alamat   |
+------+---------+----------+
| A001 | Adistia | Bandung  |
| A002 | Bayu    | Cirebon  |
| A003 | Cahya   | Depok    |
| A004 | Dadang  | Sukabumi |
| A005 | Eneng   | Bogor    |
+------+---------+----------+
5 rows in set (0.00 sec)
```

   b. Table Matkul:

```
mysql> INSERT INTO matkul VALUES ("A01", "Sisdat", "3"); #Prames-59
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO matkul VALUES ("A02", "Strukdat", "3"); #Prames-59
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO matkul VALUES ("A03", "Orarkom", "4"); #Prames-59
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO matkul VALUES ("A04", "Statistika", "2"); #Prames-59
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO matkul VALUES ("A05", "Kalkulus", "4"); #Prames-59
Query OK, 1 row affected (0.01 sec)

mysql> SELECT * FROM matkul;
+------+------------+------+
| kode | nama       | sks  |
+------+------------+------+
| A01  | Sisdat     |    3 |
| A02  | Strukdat   |    3 |
| A03  | Orarkom    |    4 |
| A04  | Statistika |    2 |
| A05  | Kalkulus   |    4 |
+------+------------+------+
5 rows in set (0.00 sec)
```

c.  Table Ambil:

```
mysql> INSERT INTO ambil VALUES ("A001", "A01", "70"); #Prames-59
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO ambil VALUES ("A002", "A02", "80"); #Prames-59
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO ambil VALUES ("A003", "A03", "60"); #Prames-59
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO ambil VALUES ("A004", "A02", "70"); #Prames-59
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO ambil VALUES ("A001", "A02", "70"); #Prames-59
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO ambil VALUES ("A001", "A03", "70"); #Prames-59
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO ambil VALUES ("A002", "A03", "60"); #Prames-59
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO ambil VALUES ("A003", "A01", "80"); #Prames-59
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO ambil VALUES ("A004", "A01", "80"); #Prames-59
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO ambil VALUES ("A005", "A02", "60"); #Prames-59
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO ambil VALUES ("A005", "A03", "60"); #Prames-59
Query OK, 1 row affected (0.01 sec)

mysql> SELECT * FROM ambil;
+------+------+-------+
| npm  | kode | nilai |
+------+------+-------+
| A001 | A01  |    70 |
| A002 | A02  |    80 |
| A003 | A03  |    60 |
| A004 | A02  |    70 |
| A001 | A02  |    70 |
| A001 | A03  |    70 |
| A002 | A03  |    60 |
| A003 | A01  |    80 |
| A004 | A01  |    80 |
| A005 | A02  |    60 |
| A005 | A03  |    60 |
+------+------+-------+
11 rows in set (0.00 sec)
```

4. Soal:
   a. Soal 1:

```
mysql> SELECT mahasiswa.nama, ambil.nilai from ambil
    -> INNER JOIN mahasiswa USING(npm)
    -> INNER JOIN matkul USING(kode)
    -> WHERE ambil.nilai = (select max(nilai) from ambil) and kode = "A01"
    -> ; #Prames-59
+--------+-------+
| nama   | nilai |
+--------+-------+
| Cahya  |    80 |
| Dadang |    80 |
+--------+-------+
2 rows in set (0.06 sec)
```

   b. Soal 2:

```
mysql> SELECT mahasiswa.npm, mahasiswa.nama, ambil.nilai from ambil
    -> INNER JOIN mahasiswa USING(npm)
    -> INNER JOIN matkul USING(kode)
    -> WHERE ambil.nilai > (select avg(nilai) from ambil) and kode = "A03"
    -> ; #Prames-59
+------+---------+-------+
| npm  | nama    | nilai |
+------+---------+-------+
| A001 | Adistia |    70 |
+------+---------+-------+
1 row in set (0.01 sec)
```

   c. Soal 3:

```
mysql> SELECT npm, nama from mahasiswa
    -> WHERE npm NOT IN (select npm from ambil WHERE kode = "A01")
    -> ; #Prames-59
+------+-------+
| npm  | nama  |
+------+-------+
| A002 | Bayu  |
| A005 | Eneng |
+------+-------+
2 rows in set (0.00 sec)
```