

# **TUGAS PRAKTIKUM SISTEM DATABASE 1**



**Disusun Oleh:**

**Prames Ray Lopian - 140810210059**

**PROGRAM STUDI S-1 TEKNIK INFORMATIKA  
FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM  
UNIVERSITAS PADJADJARAN  
JATINANGOR**

**2022**

## Pembuatan Data:

```
mysql> CREATE DATABASE kuliah; #Prames-59
Query OK, 1 row affected (0.01 sec)
```

```
mysql> use kuliah; #Prames-59
```

1. Database changed

```
mysql> CREATE TABLE mahasiswa (
  -> NPM char(8) NOT NULL,
  -> namaMhs varchar(20),
  -> alamatMhs varchar(30),
  -> primary key(NPM)
  -> ); #Prames-59
```

2. Query OK, 0 rows affected (0.10 sec)

```
mysql> desc mahasiswa; #Prames-59
```

Field	Type	Null	Key	Default	Extra
NPM	char(8)	NO	PRI	NULL	
namaMhs	varchar(20)	YES		NULL	
alamatMhs	varchar(30)	YES		NULL	

3 rows in set (0.06 sec)

```
mysql> CREATE TABLE matkul (
  -> noMK char(5) NOT NULL,
  -> namaMK varchar(30),
  -> SKS int(1),
  -> primary key(noMK)
  -> ); #Prames-59
```

Query OK, 0 rows affected, 1 warning (0.07 sec)

```
mysql> desc matkul;
```

Field	Type	Null	Key	Default	Extra
noMK	char(5)	NO	PRI	NULL	
namaMK	varchar(30)	YES		NULL	
SKS	int	YES		NULL	

3. 3 rows in set (0.06 sec)

```
mysql> CREATE TABLE nilai (  
-> NPM char(8),  
-> noMK char(5),  
-> UTS int,  
-> UAS int,  
-> CONSTRAINT NPM foreign key(NPM) references mahasiswa(NPM),  
-> CONSTRAINT noMK foreign key(noMK) references matkul(noMK)  
-> ); #Prames-59  
Query OK, 0 rows affected (0.09 sec)
```

```
mysql> desc nilai; #Prames-59
```

Field	Type	Null	Key	Default	Extra
NPM	char(8)	YES	MUL	NULL	
noMK	char(5)	YES	MUL	NULL	
UTS	int	YES		NULL	
UAS	int	YES		NULL	

4. 4 rows in set (0.01 sec)

```

mysql> INSERT mahasiswa values ("10296001", "Gani", "Jatinangor");
Query OK, 1 row affected (0.06 sec)

mysql> INSERT mahasiswa values ("10296126", "Eli", "Jakarta");
Query OK, 1 row affected (0.05 sec)

mysql> INSERT mahasiswa values ("10296832", "Jaka", "Garut");
Query OK, 1 row affected (0.05 sec)

mysql> INSERT mahasiswa values ("21196353", "Sisi", "Majalengka");
Query OK, 1 row affected (0.01 sec)

mysql> INSERT mahasiswa values ("21198002", "Tito", "Bandung");
Query OK, 1 row affected (0.01 sec)

mysql> INSERT mahasiswa values ("31296500", "Beni", "Depok");
Query OK, 1 row affected (0.01 sec)

mysql> INSERT mahasiswa values ("41296525", "Putra", "Bogor");
Query OK, 1 row affected (0.01 sec)

mysql> INSERT mahasiswa values ("50096487", "Yunita", "Bekasi"); #Prames-59
Query OK, 1 row affected (0.01 sec)

mysql> SELECT * FROM mahasiswa; #Prames-59
+-----+-----+-----+
| NPM      | namaMhs | alamatMhs |
+-----+-----+-----+
| 10296001 | Gani    | Jatinangor |
| 10296126 | Eli     | Jakarta    |
| 10296832 | Jaka    | Garut      |
| 21196353 | Sisi    | Majalengka |
| 21198002 | Tito    | Bandung    |
| 31296500 | Beni    | Depok      |
| 41296525 | Putra   | Bogor      |
| 50096487 | Yunita  | Bekasi     |
+-----+-----+-----+
8 rows in set (0.01 sec)

```

5.

```
mysql> INSERT matkul values ("TI021", "Sistem Database", "2"); #Prames-59
Query OK, 1 row affected (0.02 sec)
```

```
mysql> INSERT matkul values ("TI022", "Etika Profesi", "2"); #Prames-59
Query OK, 1 row affected (0.01 sec)
```

```
mysql> INSERT matkul values ("TI032", "Data Mining", "3"); #Prames-59
Query OK, 1 row affected (0.05 sec)
```

```
mysql> SELECT * FROM matkul; #Prames-59
```

noMK	namaMK	SKS
TI021	Sistem Database	2
TI022	Etika Profesi	2
TI032	Data Mining	3

6. 3 rows in set (0.00 sec)

```
mysql> INSERT nilai values ("10296126", "TI032", "70", "90"); #Prames-59
Query OK, 1 row affected (0.01 sec)

mysql> INSERT nilai values ("10296832", "TI021", "80", "75"); #Prames-59
Query OK, 1 row affected (0.01 sec)

mysql> INSERT nilai values ("21196353", "TI022", "75", "75"); #Prames-59
Query OK, 1 row affected (0.01 sec)

mysql> INSERT nilai values ("31296500", "TI021", "55", "40"); #Prames-59
Query OK, 1 row affected (0.01 sec)

mysql> INSERT nilai values ("41296525", "TI022", "90", "80"); #Prames-59
Query OK, 1 row affected (0.01 sec)

mysql> INSERT nilai values ("50096487", "TI032", "85", "60"); #Prames-59
Query OK, 1 row affected (0.00 sec)

mysql> SELECT * FROM nilai; #Prames-59
+-----+-----+-----+-----+
| NPM      | noMK  | UTS   | UAS   |
+-----+-----+-----+-----+
| 10296126 | TI032 | 70    | 90    |
| 10296832 | TI021 | 80    | 75    |
| 21196353 | TI022 | 75    | 75    |
| 31296500 | TI021 | 55    | 40    |
| 41296525 | TI022 | 90    | 80    |
| 50096487 | TI032 | 85    | 60    |
+-----+-----+-----+-----+
6 rows in set (0.00 sec)
```

7.

1. Tampilkan nama dan npm mahasiswa yang nilai **UAS** lebih dari rata-rata.

```
mysql> SELECT namaMhs, mahasiswa.NPM from mahasiswa
-> INNER JOIN nilai ON mahasiswa.NPM = nilai.NPM
-> WHERE UAS > (SELECT AVG(UAS) FROM nilai); #Prames-59
```

namaMhs	NPM
Eli	10296126
Jaka	10296832
Sisi	21196353
Putra	41296525

```
4 rows in set (0.00 sec)
```

2. Tampilkan daftar nama mahasiswa yang mendapat nilai UTS paling rendah.

```
mysql> SELECT namaMhs FROM mahasiswa
-> NATURAL JOIN nilai
-> WHERE UTS = (SELECT MIN(UTS) FROM nilai); #Prames-59
```

namaMhs
Beni

```
1 row in set (0.01 sec)
```

3. Tampilkan nama dan npm mahasiswa dengan syarat UTS > 50.

```
mysql> SELECT namaMhs, NPM FROM mahasiswa
-> NATURAL JOIN nilai
-> WHERE UTS > 50; #Prames-59
```

namaMhs	NPM
Eli	10296126
Jaka	10296832
Sisi	21196353
Beni	31296500
Putra	41296525
Yunita	50096487

```
6 rows in set (0.00 sec)
```

4. Tampilkan npm mahasiswa dengan nilai akhir  $((uas+uts)/2) \geq 75$ .

```
mysql> SELECT NPM FROM mahasiswa
-> NATURAL JOIN nilai
-> WHERE ((UTS+UAS)/2) >= 75; #Prames-59
```

NPM
10296126
10296832
21196353
41296525

```
4 rows in set (0.04 sec)
```

5. Tampilkan nama dan npm mahasiswa yang mengambil MK etika profesi.



```
mysql> SELECT namaMhs, NPM FROM mahasiswa
-> NATURAL JOIN matkul
-> NATURAL JOIN nilai
-> WHERE mahasiswa.NPM = nilai.NPM
-> AND matkul.noMK = nilai.noMK
-> AND matkul.namaMK = "Etika Profesi"; #Prames-59
```

namaMhs	NPM
Sisi	21196353
Putra	41296525

2 rows in set (0.00 sec)

6. Gunakan perintah INNER JOIN untuk menggabungkan tabel Nilai dan tabel Mahasiswa berdasarkan npm, kemudian urutkan berdasarkan nilai (UTS dan UAS).

```
mysql> SELECT * FROM nilai
-> INNER JOIN mahasiswa
-> ON nilai.NPM = mahasiswa.NPM
-> ORDER BY (UTS+UAS); #Prames-59
```

NPM	noMK	UTS	UAS	NPM	namaMhs	alamatMhs
31296500	TI021	55	40	31296500	Beni	Depok
50096487	TI032	85	60	50096487	Yunita	Bekasi
21196353	TI022	75	75	21196353	Sisi	Majalengka
10296832	TI021	80	75	10296832	Jaka	Garut
10296126	TI032	70	90	10296126	Eli	Jakarta
41296525	TI022	90	80	41296525	Putra	Bogor

6 rows in set (0.01 sec)

7. Gunakan perintah OUTER JOIN untuk menggabungkan tabel Nilai dan tabel Mahasiswa berdasarkan npm.

```
mysql> SELECT * FROM nilai
-> NATURAL LEFT JOIN mahasiswa
-> WHERE nilai.NPM = mahasiswa.NPM; #Prames-59
```

NPM	noMK	UTS	UAS	namaMhs	alamatMhs
10296126	TI032	70	90	Eli	Jakarta
10296832	TI021	80	75	Jaka	Garut
21196353	TI022	75	75	Sisi	Majalengka
31296500	TI021	55	40	Beni	Depok
41296525	TI022	90	80	Putra	Bogor
50096487	TI032	85	60	Yunita	Bekasi

```
6 rows in set (0.00 sec)
```