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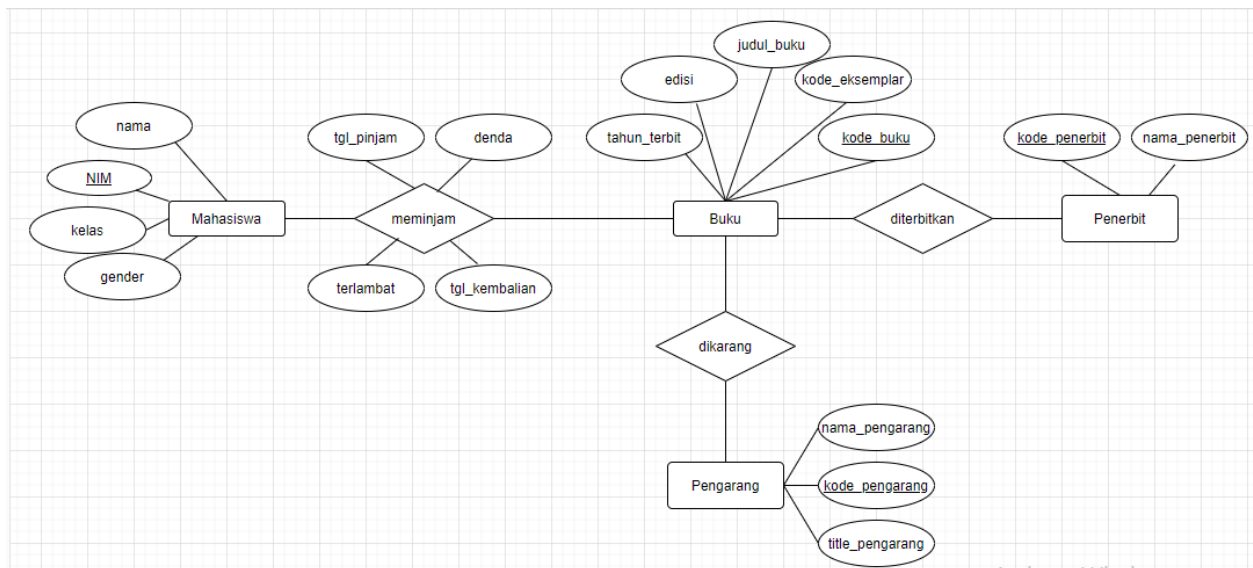
Kelas : A

Matkul :Praktikum Sistem Basis Data

UJIAN TENGAH SEMESTER

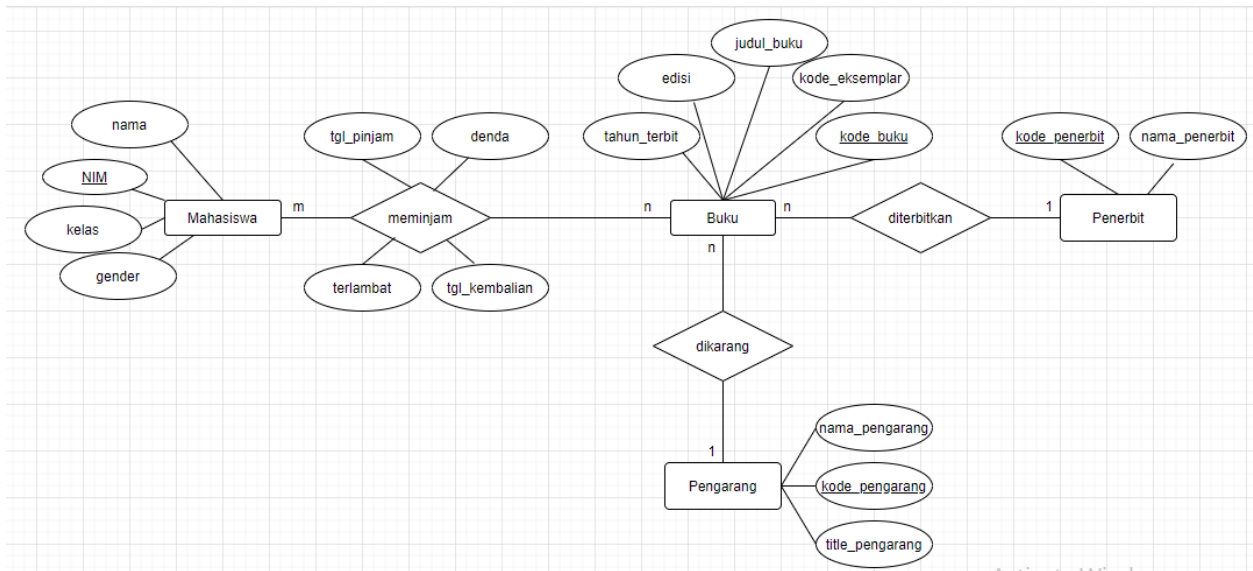
a. Membuat diagram entity relation (ERD) database sirkulasi perpustakaan

1. Entity nama mempunyai atribut : NIM, nama, kelas dan gender.
2. Entity buku mempunyai atribut : tahun_terbit, edisi, judul_buku, kode_eksemplar dan kode_buku.
3. Entity penerbit mempunyai atribut : kode_penerbit dan nama_penerbit.
4. Entity pengarang mempunyai atribut : nama_pengarang, kode_pengarang dan title_pengarang.
5. Relationship meminjam mempunyai atribut : tgl_peminjam, denda, terlambat, dan tgl_kembalian.

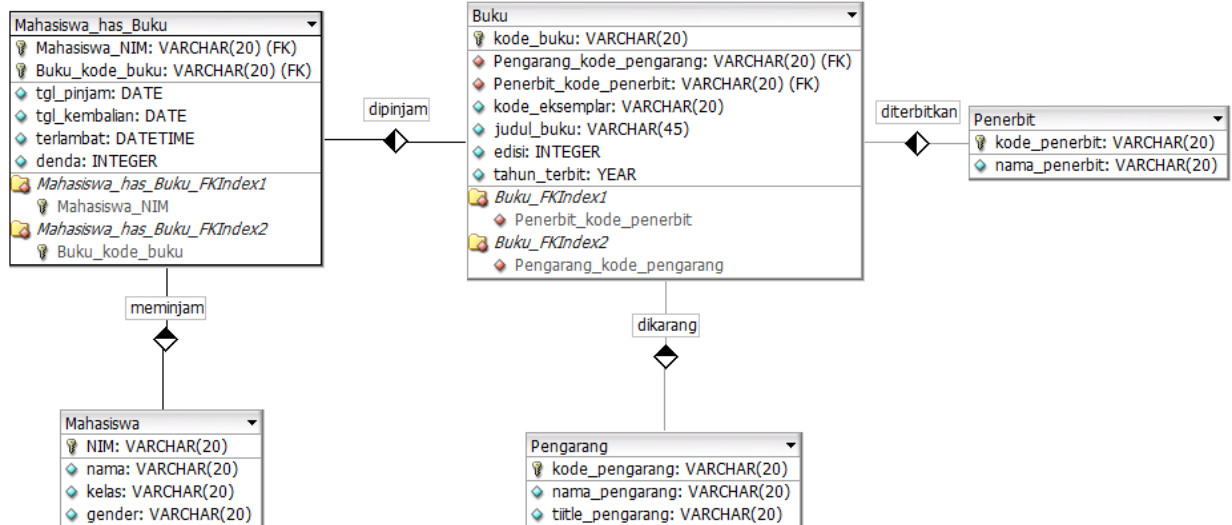


b. Menyebutkan relasi

1. Mahasiswa dengan buku (many to many)
2. Buku dengan pengarang (many to one)
3. Buku dengan penerbit (many to one)



c. Rancangan ERD dengan tool DBDesigner



- d. Implementasi DDL
1. Table mahasiswa

```
MariaDB [(none)]> create database Perpustakaan;
Query OK, 1 row affected (0.092 sec)

MariaDB [(none)]> use Perpustakaan;
Database changed
MariaDB [Perpustakaan]> CREATE TABLE mahasiswa(NIM VARCHAR(20) PRIMARY KEY,
-> nama_mhs VARCHAR(20) NOT NULL,
-> kelas VARCHAR(20) NOT NULL,
-> gender VARCHAR(20) NOT NULL);
Query OK, 0 rows affected (0.270 sec)
```

```
MariaDB [Perpustakaan]> describe mahasiswa;
+-----+-----+-----+-----+-----+-----+
| Field      | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| NIM        | varchar(20)   | NO   | PRI | NULL    |       |
| nama_mhs   | varchar(20)   | NO   |     | NULL    |       |
| kelas      | varchar(20)   | NO   |     | NULL    |       |
| gender     | varchar(20)   | NO   |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.022 sec)
```

2. Table penerbit

```
MariaDB [Perpustakaan]> CREATE TABLE penerbit(kode_penerbit VARCHAR(20) PRIMARY KEY,
-> nama_penerbit VARCHAR(20) NOT NULL);
Query OK, 0 rows affected (0.265 sec)

MariaDB [Perpustakaan]> describe penerbit;
+-----+-----+-----+-----+-----+-----+
| Field          | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| kode_penerbit  | varchar(20)   | NO   | PRI | NULL    |       |
| nama_penerbit  | varchar(20)   | NO   |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.024 sec)
```

3. Table pengarang

```
MariaDB [Perpustakaan]> CREATE TABLE pengarang(kode_pengarang VARCHAR(20) PRIMARY KEY,
-> nama_pengarang VARCHAR(20) NOT NULL,
-> title_pengarang VARCHAR(20) NOT NULL);
Query OK, 0 rows affected (0.226 sec)

MariaDB [Perpustakaan]> describe pengarang;
+-----+-----+-----+-----+-----+-----+
| Field          | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| kode_pengarang | varchar(20)   | NO   | PRI | NULL    |       |
| nama_pengarang | varchar(20)   | NO   |     | NULL    |       |
| title_pengarang | varchar(20)   | NO   |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.095 sec)
```

4. Table mahasiswa_has_buku

```
MariaDB [Perpustakaan]> CREATE TABLE mahasiswa_has_buku(  
  -> NIMFK VARCHAR(20) REFERENCES mahasiswa(NIM) ON DELETE CASCADE ON UPDATE CASCADE,  
  -> kode_bukuFK VARCHAR(20) REFERENCES buku(kode_buku) ON DELETE CASCADE ON UPDATE CASCADE,  
  -> PRIMARY KEY(NIMFK,kode_bukuFK),  
  -> tgl_pinjam DATE NOT NULL,  
  -> tgl_kembalian DATE NOT NULL,  
  -> terlambat DATETIME NOT NULL,  
  -> denda INTEGER NOT NULL);  
Query OK, 0 rows affected (0.339 sec)  
  
MariaDB [Perpustakaan]> describe mahasiswa_has_buku;  
+-----+-----+-----+-----+-----+-----+  
| Field          | Type          | Null | Key | Default | Extra |  
+-----+-----+-----+-----+-----+-----+  
| NIMFK          | varchar(20)   | NO   | PRI | NULL    |       |  
| kode_bukuFK    | varchar(20)   | NO   | PRI | NULL    |       |  
| tgl_pinjam     | date          | NO   |     | NULL    |       |  
| tgl_kembalian  | date          | NO   |     | NULL    |       |  
| terlambat      | datetime      | NO   |     | NULL    |       |  
| denda          | int(11)       | NO   |     | NULL    |       |  
+-----+-----+-----+-----+-----+-----+  
6 rows in set (0.023 sec)
```

5. Table buku

```
MariaDB [Perpustakaan]> CREATE TABLE buku(kode_buku VARCHAR(20) PRIMARY KEY,  
  -> pengarang_kode_pengarangFK VARCHAR(20) NOT NULL,  
  -> penerbit_kode_penerbitFK VARCHAR(20) NOT NULL,  
  -> kode_eksemplar VARCHAR(20) NOT NULL,  
  -> judul_buku VARCHAR(45) NOT NULL,  
  -> edisi INTEGER NOT NULL,  
  -> tahun_terbit YEAR NOT NULL);  
Query OK, 0 rows affected (0.369 sec)  
  
MariaDB [Perpustakaan]> describe buku;  
+-----+-----+-----+-----+-----+-----+  
| Field          | Type          | Null | Key | Default | Extra |  
+-----+-----+-----+-----+-----+-----+  
| kode_buku      | varchar(20)   | NO   | PRI | NULL    |       |  
| pengarang_kode_pengarangFK | varchar(20) | NO   |     | NULL    |       |  
| penerbit_kode_penerbitFK | varchar(20) | NO   |     | NULL    |       |  
| kode_eksemplar | varchar(20)   | NO   |     | NULL    |       |  
| judul_buku     | varchar(45)   | NO   |     | NULL    |       |  
| edisi          | int(11)       | NO   |     | NULL    |       |  
| tahun_terbit   | year(4)       | NO   |     | NULL    |       |  
+-----+-----+-----+-----+-----+-----+  
7 rows in set (0.024 sec)
```

e. Implementasi DML (10 record)

1. Table mahasiswa

```
MariaDB [Perpustakaan]> INSERT INTO mahasiswa VALUES
-> ("L200180150","Ahmad Fauzi","E","Laki-laki"),
-> ("L200180151","Indah Setia","E","Perempuan"),
-> ("L200180152","Fitri Nurul","E","Perempuan"),
-> ("L200180153","Eka Nur","E","Perempuan"),
-> ("L200180154","Husain Abdur Rozaq","E","Laki-laki"),
-> ("L200180155","Irkhas Robani","E","Laki-laki"),
-> ("L200180156","Arlinda Maharani","E","Perempuan"),
-> ("L200180157","Putri Novitasari","E","Perempuan"),
-> ("L200180158","Khoirus Fauzi","E","Laki-laki"),
-> ("L200180159","Sekar Mayasari","E","Perempuan"),
-> ("L200180160","Raka Putra","E","Laki-laki");
Query OK, 11 rows affected (0.123 sec)
Records: 11 Duplicates: 0 Warnings: 0
```

```
MariaDB [Perpustakaan]> select *from mahasiswa;
+-----+-----+-----+-----+
| NIM      | nama_mhs      | kelas | gender |
+-----+-----+-----+-----+
| L200180150 | Ahmad Fauzi    | E     | Laki-laki |
| L200180151 | Indah Setia    | E     | Perempuan |
| L200180152 | Fitri Nurul    | E     | Perempuan |
| L200180153 | Eka Nur        | E     | Perempuan |
| L200180154 | Husain Abdur Rozaq | E     | Laki-laki |
| L200180155 | Irkhas Robani  | E     | Laki-laki |
| L200180156 | Arlinda Maharani | E     | Perempuan |
| L200180157 | Putri Novitasari | E     | Perempuan |
| L200180158 | Khoirus Fauzi  | E     | Laki-laki |
| L200180159 | Sekar Mayasari | E     | Perempuan |
| L200180160 | Raka Putra     | E     | Laki-laki |
+-----+-----+-----+-----+
11 rows in set (0.000 sec)
```

2. Table penerbit

```
MariaDB [Perpustakaan]> INSERT INTO penerbit VALUES
-> ("P001","Gramedia"),
-> ("P002","Andi Publisher"),
-> ("P003","Erlangga"),
-> ("P004","Elexmedia Komputindo"),
-> ("P005","Tiga Serangkai"),
-> ("P006","Agro Media"),
-> ("P007","Mizan"),
-> ("P008","Mandiri Dian Semesta"),
-> ("P009","Expose"),
-> ("P010","Bentang Pustaka");
Query OK, 10 rows affected (0.086 sec)
Records: 10 Duplicates: 0 Warnings: 0
```

```
MariaDB [Perpustakaan]> select *from penerbit;
+-----+-----+
| kode_penerbit | nama_penerbit |
+-----+-----+
| P001          | Gramedia      |
| P002          | Andi Publisher|
| P003          | Erlangga      |
| P004          | Elexmedia Komputindo |
| P005          | Tiga Serangkai |
| P006          | Agro Media    |
| P007          | Mizan         |
| P008          | Mandiri Dian Semesta |
| P009          | Expose        |
| P010          | Bentang Pustaka |
+-----+-----+
10 rows in set (0.000 sec)
```

3. Table pengarang

```
MariaDB [Perpustakaan]> INSERT INTO pengarang VALUES
-> ("PGR001","Wiwit Supriyanti","S.Kom, M.Kom."),
-> ("PGR002","Bambang Cahyono Al Jadi","S.T."),
-> ("PGR003","Muhammad Rohmadi","M.Hum"),
-> ("PGR004","Yakub Nasucha","M.Hum"),
-> ("PGR005","Syamsul Hidayat","M.Ag"),
-> ("PGR006","Samik Wahab","Sp.A(K)"),
-> ("PGR007","Agus Budi Wahyudi","M.Hum"),
-> ("PGR008","Nuzul Qoriah","S.Pd"),
-> ("PGR009","Mahasri Shobahiya","M.Ag"),
-> ("PGR010","Sudarno Shobron","M.Ag");
Query OK, 10 rows affected, 1 warning (0.090 sec)
Records: 10 Duplicates: 0 Warnings: 1
```

```
MariaDB [Perpustakaan]> select *from pengarang;
```

kode_pengarang	nama_pengarang	title_pengarang
PGR001	Wiwit Supriyanti	S.Kom, M.Kom.
PGR002	Bambang Cahyono Al J	S.T.
PGR003	Muhammad Rohmadi	M.Hum
PGR004	Yakub Nasucha	M.Hum
PGR005	Syamsul Hidayat	M.Ag
PGR006	Samik Wahab	Sp.A(K)
PGR007	Agus Budi Wahyudi	M.Hum
PGR008	Nuzul Qoriah	S.Pd
PGR009	Mahasri Shobahiya	M.Ag
PGR010	Sudarno Shobron	M.Ag

```
10 rows in set (0.000 sec)
```

4. Table buku

```
MariaDB [Perpustakaan]> INSERT INTO buku VALUES
-> ("B001","PGR001","P001","00.01.WS/001","CMS OpenCart untuk Commerce",2,2001),
-> ("B002","PGR002","P002","00.01.WS/009","English Grammar",1,2010),
-> ("B003","PGR003","P003","00.01.WS/007","Bahasa Indonesia untuk Penulisan Karya Tulis Ilmiah",4,2019),
-> ("B004","PGR004","P004","00.01.WS/007","Bahasa Indonesia untuk SMA",4,2017),
-> ("B005","PGR005","P005","00.01.WS/200","Studi Kemuhmadiyah",10,2017),
-> ("B006","PGR006","P006","00.01.WS/004","Kardiologi Anak",1,2017),
-> ("B007","PGR007","P007","00.01.WS/004","Bahasa Indonesia untuk SMP",4,2018),
-> ("B008","PGR008","P008","00.01.WS/014","Complate English",1,2015),
-> ("B009","PGR009","P009","00.01.WS/026","Sejarah Muhammadiyah",11,2013),
-> ("B010","PGR010","P010","00.01.WS/046","Organisasi Otonom Muhammadiyah",11,2017);
Query OK, 10 rows affected, 1 warning (0.081 sec)
Records: 10 Duplicates: 0 Warnings: 1
```

```
MariaDB [Perpustakaan]> select *from buku;
```

kode_buku	pengarang_kode_pengarangFK	penerbit_kode_penerbitFK	kode_eksemplar	judul_buku	edisi	tahun_terbit
B001	PGR001	P001	00.01.WS/001	CMS OpenCart untuk Commerce	2	2001
B002	PGR002	P002	00.01.WS/009	English Grammar	1	2010
B003	PGR003	P003	00.01.WS/007	Bahasa Indonesia untuk Penulisan Karya Tulis	4	2019
B004	PGR004	P004	00.01.WS/007	Bahasa Indonesia untuk SMA	4	2017
B005	PGR005	P005	00.01.WS/200	Studi Kemuhmadiyah	10	2017
B006	PGR006	P006	00.01.WS/004	Kardiologi Anak	1	2017
B007	PGR007	P007	00.01.WS/004	Bahasa Indonesia untuk SMP	4	2018
B008	PGR008	P008	00.01.WS/014	Complate English	1	2015
B009	PGR009	P009	00.01.WS/026	Sejarah Muhammadiyah	11	2013
B010	PGR010	P010	00.01.WS/046	Organisasi Otonom Muhammadiyah	11	2017

```
10 rows in set (0.000 sec)
```

5. Table mahasiswa_has_buku

```
MariaDB [Perpustakaan]> INSERT INTO mahasiswa_has_buku VALUES
-> ("L200180150","B001","2020-3-1","2020-3-8","2020-3-8 12.59.00",1000),
-> ("L200180151","B002","2020-3-1","2020-3-8","2020-3-8 12.59.00",1000),
-> ("L200180152","B003","2020-3-4","2020-3-12","2020-3-12 12.59.00",2000),
-> ("L200180153","B004","2020-3-4","2020-3-12","2020-3-12 12.59.00",5000),
-> ("L200180154","B005","2020-3-10","2020-3-17","2020-3-17 12.59.00",3000),
-> ("L200180154","B006","2020-3-10","2020-3-17","2020-3-17 12.59.00",5000),
-> ("L200180155","B007","2020-3-14","2020-3-21","2020-3-21 12.59.00",3000),
-> ("L200180156","B008","2020-3-16","2020-3-23","2020-3-23 12.59.00",3000),
-> ("L200180157","B009","2020-3-17","2020-3-24","2020-3-24 12.59.00",2000),
-> ("L200180158","B010","2020-3-17","2020-3-24","2020-3-24 12.59.00",3000),
-> ("L200180159","B010","2020-3-18","2020-3-25","2020-3-25 12.59.00",3000),
-> ("L200180160","B006","2020-3-18","2020-3-25","2020-3-25 12.59.00",5000);
Query OK, 12 rows affected (0.336 sec)
Records: 12  Duplicates: 0  Warnings: 0
```

```
MariaDB [Perpustakaan]> select *from mahasiswa_has_buku;
```

NIMFK	kode_bukuFK	tgl_pinjam	tgl_kembalian	terlambat	denda
L200180150	B001	2020-03-01	2020-03-08	2020-03-08 12:59:00	1000
L200180151	B002	2020-03-01	2020-03-08	2020-03-08 12:59:00	1000
L200180152	B003	2020-03-04	2020-03-12	2020-03-12 12:59:00	2000
L200180153	B004	2020-03-04	2020-03-12	2020-03-12 12:59:00	5000
L200180154	B005	2020-03-10	2020-03-17	2020-03-17 12:59:00	3000
L200180154	B006	2020-03-10	2020-03-17	2020-03-17 12:59:00	5000
L200180155	B007	2020-03-14	2020-03-21	2020-03-21 12:59:00	3000
L200180156	B008	2020-03-16	2020-03-23	2020-03-23 12:59:00	3000
L200180157	B009	2020-03-17	2020-03-24	2020-03-24 12:59:00	2000
L200180158	B010	2020-03-17	2020-03-24	2020-03-24 12:59:00	3000
L200180159	B010	2020-03-18	2020-03-25	2020-03-25 12:59:00	3000
L200180160	B006	2020-03-18	2020-03-25	2020-03-25 12:59:00	5000

```
12 rows in set (0.000 sec)
```