

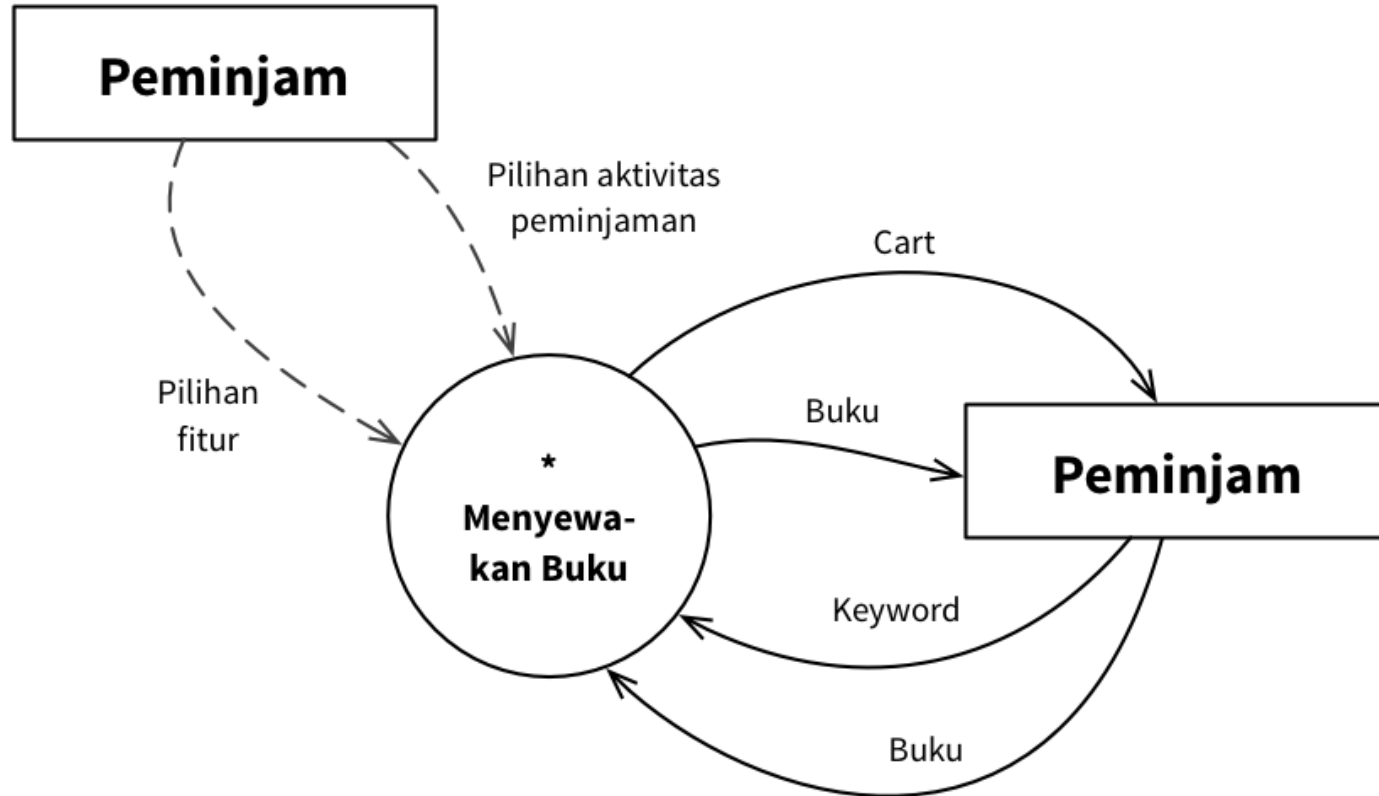


Model to Implementation

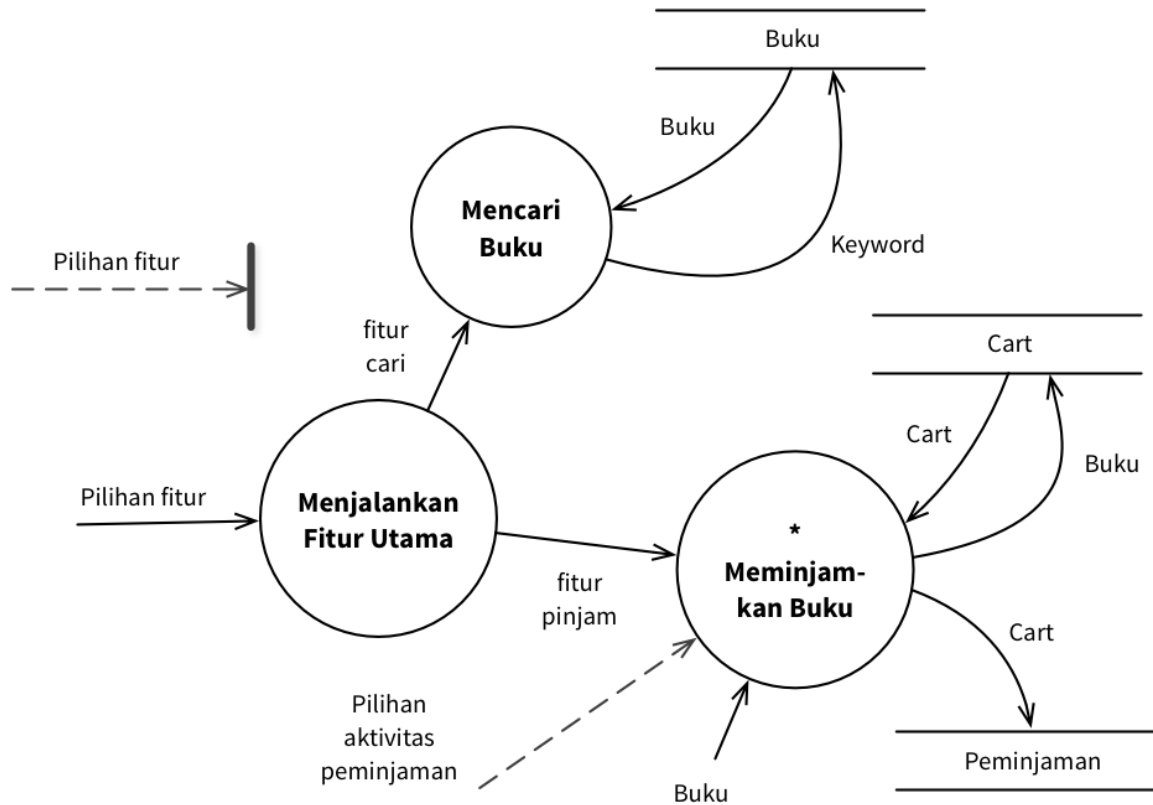
Structured Oriented

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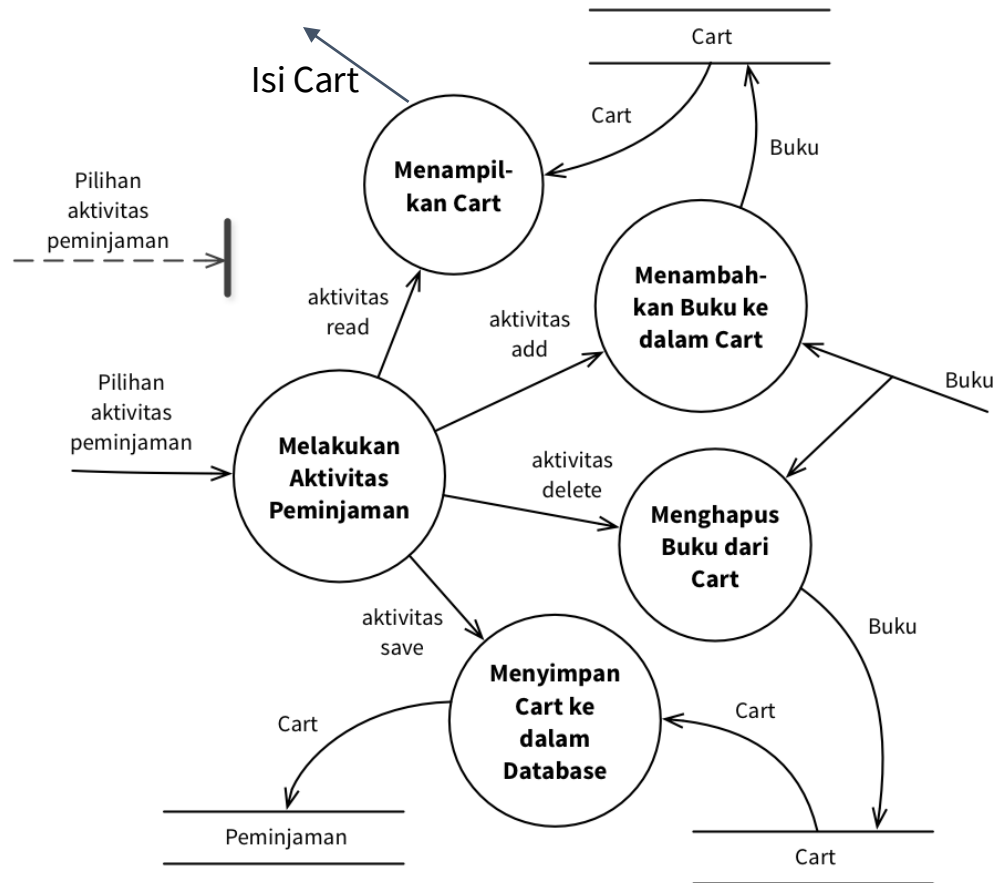
Context Diagram (DFD Lv.0)



Data Flow Diagram Lv.1

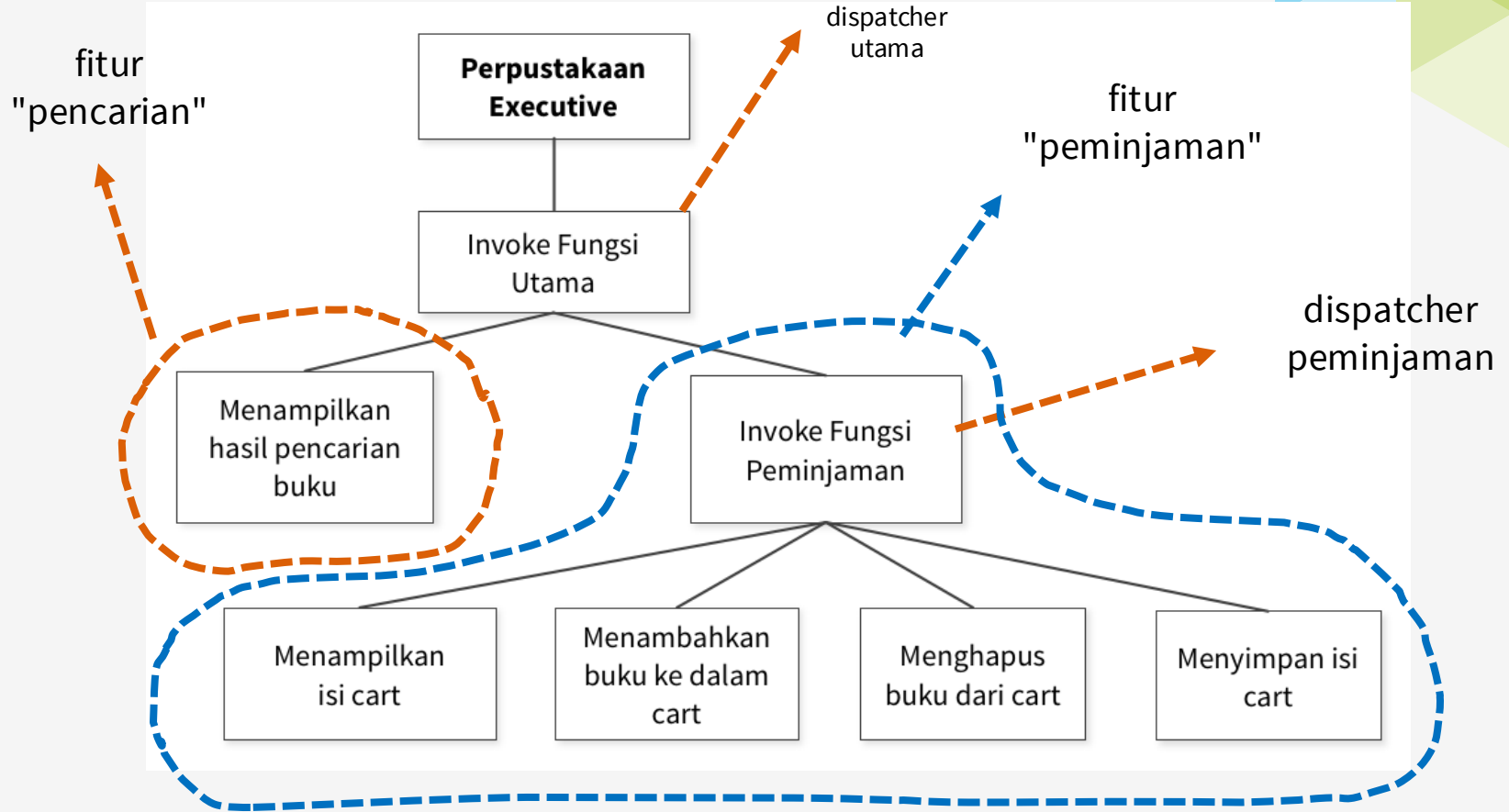


Data Flow Diagram Lv.2



Implementasi Transaction Mapping

Transaction Mapping



Implementasi Executive dan Fitur

- Struktur direktori

Perpustakaan/`cari.php`

`/pinjam/read-cart.php`

`/add-cart.php`

`/delete-cart.php`

`/save-cart.php`

`/pinjam.php`

`/fitur.php`

proses

dispatcher



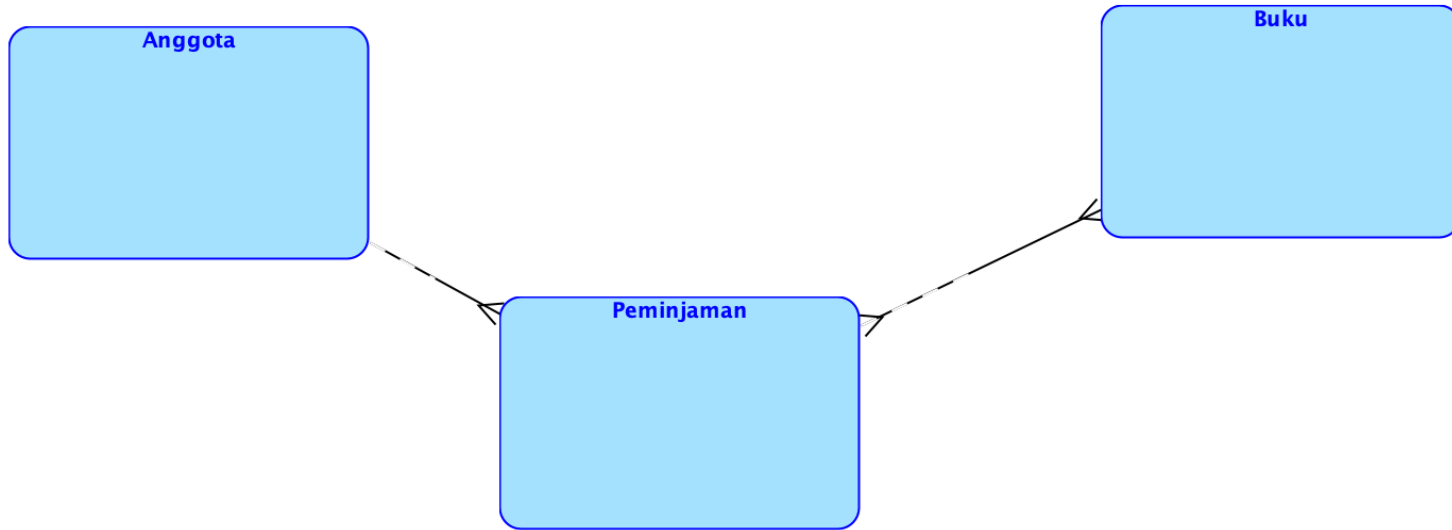
Implementasi Data



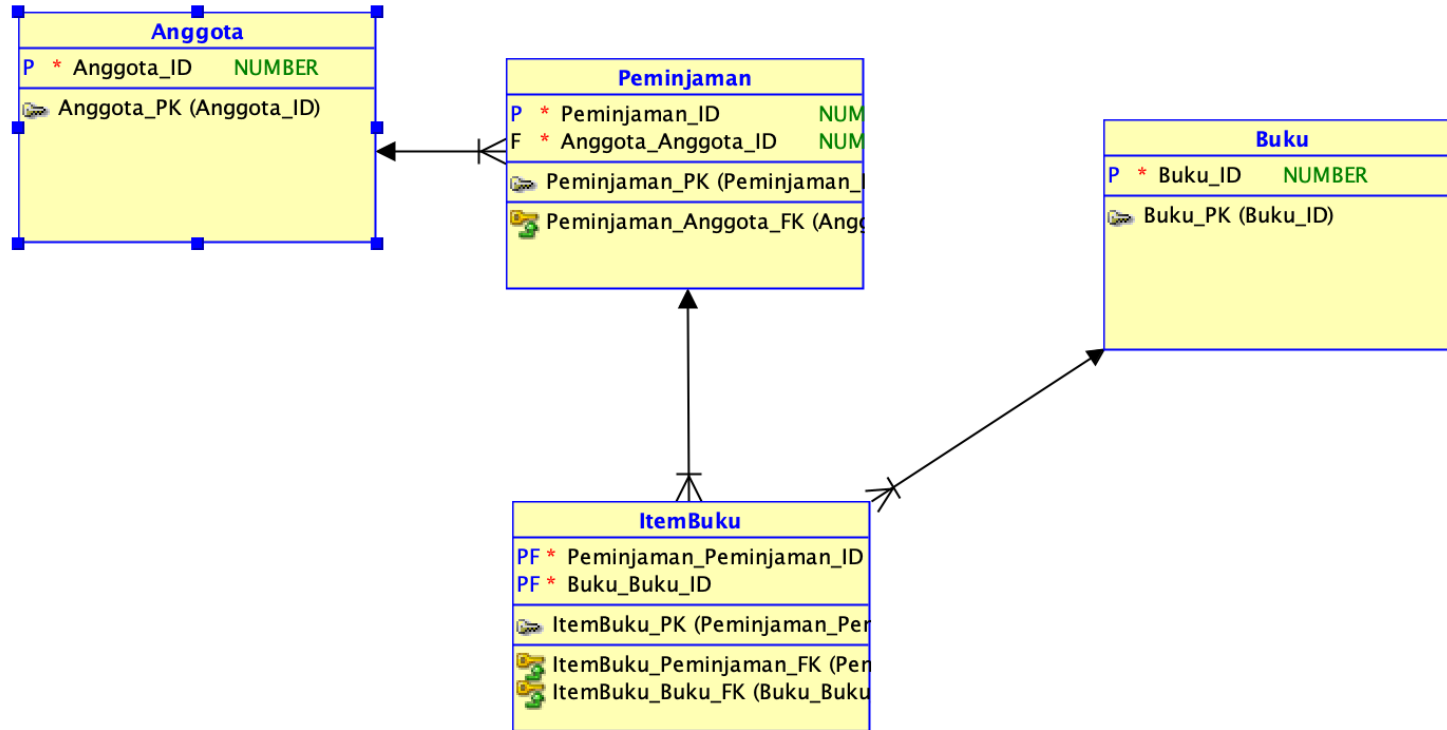
Implementasi Diagram ER: Where To Look?

- Data Dictionary
- Data Definition
- ER Diagram: Logical
- ER Diagram: Physical

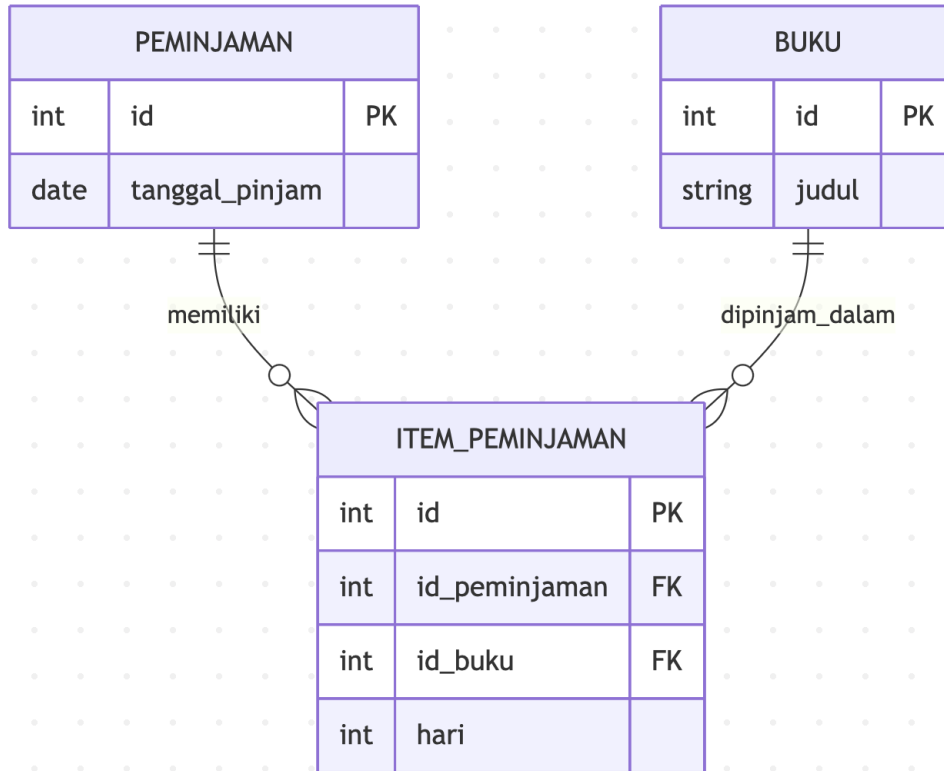
ER Diagram: Logical



ER Mapping



ER Diagram: Physical



DDL: Buku, Peminjaman

```
-- -----  
-- Table `perpustakaan`.`peminjaman`  
-- -----
```

```
CREATE TABLE IF NOT EXISTS `perpustakaan`.`peminjaman` (  
  `id` INT NOT NULL AUTO_INCREMENT,  
  `tanggal` DATE NULL,  
  PRIMARY KEY (`id`)  
) ENGINE = InnoDB;
```

```
-- -----  
-- Table `perpustakaan`.`buku`  
-- -----
```

```
CREATE TABLE IF NOT EXISTS `perpustakaan`.`buku` (  
  `id` INT NOT NULL AUTO_INCREMENT,  
  `judul` VARCHAR(100) NULL,  
  PRIMARY KEY (`id`)  
) ENGINE = InnoDB;
```

DDL: Dipinjam

```
CREATE TABLE IF NOT EXISTS `perpustakaan`.`dipinjam` (  
  `peminjaman_id` INT NOT NULL,  
  `buku_id` INT NOT NULL,  
  `hari` INT(2) NOT NULL,  
  PRIMARY KEY (`peminjaman_id`, `buku_id`),  
  INDEX `fk_peminjaman_has_buku_buku1_idx` (`buku_id` ASC),  
  INDEX `fk_peminjaman_has_buku_peminjaman_idx` (`peminjaman_id`  
ASC),  
  CONSTRAINT `fk_peminjaman_has_buku_peminjaman`  
    FOREIGN KEY (`peminjaman_id`)  
    REFERENCES `perpustakaan`.`peminjaman` (`id`)  
    ON DELETE CASCADE  
    ON UPDATE CASCADE,  
  CONSTRAINT `fk_peminjaman_has_buku_buku1`  
    FOREIGN KEY (`buku_id`)  
    REFERENCES `perpustakaan`.`buku` (`id`)  
    ON DELETE CASCADE  
    ON UPDATE CASCADE  
) ENGINE = InnoDB;
```

Implementasi Process Specification (PSPEC)

Implementasi Proses: PSPEC

- PSPEC – Mencari Buku

- Data Input

- Keyword (Text)

- Data Output

- Daftar buku yang judul bukunya mengandung Keyword

- Algoritme

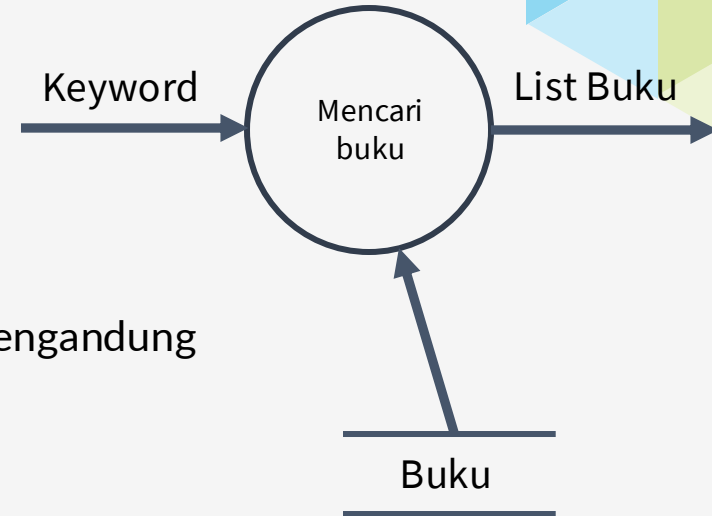
keyword = INPUT(keyword)

connect to DB

result = SELECT id, judul FROM buku WHERE judul LIKE '%keyword%'

close DB connection

tampilkan result dalam format tabel



Implementasi Proses: PSPEC

```
function cari( $keyword ) {  
    $link = mysqli_connect(  
        "127.0.0.1", "my_user", "my_password", "my_db");  
    $query =  
        "SELECT id, judul FROM buku WHERE judul LIKE '%keyword%'";  
    $result = mysqli_query( $link, $query );  
    while ( $row = mysqli_fetch_array( $result ) ) {  
        $listbuku[] = $row;  
    }  
    mysqli_close( $link );  
    return $listbuku;  
}
```

Implementasi Dispatcher (CSPEC)

Implementasi Dispatcher: CSPEC

CSPEC – Fitur Utama

Fitur	Cari Buku	Menampilkan Cart Peminjaman
N/A	1	0
cari	1	0
pinjam	0	1

CSPEC – Fitur Peminjaman

Fitur	Menampilkan Cart	Menambahkan Buku ke dalam Cart	Menghapus Buku dari Cart	Menyimpan Cart ke Database
N/A	1	0	0	0
read	1	0	0	0
add	0	1	0	0
delete	0	0	1	0
save	0	0	0	1

Dispatcher Peminjaman

CSPEC: Peminjaman

```
include read-cart.php;  
include add-cart.php;  
include delete-cart.php;  
include save-cart.php;
```

```
$fitur = $_GET['fitur'];  
switch($fitur) {  
    case 'add':  
        $idbuku = $_GET['idbuku'];  
        add($idbuku); break;  
    case 'delete':  
        $idbuku = $_GET['idbuku'];  
        delete($idbuku); break;  
    case 'save': save(); break;  
    case 'read':  
    default: read(); break;  
}
```

Dispatcher Fitur Utama

CSPEC: Fitur Utama

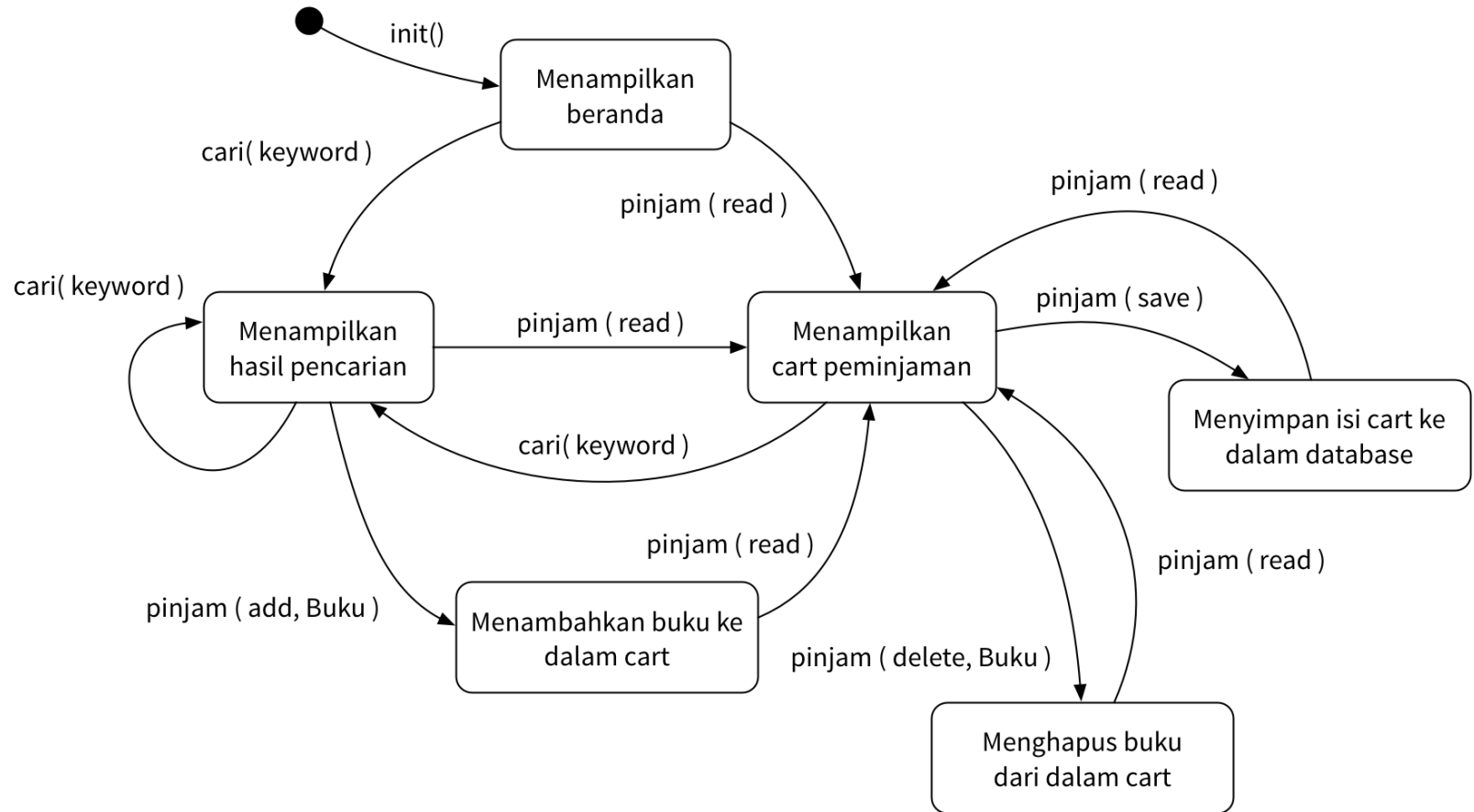
```
include cari.php;
$fitur = $_GET['fitur'];
switch($fitur) {
    case 'pinjam':
        header('location:pinjam/pinjam.php?fitur=read');
        exit;
    case 'cari':
    default:
        $keyword = $_GET['keyword'];
        $listbuku = cari( $keyword );
        display( $listbuku ); // fungsi untuk menampilkan buku
        break;                // dalam bentuk tabel
}
```



Alihkan ke dispatcher peminjaman

Implementasi State Transition Diagram

State Transition Diagram



Modifikasi Dispatcher Peminjaman: State Transition

...

```
switch($fitur) {
```

```
  case 'add':
```

```
    $idbuku = $_GET['idbuku'];
```

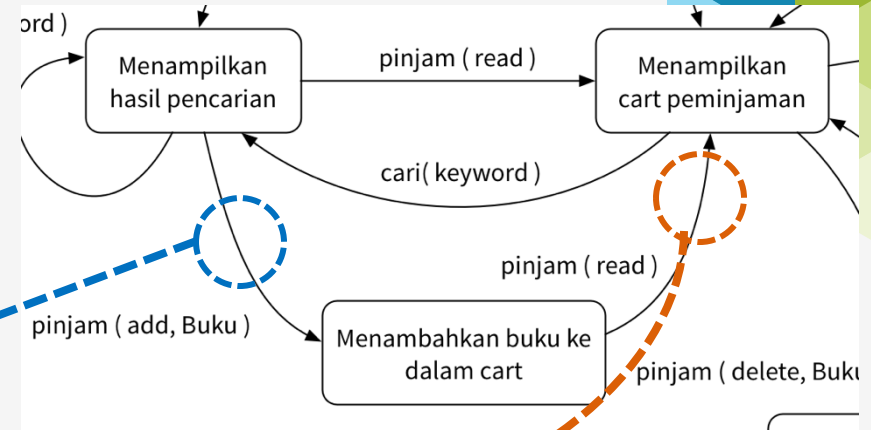
```
    add($idbuku);
```

```
    header('location:pinjam.php?fitur=read');
```

```
    exit;
```

```
    ...
```

```
}
```



Selesai eksekusi
penambahan buku ke
cart, alihkan ke fitur
membaca cart

Run and Test

Ada Pertanyaan

https://gitlab.com/ies5/perpustakaan_terstruktur