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|  | **JDC Bootcamp 2017**  **PT. ASTRA GRAPHIA INFORMATION TECHNOLOGY** |

***Technical Spesification Document (TSD)***

**<< GDBOOKSTORE >>**

**Dipersiapkan Oleh:**

**<< ASTRA >>**

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| *Project Leader* | *:* | Pascalis Bangkit |
| *Document Number* | *:* |  |
| *Document Version* | *:* |  |
| *Created By* | *:* |  |
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**Technical Design Approval Page**

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We, the undersigned, hereby agree that [Project Name] has passed the Functional Design stage of [Module Name] module.

Note: Enterprise Architect structure and documentation for Technical Design will be re-arranged by Astra Graphia Informatian Technology (AGIT), according to AGIT standard on maintenance phase

**Document Author**

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**Approved By**

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***Revision History***

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| --- | --- | --- | --- |
| **Version** | **Date** | **Author** | **Change Summary** |
| 1.0 | 20-Jul-2017 |  |  |
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***References***

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***Glossary***

| **Term** | **Description** |
| --- | --- |
| AGIT | Astra Graphia Information Technology |
| AI | Astra International |
| EA | Enterprise Architect |
| UML | Unified Modelling Language |
| TSD | Technical Spesification Document |
| FSD | Functional Spesification Document |
| Use Case Diagram | Diagram usecase yang digunakan untuk menggambarkan secara ringkas siapa yang menggunakan sistem dan apa saja yang bisa dilakukannya. |
| Business Process | Suatu kumpulan aktivitas atau pekerjaan terstruktur yang saling terkait untuk menyelesaikan suatu masalah tertentu atau yang menghasilkan produk atau layanan (demi meraih tujuan tertentu). |
| Class Diagram | Model statis yang menggambarkan struktur dan deskripsi class serta hubungannya antara class. |
| Data Model | Sekumpulan konsep-konsep untuk menerangkan data, hubungan-hubungan antara data dan batasan-batasan data yang terintegrasi di dalam suatu organisasi. |
| ERD | Entity Relationship Diagram |
| Sequence Diagram | Suatu diagram yang memperlihatkan atau menampilkan interaksi-interaksi antar objek di dalam sistem yang disusun pada sebuah urutan atau rangkaian waktu. |
| Data Flow Diagram | Suatu diagram yang menggunakan notasi-notasi untuk menggambarkan arus dari data sistem, yang penggunaannya sangat membantu untuk memahami sistem secara logika, tersruktur dan jelas. DFD merupakan alat bantu dalam menggambarkan atau menjelaskan sistem yang sedang berjalan logis. |

**Pendahuluan**

1. **Deskripsi**

Program JDC Bootcamp 2017 yang dilaksanakan oleh PT. Astra Graphia Information Technology merupakan suatu program yang dilakukan untuk memberikan bekal, baik mental, skill, maupun pengetahuan bagi para calon kandidat sebelum dilakukan proses offering oleh tim HRD. Program ini berlangsung selama 15 hari kerja yang dimulai dari tanggal 17 Juli – 4 Agustus 2017.

1. **Tujuan**

Tujuan dilaksanakannya JDC Bootcamp 2017 ini adalah sebagai berikut:

1. Mengembangkan kompetensi peserta sebagai *Java Developer*
2. Peserta dapat mengaplikasikan kompetensi pemrograman *Java* dalam ruang lingkup dunia kerjanya sebagai *Java Developer*
3. Mengembangkan *Java Developer* dalam memberikan nilai tambah dalam lingkungan kerjanya sehingga dapat menghasilkan proses yang unggul (*process excellence*).
4. **Ruang Lingkup**

Ruang lingkup dari acara ini meliputi Pre JDC Program, JDC Program, dan juga Evaluasi Bootcamp. Sedangkan ruang lingkup yang diajarkan dalam program tersebut adalah terkait Java dan Teknologi yang berkaitan dengan Java.

**Use Case Diagram - Use Case Diagram**

**Diagram: use case diagram**



Figure: 1 - use case diagram

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| **Use Case:** | Actor1 | | Use Case Id: |
| **Status:** | Proposed | Version: 1.0 | Phase: 1.0 |
| **Author:** | ShantiSiburian | Created: 7/18/2017 | Modified: 7/18/2017 |
| **Notes:** |  | | |

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| **Use Case:** | Admin | | Use Case Id: |
| **Status:** | Proposed | Version: 1.0 | Phase: 1.0 |
| **Author:** | ShantiSiburian | Created: 7/18/2017 | Modified: 7/18/2017 |
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| **Author:** | ShantiSiburian | Created: 7/18/2017 | Modified: 7/18/2017 |
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| **Status:** | Proposed | Version: 1.0 | Phase: 1.0 |
| **Author:** | ShantiSiburian | Created: 7/18/2017 | Modified: 7/18/2017 |
| **Notes:** |  | | |

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| **Author:** | ShantiSiburian | Created: 7/18/2017 | Modified: 7/18/2017 |
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| **Author:** | ShantiSiburian | Created: 7/18/2017 | Modified: 7/18/2017 |
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| **Author:** | ShantiSiburian | Created: 7/18/2017 | Modified: 7/18/2017 |
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|  | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** | *Association* | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** |
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|  | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** | *Association* | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case:** | Manage Layanan | | Use Case Id: |
| **Status:** | Proposed | Version: 1.0 | Phase: 1.0 |
| **Author:** | ShantiSiburian | Created: 7/18/2017 | Modified: 7/18/2017 |
| **Notes:** |  | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Related To:** | **Source** | **Connector** | **Target** |
|  | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** | *Association* | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** |
|  | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** | *Association* | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** |
|  | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** | *Association* | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case:** | Manage Previlege | | Use Case Id: |
| **Status:** | Proposed | Version: 1.0 | Phase: 1.0 |
| **Author:** | ShantiSiburian | Created: 7/18/2017 | Modified: 7/18/2017 |
| **Notes:** |  | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Related To:** | **Source** | **Connector** | **Target** |
|  | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** | *Association* | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case:** | Manage Role | | Use Case Id: |
| **Status:** | Proposed | Version: 1.0 | Phase: 1.0 |
| **Author:** | ShantiSiburian | Created: 7/18/2017 | Modified: 7/18/2017 |
| **Notes:** |  | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Related To:** | **Source** | **Connector** | **Target** |
|  | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** | *Association* | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case:** | Manage user | | Use Case Id: |
| **Status:** | Proposed | Version: 1.0 | Phase: 1.0 |
| **Author:** | ShantiSiburian | Created: 7/18/2017 | Modified: 7/18/2017 |
| **Notes:** |  | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Related To:** | **Source** | **Connector** | **Target** |
|  | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** | *Association* | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case:** | Retrieve Book | | Use Case Id: |
| **Status:** | Proposed | Version: 1.0 | Phase: 1.0 |
| **Author:** | ShantiSiburian | Created: 7/18/2017 | Modified: 7/18/2017 |
| **Notes:** |  | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Related To:** | **Source** | **Connector** | **Target** |
|  | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** | *UseCaseLink* | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** |
|  | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** | *Dependency* | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** |
|  | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** | *UseCaseLink* | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case:** | Retrieve Layanan | | Use Case Id: |
| **Status:** | Proposed | Version: 1.0 | Phase: 1.0 |
| **Author:** | ShantiSiburian | Created: 7/18/2017 | Modified: 7/18/2017 |
| **Notes:** |  | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Related To:** | **Source** | **Connector** | **Target** |
|  | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** | *Dependency* | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** |
|  | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** | *Trace* | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** |
|  | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** | *Association* | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** |
|  | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** | *UseCaseLink* | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** |
|  | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** | *Information Flow* | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** |
|  | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** | *Information Flow* | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case:** | Retrieve Previlege | | Use Case Id: |
| **Status:** | Proposed | Version: 1.0 | Phase: 1.0 |
| **Author:** | ShantiSiburian | Created: 7/18/2017 | Modified: 7/18/2017 |
| **Notes:** |  | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Related To:** | **Source** | **Connector** | **Target** |
|  | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** | *UseCaseLink* | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case:** | Retrieve Role | | Use Case Id: |
| **Status:** | Proposed | Version: 1.0 | Phase: 1.0 |
| **Author:** | ShantiSiburian | Created: 7/18/2017 | Modified: 7/18/2017 |
| **Notes:** |  | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Related To:** | **Source** | **Connector** | **Target** |
|  | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** | *UseCaseLink* | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case:** | Retrieve User | | Use Case Id: |
| **Status:** | Proposed | Version: 1.0 | Phase: 1.0 |
| **Author:** | ShantiSiburian | Created: 7/18/2017 | Modified: 7/18/2017 |
| **Notes:** |  | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Related To:** | **Source** | **Connector** | **Target** |
|  | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** | *UseCaseLink* | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case:** | Update Book | | Use Case Id: |
| **Status:** | Proposed | Version: 1.0 | Phase: 1.0 |
| **Author:** | ShantiSiburian | Created: 7/18/2017 | Modified: 7/18/2017 |
| **Notes:** |  | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Related To:** | **Source** | **Connector** | **Target** |
|  | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** | *UseCaseLink* | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** |
|  | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** | *UseCaseLink* | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** |
|  | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** | *Dependency* | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case:** | Update Layanan | | Use Case Id: |
| **Status:** | Proposed | Version: 1.0 | Phase: 1.0 |
| **Author:** | ShantiSiburian | Created: 7/18/2017 | Modified: 7/18/2017 |
| **Notes:** |  | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Related To:** | **Source** | **Connector** | **Target** |
|  | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** | *UseCaseLink* | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** |
|  | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** | *UseCaseLink* | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case:** | Update Previlege | | Use Case Id: |
| **Status:** | Proposed | Version: 1.0 | Phase: 1.0 |
| **Author:** | ShantiSiburian | Created: 7/18/2017 | Modified: 7/18/2017 |
| **Notes:** |  | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Related To:** | **Source** | **Connector** | **Target** |
|  | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** | *UseCaseLink* | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case:** | Update Role | | Use Case Id: |
| **Status:** | Proposed | Version: 1.0 | Phase: 1.0 |
| **Author:** | ShantiSiburian | Created: 7/18/2017 | Modified: 7/18/2017 |
| **Notes:** |  | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Related To:** | **Source** | **Connector** | **Target** |
|  | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** | *UseCaseLink* | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case:** | Update User | | Use Case Id: |
| **Status:** | Proposed | Version: 1.0 | Phase: 1.0 |
| **Author:** | ShantiSiburian | Created: 7/18/2017 | Modified: 7/18/2017 |
| **Notes:** |  | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Related To:** | **Source** | **Connector** | **Target** |
|  | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** | *UseCaseLink* | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case:** | Use Case1 | | Use Case Id: |
| **Status:** | Proposed | Version: 1.0 | Phase: 1.0 |
| **Author:** | ShantiSiburian | Created: 7/18/2017 | Modified: 7/18/2017 |
| **Notes:** |  | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Related To:** | **Source** | **Connector** | **Target** |
|  | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** | *UseCaseLink* | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case:** | Use Case2 | | Use Case Id: |
| **Status:** | Proposed | Version: 1.0 | Phase: 1.0 |
| **Author:** | ShantiSiburian | Created: 7/18/2017 | Modified: 7/18/2017 |
| **Notes:** |  | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case:** | delete Previlege | | Use Case Id: |
| **Status:** | Proposed | Version: 1.0 | Phase: 1.0 |
| **Author:** | ShantiSiburian | Created: 7/18/2017 | Modified: 7/18/2017 |
| **Notes:** |  | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Related To:** | **Source** | **Connector** | **Target** |
|  | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** | *UseCaseLink* | **element >**  <Element.ParentPackage>.{Element.Name}  **< element** |

**Business Process - Business Process**



Figure 2 - Business Process

**Class Diagram - Class Diagram**



Figure 3 - Class Diagram

**Model Data (ERD) - Data Model**



Figure: 4 -Model Data (ERD)

**Tabel Book**

**Table**

**Columns**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PK** | **Name** | **Type** | **Not Null** | **Unique** | **Len** | **Prec** | **Scale** | **Notes** |
| True | Id\_Book | integer | True | False |  |  |  |  |
| False | Id\_User | integer | False | False |  |  |  |  |
| False | Book\_Name | varchar | False | False | 50 |  |  |  |
| False | Book\_Type | varchar | False | False | 50 |  |  |  |
| False | Description | varchar | False | False | 50 |  |  |  |
| False | Author\_Name | varchar | False | False | 50 |  |  |  |
| False | Total\_Page | varchar | False | False | 50 |  |  |  |
| False | Publisher | varchar | False | False | 50 |  |  |  |
| False | Book\_Price | varchar | False | False | 50 |  |  |  |
| False | Created\_By | varchar | False | False | 50 |  |  |  |
| False | Created\_Date | varchar | False | False | 50 |  |  |  |
| False | Modified\_By | varchar | False | False | 50 |  |  |  |
| False | Modifieed\_Date | varchar | False | False | 50 |  |  |  |
| False | id user | integer | False | False |  |  |  |  |

**Constraints**

| **Name** | **Type** | **Columns** | **Initial Code** | **Notes** |
| --- | --- | --- | --- | --- |
| Id\_Book | «PK» | Id\_Book |  |  |

**Relationship**

| **Columns** | **Association** | **Notes** |
| --- | --- | --- |
|  | **0..\*.**  **element >**  **{Element.Name}**  **< element**  Id\_User  **1**  **element >**  **{Element.Name}**  **< element**  Id\_User |  |

|  |  |  |
| --- | --- | --- |
| (Id\_Book = Id\_Book) | **0..\*.**  **element >**  **{Element.Name}**  **< element**  Id\_Book  **1**  **element >**  **{Element.Name}**  **< element**  Id\_Book |  |

**Tabel Layanan**

**Table**

**Columns**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PK** | **Name** | **Type** | **Not Null** | **Unique** | **Len** | **Prec** | **Scale** | **Notes** |
| True | Id\_Layanan | integer | True | False |  |  |  |  |
| False | Customer\_Name | varchar | False | False | 50 |  |  |  |
| False | Description | varchar | False | False | 50 |  |  |  |
| False | Status\_Layanan | varchar | False | False | 50 |  |  |  |
| False | Total\_Book | integer | False | False |  |  |  |  |
| False | Created\_By | varchar | False | False | 50 |  |  |  |
| False | Created\_Date | integer | False | False |  |  |  |  |
| False | Modified\_By | varchar | False | False | 50 |  |  |  |
| False | Modified\_Date | integer | False | False |  |  |  |  |
| False | Id\_User | integer | False | False |  |  |  |  |
| False | Id\_Book | integer | False | False |  |  |  |  |
| False | id user | integer | False | False |  |  |  |  |

**Constraints**

| **Name** | **Type** | **Columns** | **Initial Code** | **Notes** |
| --- | --- | --- | --- | --- |
| Id\_Book | «FK» | Id\_Book |  |  |
| Id\_Layanan | «PK» | Id\_Layanan |  |  |
| IXFK\_Tabel Layanan\_Tabel User | «index» | id user |  |  |

**Relationship**

| **Columns** | **Association** | **Notes** |
| --- | --- | --- |
| (Id\_Book = Id\_Book) | **0..\*.**  **element >**  **{Element.Name}**  **< element**  Id\_Book  **1**  **element >**  **{Element.Name}**  **< element**  Id\_Book |  |

|  |  |  |
| --- | --- | --- |
|  | **0..\*.**  **element >**  **{Element.Name}**  **< element**  Id\_User  **1**  **element >**  **{Element.Name}**  **< element**  Id\_User |  |

**Tabel Privilege**

**Table**

**Columns**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PK** | **Name** | **Type** | **Not Null** | **Unique** | **Len** | **Prec** | **Scale** | **Notes** |
| True | Id\_Privilege | box | True | False |  |  |  |  |
| False | Privilege\_Name | varchar | False | False | 50 |  |  |  |
| False | Privilege\_Desc | varchar | False | False | 50 |  |  |  |
| False | Id\_role | integer | False | False |  |  |  |  |

**Constraints**

| **Name** | **Type** | **Columns** | **Initial Code** | **Notes** |
| --- | --- | --- | --- | --- |
| Id\_Previlege | «PK» | Id\_Privilege |  |  |
| Id\_Role | «FK» | Id\_role |  |  |

**Relationship**

| **Columns** | **Association** | **Notes** |
| --- | --- | --- |
| (Id\_role = Id\_Role) | **0..\*.**  **element >**  **{Element.Name}**  **< element**  Id\_Role  **1**  **element >**  **{Element.Name}**  **< element**  Id\_Role |  |

**Tabel Role**

**Table**

**Columns**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PK** | **Name** | **Type** | **Not Null** | **Unique** | **Len** | **Prec** | **Scale** | **Notes** |
| True | Id\_Role | integer | True | False |  |  |  |  |
| False | Role\_Name | varchar | False | False | 50 |  |  |  |
| False | Created\_By | varchar | False | False | 50 |  |  |  |
| False | Created\_Date | integer | False | False |  |  |  |  |
| False | Modified\_By | varchar | False | False | 50 |  |  |  |
| False | Modified\_Date | integer | False | False |  |  |  |  |
| False | Id\_User | varchar | False | False | 8 |  |  |  |

**Constraints**

| **Name** | **Type** | **Columns** | **Initial Code** | **Notes** |
| --- | --- | --- | --- | --- |
| Id\_Role | «PK» | Id\_Role |  |  |

**Relationship**

| **Columns** | **Association** | **Notes** |
| --- | --- | --- |
| (Id\_Role = Id\_Role) | **0..\*.**  **element >**  **{Element.Name}**  **< element**  Id\_Role  **1**  **element >**  **{Element.Name}**  **< element**  Id\_Role |  |

|  |  |  |
| --- | --- | --- |
| (Id\_role = Id\_Role) | **0..\*.**  **element >**  **{Element.Name}**  **< element**  Id\_Role  **1**  **element >**  **{Element.Name}**  **< element**  Id\_Role |  |

**Tabel User**

**Table**

**Columns**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PK** | **Name** | **Type** | **Not Null** | **Unique** | **Len** | **Prec** | **Scale** | **Notes** |
| True | id user | integer | True | False |  |  |  |  |
| False | Id\_Book | integer | False | False |  |  |  |  |
| False | username | varchar | False | False | 50 |  |  |  |
| False | password | integer | False | False |  |  |  |  |
| False | Id\_Role | integer | False | False |  |  |  |  |
| False | User\_Desc | varchar | False | False | 50 |  |  |  |
| False | Status | varchar | False | False | 50 |  |  |  |
| False | Created\_By | varchar | False | False | 50 |  |  |  |
| False | Created\_Date | integer | False | False |  |  |  |  |
| False | Modified\_By | varchar | False | False | 50 |  |  |  |
| False | Modified\_Date | integer | False | False |  |  |  |  |
| False | Id\_Layanan | integer | False | False |  |  |  |  |

**Constraints**

| **Name** | **Type** | **Columns** | **Initial Code** | **Notes** |
| --- | --- | --- | --- | --- |
| Id\_Role | «FK» | Id\_Role |  |  |
| Id\_User | «PK» | id user |  |  |

**Relationship**

| **Columns** | **Association** | **Notes** |
| --- | --- | --- |
| (Id\_Role = Id\_Role) | **0..\*.**  **element >**  **{Element.Name}**  **< element**  Id\_Role  **1**  **element >**  **{Element.Name}**  **< element**  Id\_Role |  |

|  |  |  |
| --- | --- | --- |
|  | **0..\*.**  **element >**  **{Element.Name}**  **< element**  Id\_User  **1**  **element >**  **{Element.Name}**  **< element**  Id\_User |  |

|  |  |  |
| --- | --- | --- |
|  | **0..\*.**  **element >**  **{Element.Name}**  **< elemen****t**  Id\_User  **1**  **element >**  **{Element.Name}**  **< elemen****t**  Id\_User |  |

**Data Flow Diagram – Data Flow Diagram**



Figure 5 - Data Flow Diagram LVL 0



Figure 6 - Data Flow Diagram LVL 1 Proses 1



Figure 7 - Data Flow Diagram LVL 1 Proses 2



Figure 8 - Data Flow Diagram LVL 1 Proses 3



Figure 9 - Data Flow Diagram LVL 1 Proses 4



Figure 10 - Data Flow Diagram LVL 1 Proses 5

**Sequence Diagram - Sequence Diagram**

**Sequence Diagram - Admin - (Interaction diagram)**



Figure: 11 - Sequence Diagram - Admin

**Messages**

|  |  |
| --- | --- |
| **Message/Signature** | **Description** |
| **1.0 - Input Book Data**  P*arams:*  Conditions: |  |
| **1.1 - InputDataValidation**  P*arams:*  Conditions: |  |
| **1.2 - Input Book Data**  P*arams:*  Conditions: |  |
| **1.3 - InputDataValidation**  P*arams:*  Conditions: |  |
| **1.4 - inputBookData**  P*arams:*  Conditions: |  |
| **2.0 - Search Book Data**  P*arams:*  Conditions: |  |
| **2.1 - Search Book Data**  P*arams:*  Conditions: |  |
| **2.2 - Input Parameter Validation**  P*arams:*  Conditions: |  |
| **2.3 - get Book Data**  P*arams:*  Conditions: |  |
| **2.4 - SingleofBook**  P*arams:*  Conditions: |  |
| **2.5 - SingleofBook**  P*arams:*  Conditions: |  |
| **2.6 - SingleofBook**  P*arams:*  Conditions: |  |
| **2.7 - SingleofBook**  P*arams:*  Conditions: |  |
| **3.0 - Select Book Data**  P*arams:*  Conditions: |  |
| **3.1 - SelectBookData**  P*arams:*  Conditions: |  |
| **3.2 - getBookData**  P*arams:*  Conditions: |  |
| **3.3 - SelectedBookData()**  P*arams:*  Conditions: |  |
| **3.4 - SelectedBookData**  P*arams:*  Conditions: |  |
| **3.5 - SelectedBookData**  P*arams:*  Conditions: |  |
| **3.6 - Update Book Data**  P*arams:*  Conditions: |  |
| **3.7 - InputDataValidation**  P*arams:*  Conditions: |  |
| **3.8 - Update Book Data**  P*arams:*  Conditions: |  |
| **3.9 - UpdateDataValidation**  P*arams:*  Conditions: |  |
| **3.10 - Update Book Data**  P*arams:*  Conditions: |  |
| **4.0 - SearchBookData**  P*arams:*  Conditions: |  |
| **4.1 - SearchBookData**  P*arams:*  Conditions: |  |
| **4.2 - ParameterInputValidation**  P*arams:*  Conditions: |  |
| **4.3 - getBookData**  P*arams:*  Conditions: |  |
| **4.4 - SingleofBookData**  P*arams:*  Conditions: |  |
| **4.5 - SingleofBookData**  P*arams:*  Conditions: |  |
| **4.6 - ShowSingleofBookData**  P*arams:*  Conditions: |  |
| **4.7 - ShowSingleofBookData**  P*arams:*  Conditions: |  |
| **4.8 - DeleteBookData**  P*arams:*  Conditions: |  |
| **4.9 - DeleteBookData**  P*arams:*  Conditions: |  |
| **4.10 - DeleteBookData**  P*arams:*  Conditions: |  |

**Sequence Diagram - End to End (Book) - (Interaction diagram)**



Figure: 12 - Sequence Diagram - End to End (Book)

**Messages**

|  |  |
| --- | --- |
| **Message/Signature** | **Description** |
| **1.0 - CheckBookData**  P*arams:*  Conditions: |  |
| **1.1 - Check Book Data**  P*arams:*  Conditions: |  |
| **1.2 - validateParameter**  P*arams:*  Conditions: |  |
| **1.3 - getBookData**  P*arams:*  Conditions: |  |
| **1.4 - true/false**  P*arams:*  Conditions: |  |
| **1.5 - true/false**  P*arams:*  Conditions: |  |
| **1.6 - true/false**  P*arams:*  Conditions: |  |
| **1.7 - true/false**  P*arams:*  Conditions: |  |
| **1.8 - InputLayananData**  P*arams:*  Conditions: |  |
| **1.9 - ValidateDataInput**  P*arams:*  Conditions: |  |
| **1.10 - InputLayananData**  P*arams:*  Conditions: |  |
| **1.11 - ValidateDataInput**  P*arams:*  Conditions: |  |
| **1.12 - InputLayananData**  P*arams:*  Conditions: |  |
| **1.13 - CheckBookData**  P*arams:*  Conditions: |  |
| **1.14 - CheckBookData**  P*arams:*  Conditions: |  |
| **1.15 - ValidateParameter**  P*arams:*  Conditions: |  |
| **1.16 - getBookData**  P*arams:*  Conditions: |  |
| **1.17 - true/false**  P*arams:*  Conditions: |  |
| **1.18 - true/false**  P*arams:*  Conditions: |  |
| **1.19 - true/false**  P*arams:*  Conditions: |  |
| **1.20 - true/false**  P*arams:*  Conditions: |  |
| **1.21 - InputLayananData**  P*arams:*  Conditions: |  |
| **1.22 - ValidateDataInput**  P*arams:*  Conditions: |  |
| **1.23 - InputLayananData**  P*arams:*  Conditions: |  |
| **1.24 - ValidateDataInput**  P*arams:*  Conditions: |  |
| **1.25 - InputLayananData**  P*arams:*  Conditions: |  |
| **2.0 - SearchLayananData**  P*arams:*  Conditions: |  |
| **2.1 - SearchLayananData**  P*arams:*  Conditions: |  |
| **2.2 - InputParameterValidation**  P*arams:*  Conditions: |  |
| **2.3 - getLayananData**  P*arams:*  Conditions: |  |
| **2.4 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **2.5 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **2.6 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **2.7 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **3.0 - SearchLayananData**  P*arams:*  Conditions: |  |
| **3.1 - SearchLayananData**  P*arams:*  Conditions: |  |
| **3.2 - ValidateParameter**  P*arams:*  Conditions: |  |
| **3.3 - getDataLayanan**  P*arams:*  Conditions: |  |
| **3.4 - SingleofLayanan**  P*arams:*  Conditions: |  |
| **3.5 - SingleofLayanan**  P*arams:*  Conditions: |  |
| **3.6 - SingleofLayanan**  P*arams:*  Conditions: |  |
| **3.7 - SingleofLayanan**  P*arams:*  Conditions: |  |
| **4.0 - SearchLayananData**  P*arams:*  Conditions: |  |
| **4.1 - SearchLayananData**  P*arams:*  Conditions: |  |
| **4.2 - ValidateParameter**  P*arams:*  Conditions: |  |
| **4.3 - getLayananData**  P*arams:*  Conditions: |  |
| **4.4 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **4.5 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **4.6 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **4.7 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **4.8 - SelectLayananData**  P*arams:*  Conditions: |  |
| **4.9 - SelectLayananData**  P*arams:*  Conditions: |  |
| **4.10 - getLayananData**  P*arams:*  Conditions: |  |
| **4.11 - SelectedLayananData**  P*arams:*  Conditions: |  |
| **4.12 - SelectedLayananData**  P*arams:*  Conditions: |  |
| **4.13 - SelectedLayananData**  P*arams:*  Conditions: |  |
| **4.14 - UpdateLayananData**  P*arams:*  Conditions: |  |
| **4.15 - ValidateDataInput**  P*arams:*  Conditions: |  |
| **4.16 - UpdateLayananData**  P*arams:*  Conditions: |  |
| **4.17 - ValidateDataInput**  P*arams:*  Conditions: |  |
| **4.18 - UpdateDataLayanan**  P*arams:*  Conditions: |  |
| **5.0 - SearchLayananData**  P*arams:*  Conditions: |  |
| **5.1 - SearchLayananData**  P*arams:*  Conditions: |  |
| **5.2 - ValidateParameter**  P*arams:*  Conditions: |  |
| **5.3 - getLayananData**  P*arams:*  Conditions: |  |
| **5.4 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **5.5 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **5.6 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **5.7 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **5.8 - SelectLayananData**  P*arams:*  Conditions: |  |
| **5.9 - SelectLayananData**  P*arams:*  Conditions: |  |
| **5.10 - getLayananData**  P*arams:*  Conditions: |  |
| **5.11 - SelectedLayananData**  P*arams:*  Conditions: |  |
| **5.12 - SelectedLayananData**  P*arams:*  Conditions: |  |
| **5.13 - SelectedLayananData**  P*arams:*  Conditions: |  |
| **5.14 - UpdateLayananData**  P*arams:*  Conditions: |  |
| **5.15 - ValidateDataInput**  P*arams:*  Conditions: |  |
| **5.16 - UpdateLayananData**  P*arams:*  Conditions: |  |
| **5.17 - ValidateDataInput**  P*arams:*  Conditions: |  |
| **5.18 - UpdateLayananData**  P*arams:*  Conditions: |  |
| **6.0 - SearchLayananData**  P*arams:*  Conditions: |  |
| **6.1 - SearchLayananData**  P*arams:*  Conditions: |  |
| **6.2 - ParameterInputValidation**  P*arams:*  Conditions: |  |
| **6.3 - getLayananData**  P*arams:*  Conditions: |  |
| **6.4 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **6.5 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **6.6 - ShowSingleofLayananData**  P*arams:*  Conditions: |  |
| **6.7 - ShowSingleofLayananData**  P*arams:*  Conditions: |  |
| **6.8 - DeleteLayananData**  P*arams:*  Conditions: |  |
| **6.9 - DeleteLayananData**  P*arams:*  Conditions: |  |
| **6.10 - DeleteLayananData**  P*arams:*  Conditions: |  |
| **6.11 - SearchLayananData**  P*arams:*  Conditions: |  |
| **6.12 - SearchLayananData**  P*arams:*  Conditions: |  |
| **6.13 - ValidateParamter**  P*arams:*  Conditions: |  |
| **6.14 - getLayananData**  P*arams:*  Conditions: |  |
| **6.15 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **6.16 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **6.17 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **6.18 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **6.19 - DeleteLayananData**  P*arams:*  Conditions: |  |
| **6.20 - DeleteLayananData**  P*arams:*  Conditions: |  |
| **6.21 - DeleteLayananData**  P*arams:*  Conditions: |  |

**Sequence Diagram - End to End (Layanan) - (Interaction diagram)**



Figure: 13 - Sequence Diagram - End to End (Layanan)

**Messages**

|  |  |
| --- | --- |
| **Message/Signature** | **Description** |
| **1.0 - CheckBookData**  P*arams:*  Conditions: |  |
| **1.1 - Check Book Data**  P*arams:*  Conditions: |  |
| **1.2 - validateParameter**  P*arams:*  Conditions: |  |
| **1.3 - getBookData**  P*arams:*  Conditions: |  |
| **1.4 - true/false**  P*arams:*  Conditions: |  |
| **1.5 - true/false**  P*arams:*  Conditions: |  |
| **1.6 - true/false**  P*arams:*  Conditions: |  |
| **1.7 - true/false**  P*arams:*  Conditions: |  |
| **1.8 - InputLayananData**  P*arams:*  Conditions: |  |
| **1.9 - ValidateDataInput**  P*arams:*  Conditions: |  |
| **1.10 - InputLayananData**  P*arams:*  Conditions: |  |
| **1.11 - ValidateDataInput**  P*arams:*  Conditions: |  |
| **1.12 - InputLayananData**  P*arams:*  Conditions: |  |
| **1.13 - CheckBookData**  P*arams:*  Conditions: |  |
| **1.14 - CheckBookData**  P*arams:*  Conditions: |  |
| **1.15 - ValidateParameter**  P*arams:*  Conditions: |  |
| **1.16 - getBookData**  P*arams:*  Conditions: |  |
| **1.17 - true/false**  P*arams:*  Conditions: |  |
| **1.18 - true/false**  P*arams:*  Conditions: |  |
| **1.19 - true/false**  P*arams:*  Conditions: |  |
| **1.20 - true/false**  P*arams:*  Conditions: |  |
| **1.21 - InputLayananData**  P*arams:*  Conditions: |  |
| **1.22 - ValidateDataInput**  P*arams:*  Conditions: |  |
| **1.23 - InputLayananData**  P*arams:*  Conditions: |  |
| **1.24 - ValidateDataInput**  P*arams:*  Conditions: |  |
| **1.25 - InputLayananData**  P*arams:*  Conditions: |  |
| **2.0 - SearchLayananData**  P*arams:*  Conditions: |  |
| **2.1 - SearchLayananData**  P*arams:*  Conditions: |  |
| **2.2 - InputParameterValidation**  P*arams:*  Conditions: |  |
| **2.3 - getLayananData**  P*arams:*  Conditions: |  |
| **2.4 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **2.5 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **2.6 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **2.7 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **3.0 - SearchLayananData**  P*arams:*  Conditions: |  |
| **3.1 - SearchLayananData**  P*arams:*  Conditions: |  |
| **3.2 - ValidateParameter**  P*arams:*  Conditions: |  |
| **3.3 - getDataLayanan**  P*arams:*  Conditions: |  |
| **3.4 - SingleofLayanan**  P*arams:*  Conditions: |  |
| **3.5 - SingleofLayanan**  P*arams:*  Conditions: |  |
| **3.6 - SingleofLayanan**  P*arams:*  Conditions: |  |
| **3.7 - SingleofLayanan**  P*arams:*  Conditions: |  |
| **4.0 - SearchLayananData**  P*arams:*  Conditions: |  |
| **4.1 - SearchLayananData**  P*arams:*  Conditions: |  |
| **4.2 - ValidateParameter**  P*arams:*  Conditions: |  |
| **4.3 - getLayananData**  P*arams:*  Conditions: |  |
| **4.4 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **4.5 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **4.6 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **4.7 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **4.8 - SelectLayananData**  P*arams:*  Conditions: |  |
| **4.9 - SelectLayananData**  P*arams:*  Conditions: |  |
| **4.10 - getLayananData**  P*arams:*  Conditions: |  |
| **4.11 - SelectedLayananData**  P*arams:*  Conditions: |  |
| **4.12 - SelectedLayananData**  P*arams:*  Conditions: |  |
| **4.13 - SelectedLayananData**  P*arams:*  Conditions: |  |
| **4.14 - UpdateLayananData**  P*arams:*  Conditions: |  |
| **4.15 - ValidateDataInput**  P*arams:*  Conditions: |  |
| **4.16 - UpdateLayananData**  P*arams:*  Conditions: |  |
| **4.17 - ValidateDataInput**  P*arams:*  Conditions: |  |
| **4.18 - UpdateDataLayanan**  P*arams:*  Conditions: |  |
| **5.0 - SearchLayananData**  P*arams:*  Conditions: |  |
| **5.1 - SearchLayananData**  P*arams:*  Conditions: |  |
| **5.2 - ValidateParameter**  P*arams:*  Conditions: |  |
| **5.3 - getLayananData**  P*arams:*  Conditions: |  |
| **5.4 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **5.5 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **5.6 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **5.7 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **5.8 - SelectLayananData**  P*arams:*  Conditions: |  |
| **5.9 - SelectLayananData**  P*arams:*  Conditions: |  |
| **5.10 - getLayananData**  P*arams:*  Conditions: |  |
| **5.11 - SelectedLayananData**  P*arams:*  Conditions: |  |
| **5.12 - SelectedLayananData**  P*arams:*  Conditions: |  |
| **5.13 - SelectedLayananData**  P*arams:*  Conditions: |  |
| **5.14 - UpdateLayananData**  P*arams:*  Conditions: |  |
| **5.15 - ValidateDataInput**  P*arams:*  Conditions: |  |
| **5.16 - UpdateLayananData**  P*arams:*  Conditions: |  |
| **5.17 - ValidateDataInput**  P*arams:*  Conditions: |  |
| **5.18 - UpdateLayananData**  P*arams:*  Conditions: |  |
| **6.0 - SearchLayananData**  P*arams:*  Conditions: |  |
| **6.1 - SearchLayananData**  P*arams:*  Conditions: |  |
| **6.2 - ParameterInputValidation**  P*arams:*  Conditions: |  |
| **6.3 - getLayananData**  P*arams:*  Conditions: |  |
| **6.4 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **6.5 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **6.6 - ShowSingleofLayananData**  P*arams:*  Conditions: |  |
| **6.7 - ShowSingleofLayananData**  P*arams:*  Conditions: |  |
| **6.8 - DeleteLayananData**  P*arams:*  Conditions: |  |
| **6.9 - DeleteLayananData**  P*arams:*  Conditions: |  |
| **6.10 - DeleteLayananData**  P*arams:*  Conditions: |  |
| **6.11 - SearchLayananData**  P*arams:*  Conditions: |  |
| **6.12 - SearchLayananData**  P*arams:*  Conditions: |  |
| **6.13 - ValidateParamter**  P*arams:*  Conditions: |  |
| **6.14 - getLayananData**  P*arams:*  Conditions: |  |
| **6.15 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **6.16 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **6.17 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **6.18 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **6.19 - DeleteLayananData**  P*arams:*  Conditions: |  |
| **6.20 - DeleteLayananData**  P*arams:*  Conditions: |  |
| **6.21 - DeleteLayananData**  P*arams:*  Conditions: |  |

**Sequence Diagram - Shop Keeper - (Interaction diagram)**



Figure: 14 - Sequence Diagram - Shop Keeper

**Messages**

|  |  |
| --- | --- |
| **Message/Signature** | **Description** |
| **1.0 - Check Book Data**  P*arams:*  Conditions: |  |
| **1.1 - Check Book Data**  P*arams:*  Conditions: |  |
| **1.2 - validate Parameter**  P*arams:*  Conditions: |  |
| **1.3 - getDataProduk**  P*arams:*  Conditions: |  |
| **1.4 - true/false**  P*arams:*  Conditions: |  |
| **1.5 - true/false**  P*arams:*  Conditions: |  |
| **1.6 - true/false**  P*arams:*  Conditions: |  |
| **1.7 - true/false**  P*arams:*  Conditions: |  |
| **1.8 - InputLayananData**  P*arams:*  Conditions: |  |
| **1.9 - DataInputValidation**  P*arams:*  Conditions: |  |
| **1.10 - InputLayananData**  P*arams:*  Conditions: |  |
| **1.11 - DataInputValidation**  P*arams:*  Conditions: |  |
| **1.12 - InputLayananData**  P*arams:*  Conditions: |  |
| **2.0 - SearchLayananData**  P*arams:*  Conditions: |  |
| **2.1 - SearchLayananData**  P*arams:*  Conditions: |  |
| **2.2 - InputParameterValidation**  P*arams:*  Conditions: |  |
| **2.3 - getLayananData**  P*arams:*  Conditions: |  |
| **2.4 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **2.5 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **2.6 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **2.7 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **3.0 - SelectLayananData**  P*arams:*  Conditions: |  |
| **3.1 - SelectLayananData**  P*arams:*  Conditions: |  |
| **3.2 - getLayananData**  P*arams:*  Conditions: |  |
| **3.3 - SelectedLayananData**  P*arams:*  Conditions: |  |
| **3.4 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **3.5 - ShowSelectedLayananData**  P*arams:*  Conditions: |  |
| **3.6 - UpdateLayananData**  P*arams:*  Conditions: |  |
| **3.7 - DataInputValidation**  P*arams:*  Conditions: |  |
| **3.8 - UpdateLayananData**  P*arams:*  Conditions: |  |
| **3.9 - DataInputValidation**  P*arams:*  Conditions: |  |
| **3.10 - UpdateDataValidation**  P*arams:*  Conditions: |  |
| **4.0 - SearchLayananData**  P*arams:*  Conditions: |  |
| **4.1 - SearchLayananData**  P*arams:*  Conditions: |  |
| **4.2 - ParameterInputValidation**  P*arams:*  Conditions: |  |
| **4.3 - getLayananData**  P*arams:*  Conditions: |  |
| **4.4 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **4.5 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **4.6 - ShowSingleofLayananData**  P*arams:*  Conditions: |  |
| **4.7 - ShowSingleofLayananData**  P*arams:*  Conditions: |  |
| **4.8 - DeleteLayananData**  P*arams:*  Conditions: |  |
| **4.9 - DeleteLayananData**  P*arams:*  Conditions: |  |
| **4.10 - DeleteLayananData**  P*arams:*  Conditions: |  |

**Sequence Diagram - Super Admin Book - (Interaction diagram)**



Figure: 15 - Sequence Diagram - Super Admin Book

**Messages**

|  |  |
| --- | --- |
| **Message/Signature** | **Description** |
| **1.0 - Input Book Data**  P*arams:*  Conditions: |  |
| **1.1 - InputDataValidation**  P*arams:*  Conditions: |  |
| **1.2 - Input Book Data**  P*arams:*  Conditions: |  |
| **1.3 - InputDataValidation**  P*arams:*  Conditions: |  |
| **1.4 - inputBookData**  P*arams:*  Conditions: |  |
| **2.0 - Search Book Data**  P*arams:*  Conditions: |  |
| **2.1 - Search Book Data**  P*arams:*  Conditions: |  |
| **2.2 - Input Parameter Validation**  P*arams:*  Conditions: |  |
| **2.3 - get Book Data**  P*arams:*  Conditions: |  |
| **2.4 - SingleofBook**  P*arams:*  Conditions: |  |
| **2.5 - SingleofBook**  P*arams:*  Conditions: |  |
| **2.6 - SingleofBook**  P*arams:*  Conditions: |  |
| **2.7 - SingleofBook**  P*arams:*  Conditions: |  |
| **3.0 - Select Book Data**  P*arams:*  Conditions: |  |
| **3.1 - SelectBookData**  P*arams:*  Conditions: |  |
| **3.2 - getBookData**  P*arams:*  Conditions: |  |
| **3.3 - SelectedBookData()**  P*arams:*  Conditions: |  |
| **3.4 - SelectedBookData**  P*arams:*  Conditions: |  |
| **3.5 - SelectedBookData**  P*arams:*  Conditions: |  |
| **3.6 - Update Book Data**  P*arams:*  Conditions: |  |
| **3.7 - InputDataValidation**  P*arams:*  Conditions: |  |
| **3.8 - Update Book Data**  P*arams:*  Conditions: |  |
| **3.9 - UpdateDataValidation**  P*arams:*  Conditions: |  |
| **3.10 - Update Book Data**  P*arams:*  Conditions: |  |
| **4.0 - SearchBookData**  P*arams:*  Conditions: |  |
| **4.1 - SearchBookData**  P*arams:*  Conditions: |  |
| **4.2 - ParameterInputValidation**  P*arams:*  Conditions: |  |
| **4.3 - getBookData**  P*arams:*  Conditions: |  |
| **4.4 - SingleofBookData**  P*arams:*  Conditions: |  |
| **4.5 - SingleofBookData**  P*arams:*  Conditions: |  |
| **4.6 - ShowSingleofBookData**  P*arams:*  Conditions: |  |
| **4.7 - ShowSingleofBookData**  P*arams:*  Conditions: |  |
| **4.8 - DeleteBookData**  P*arams:*  Conditions: |  |
| **4.9 - DeleteBookData**  P*arams:*  Conditions: |  |
| **4.10 - DeleteBookData**  P*arams:*  Conditions: |  |

**Sequence Diagram - Super Admin Layanan - (Interaction diagram)**



Figure: 16 - Sequence Diagram - Super Admin Layanan

**Messages**

|  |  |
| --- | --- |
| **Message/Signature** | **Description** |
| **2.0 - Check Book Data**  P*arams:*  Conditions: |  |
| **2.1 - Check Book Data**  P*arams:*  Conditions: |  |
| **2.2 - DataInputValidation**  P*arams:*  Conditions: |  |
| **2.3 - InputLayananData**  P*arams:*  Conditions: |  |
| **2.4 - validate Parameter**  P*arams:*  Conditions: |  |
| **2.5 - InputParameterValidation**  P*arams:*  Conditions: |  |
| **2.6 - true/false**  P*arams:*  Conditions: |  |
| **2.7 - true/false**  P*arams:*  Conditions: |  |
| **2.8 - InputLayananData**  P*arams:*  Conditions: |  |
| **2.9 - DataInputValidation**  P*arams:*  Conditions: |  |
| **2.10 - InputLayananData**  P*arams:*  Conditions: |  |
| **2.11 - getDataProduk**  P*arams:*  Conditions: |  |
| **2.12 - true/false**  P*arams:*  Conditions: |  |
| **3.0 - SearchLayananData**  P*arams:*  Conditions: |  |
| **3.1 - SearchLayananData**  P*arams:*  Conditions: |  |
| **3.2 - getLayananData**  P*arams:*  Conditions: |  |
| **3.3 - true/false**  P*arams:*  Conditions: |  |
| **3.4 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **3.5 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **3.6 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **3.7 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **4.0 - SelectLayananData**  P*arams:*  Conditions: |  |
| **4.1 - SelectLayananData**  P*arams:*  Conditions: |  |
| **4.2 - getLayananData**  P*arams:*  Conditions: |  |
| **4.3 - SelectedLayananData**  P*arams:*  Conditions: |  |
| **4.4 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **4.5 - ShowSelectedLayananData**  P*arams:*  Conditions: |  |
| **4.6 - UpdateLayananData**  P*arams:*  Conditions: |  |
| **4.7 - DataInputValidation**  P*arams:*  Conditions: |  |
| **4.8 - UpdateLayananData**  P*arams:*  Conditions: |  |
| **4.9 - DataInputValidation**  P*arams:*  Conditions: |  |
| **4.10 - UpdateDataValidation**  P*arams:*  Conditions: |  |
| **5.0 - SearchLayananData**  P*arams:*  Conditions: |  |
| **5.1 - SearchLayananData**  P*arams:*  Conditions: |  |
| **5.2 - ParameterInputValidation**  P*arams:*  Conditions: |  |
| **5.3 - getLayananData**  P*arams:*  Conditions: |  |
| **5.4 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **5.5 - SingleofLayananData**  P*arams:*  Conditions: |  |
| **5.6 - ShowSingleofLayananData**  P*arams:*  Conditions: |  |
| **5.7 - ShowSingleofLayananData**  P*arams:*  Conditions: |  |
| **5.8 - DeleteLayananData**  P*arams:*  Conditions: |  |
| **5.9 - DeleteLayananData**  P*arams:*  Conditions: |  |
| **5.10 - DeleteLayananData**  P*arams:*  Conditions: |  |

**user interface ( Layout ) - User Interface**

**From Role - User Interface**



Figure 17 - From Role

<>

ID ROLE

NAMA ROLE

DESKRIPSI

PRIVILAGE

<>

ID ROLE NAMA ROLE DESKRIPSI PRIVILAGE STATUS

**LAYANAN KASIR - User Interface**



Figure 18 - LAYANAN KASIR



Figure 19 - LAYANAN PENCARIAN

<>

**BookType**

<>

**Nama Buku**

<>

**BookID** ***BookName*** **BookType** **Penulis** **Penerbit** **Harga** **Status**

<>

**Book ID**

<>

**Pencarian**

<>

<>

<>

<>

BOOK

EDIT

LAYANAN

LAYANAN TRANSAKSI

PRIVILAGE

ROLE MANAGE

UI Control

UI Control

USER

<>

GE THE BOOK

<>

USER



Figure 20 - LAYANAN TRANSAKSI

<>

**Disc**

<>

Netto

<>

**Harga**

<>

**Nama Pelanggan**

<>

**Total**

<>

**SubTotal**

<>

**Total**

<>

**Satuan**

<>

**Nama Buku**

<>

**Kode/Barcode**

<>

**Kembali**

<>

**BookID**

<>

**Jumlah**

<>

**Tanggal**

<>

**GrandTotal**

<>

**NamaBuku**

<>

**Tunai/Kredit**

<>

**Diskon**

<>

**HargaBersih**

<>

**Jumlah**

<>

**Diskon**

<>

**Satuan**

<>

**Tunai**

<>

**Harga**

<>

<>

<>

<>

BOOK

LAYANAN

PRIVILAGE

ROLE MANAGE

UI Control

UI Control

USER

<>

GE THE BOOK

<>

USER

**LOGIN - User Interface**



Figure 21 - user interface ( Layout )

<>

**USER :**

<>

**LOGIN**

<>

**PASS :**

**MENU UTAMA - User Interface**



Figure 22 - FORM CREATE BOOK

<>

GE THE BOOK

<>

USER

<>

**BookID**

**BookName**

**BookType**



Figure 23 - MENU SETUP BUKU

<>

GE THE BOOK

<>

**BookID BookName BookType AuthorName TotalPage Publisher BookPrice CreateBY CreateDate ModifiedBY ModifiedDate**

<>

USER

<>

**BookID**

**BookName**

**BookType**

**USER - User Interface**



Figure 24 - USER

<>

**PASSWORD**

<>

**ID**

<>

**ROLE**

<>

**DATA USER**

<>

**NAMA USER**

<>

**ID NAMA USER PASSWORD ROLE**