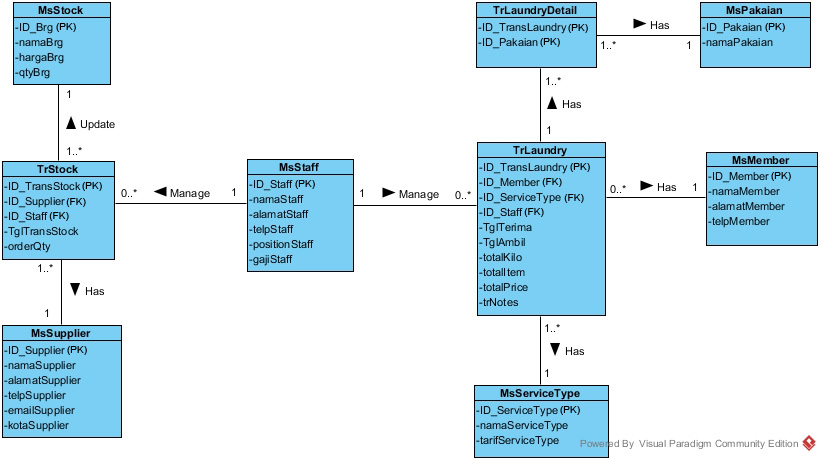
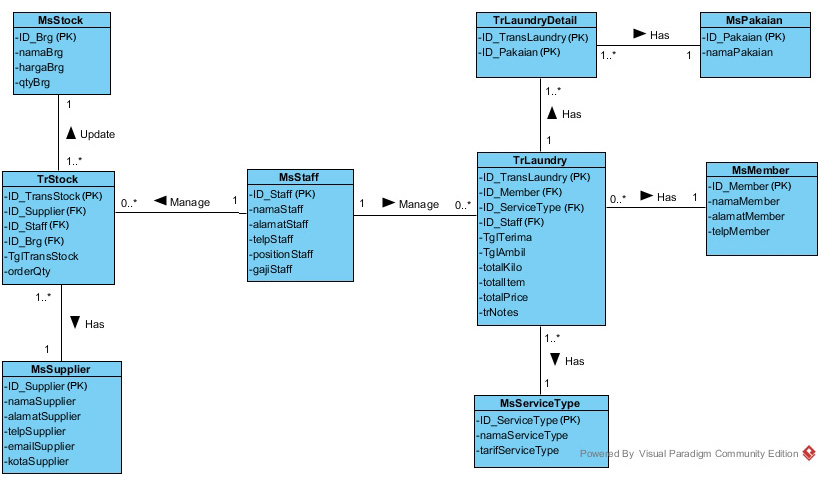
Chapter 5

Database Design

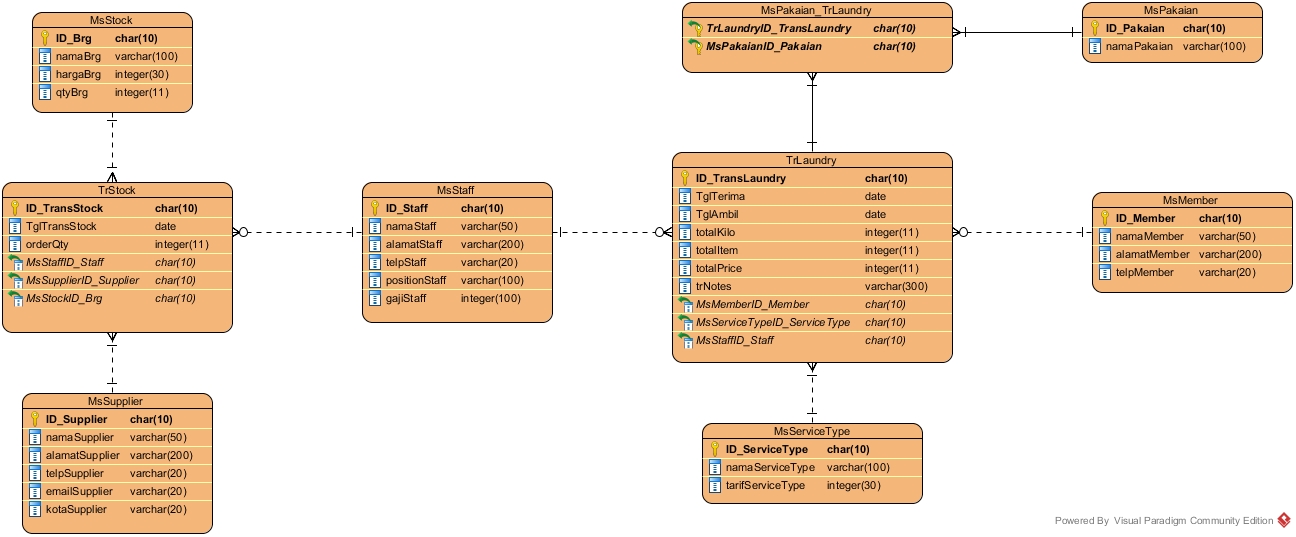
1. **Conceptual Database Design**



1. **Logical ER Modeling**



1. **Physical Database Design**

****

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Transaction/ Relation | View Transaction | | | | Manage Member | | | | Manage Staff | | | | Manage Supplier | | | |
| I | R | U | D | I | R | U | D | I | R | U | D | I | R | U | D |
| TrLaundry |  | ● |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MsMember |  |  |  |  |  | ● | ● | ● |  |  |  |  |  |  |  |  |
| MsServiceType |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| TrLaundryDetail |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MsPakaian |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MsStaff |  |  |  |  |  |  |  |  | ● | ● | ● | ● | ● | ● | ● | ● |
| TrStock |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MsSupplier |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MsStock |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Transaction/ Relation | Data Stock | | | | Register Member | | | | Order Laundry | | | | Update Stock | | | |
| I | R | U | D | I | R | U | D | I | R | U | D | I | R | U | D |
| TrLaundry |  |  |  |  |  |  |  |  | ● |  |  |  |  |  |  |  |
| MsMember |  |  |  |  | ● |  |  |  |  | ● |  |  |  |  |  |  |
| MsServiceType |  |  |  |  |  |  |  |  |  | ● |  |  |  |  |  |  |
| TrLaundryDetail |  |  |  |  |  |  |  |  | ● |  |  |  |  |  |  |  |
| MsPakaian |  |  |  |  |  |  |  |  |  | ● |  |  |  |  |  |  |
| MsStaff |  |  |  |  |  |  |  |  |  | ● |  |  |  |  |  |  |
| TrStock |  |  |  |  |  |  |  |  |  |  |  |  | ● | ● | ● | ● |
| MsSupplier |  | ● |  |  |  |  |  |  |  |  |  |  |  | ● |  |  |
| MsStock |  | ● | ● |  |  |  |  |  |  |  |  |  |  |  |  |  |

1. **Cross-Referencing Transactions and Relations**
2. **Cross Referencing of Role**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Transaction/ Relation | Member | | | | Staff | | | | Owner | | | |
| I | R | U | D | I | R | U | D | I | R | U | D |
| TrLaundry | ● | ● |  |  | ● | ● | ● | ● | ● | ● | ● | ● |
| MsMember | ● | ● |  |  | ● | ● | ● | ● | ● | ● | ● | ● |
| MsServiceType |  | ● |  |  | ● | ● | ● | ● | ● | ● | ● | ● |
| TrLaundryDetail |  | ● |  |  | ● | ● | ● | ● | ● | ● | ● | ● |
| MsPakaian |  | ● |  |  | ● | ● | ● | ● | ● | ● | ● | ● |
| MsStaff |  | ● |  |  | ● | ● | ● | ● | ● | ● | ● | ● |
| TrStock |  |  |  |  | ● | ● | ● | ● | ● | ● | ● | ● |
| MsSupplier |  |  |  |  | ● | ● | ● | ● | ● | ● | ● | ● |
| MsStock |  |  |  |  | ● | ● | ● | ● | ● | ● | ● | ● |

1. **Normalization**

From Laundry Service Receipts

|  |  |
| --- | --- |
| UNF |  |
| TrLaundry | (**ID\_TransLaundy**, namaStaff, TglTerima, TglAmbil, namaMember, alamatMember, telpMember, namaServiceType, tarifServiceType, {namaPakaian}, totalItem, totalKilo, totalPrice, trNotes) |
|  |  |
| 1NF |  |
| TrLaundry | (**ID\_TransLaundy**, namaStaff, TglTerima, TglAmbil, namaMember, alamatMember, telpMember, namaServiceType, tarifServiceType, totalItem, totalKilo, totalPrice, trNotes) |
| TrLaundryDetail | (**ID\_TransLaundry**, **ID\_Pakaian**, namaPakaian) |
|  |  |
| 2NF |  |
| TrLaundry | (**ID\_TransLaundy**, namaStaff, TglTerima, TglAmbil, namaMember, alamatMember, telpMember, namaServiceType, tarifServiceType, totalItem, totalKilo, totalPrice, trNotes) |
| TrLaundryDetail | (**ID\_TransLaundry**, **ID\_Pakaian**) |
| MsPakaian | (**ID\_Pakaian**, namaPakaian) |
|  |  |
| 3NF |  |
| TrLaundry | (**ID\_TransLaundy**, ID\_Staff, ID\_Member, ID\_ServiceType, TglTerima, TglAmbil, totalItem, totalKilo, totalPrice, trNotes) |
| TrLaundryDetail | (**ID\_TransLaundry**, **ID\_Pakaian**) |
| MsPakaian | (**ID\_Pakaian**, namaPakaian) |
| MsMember | (**ID\_Member**, namaMember, alamatMember, telpMember) |
| MsStaff | (**ID\_Staff**, namaStaff, alamatStaff, telpStaff, positionStaff, gajiStaff) |
| MsServiceType | (**ID\_ServiceType**, namaServiceType, tarifServiceType) |

From Stock Purchase Orders

|  |  |
| --- | --- |
| UNF |  |
| TrStock | (**ID\_TransStock**, TglTransStock, namaSupplier, namaStaff, namaBrg, totalHarga, orderQty) |
|  |  |
| 1NF |  |
| TrStock | (**ID\_TransStock**, TglTransStock, namaSupplier, namaStaff, namaBrg, orderQty) |
|  |  |
| 2NF |  |
| TrStock | (**ID\_TransStock**, TglTransStock, namaSupplier, namaStaff, namaBrg, orderQty) |
|  |  |
| 3NF |  |
| TrStock | (**ID\_TransStock**, ID\_Supplier, ID\_Staff, ID\_Brg, TglTransStock, orderQty) |
| MsStaff | (**ID\_Staff**, namaStaff, alamatStaff, telpStaff, positionStaff, gajiStaff) |
| MsBarang | (**ID\_Brg**, namaBrg, hargaBrg, qtyBrg) |
| MsSupplier | (**ID\_Supplier**, namaSupplier, alamatSupplier, telpSupplier, emailSupplier, kotaSupplier) |

3NF from both Laundry Service Receipts and Stock Purchase Orders

|  |  |
| --- | --- |
| 3NF |  |
| TrLaundry | (**ID\_TransLaundy**, ID\_Staff, ID\_Member, ID\_ServiceType, TglTerima, TglAmbil, totalItem, totalKilo, totalPrice, trNotes) |
| TrLaundryDetail | (**ID\_TransLaundry**, **ID\_Pakaian**) |
| MsPakaian | (**ID\_Pakaian**, namaPakaian) |
| MsMember | (**ID\_Member**, namaMember, alamatMember, telpMember) |
| MsStaff | (**ID\_Staff**, namaStaff, alamatStaff, telpStaff, positionStaff, gajiStaff) |
| MsServiceType | (**ID\_ServiceType**, namaServiceType, tarifServiceType) |
| TrStock | (**ID\_TransStock**, ID\_Supplier, ID\_Staff, ID\_Brg, TglTransStock, orderQty) |
| MsBarang | (**ID\_Brg**, namaBrg, hargaBrg, qtyBrg) |
| MsSupplier | (**ID\_Supplier**, namaSupplier, alamatSupplier, telpSupplier, emailSupplier, kotaSupplier) |