ETL Product Documentation

# 1. Customer Registration

Facilitates user registration by collecting necessary details and sending a registration request to the admin for approval. Users receive a confirmation message upon submission.

## 1.1 Screen Launch

The Customer Registration page serves as the initial entry point for new users to provide necessary information to establish their accounts. The page is launched by navigating to the registration link available on the website(Sedin Website). This page ensures a structured and secure collection of customer details.

## 1.2 Process Flow

### 1.2.1 User Input

These are the attributes that the user enters.

| **Attribute** | **Data Type** | **Validation Criteria** | **Processing Logic** |
| --- | --- | --- | --- |
| Username | Alphanumeric | Length: 5–20, Alphanumeric with underscores (\_). Must be unique. | Validate format, Check uniqueness, Insert into database |
| Email | Alphanumeric | Proper email format (e.g., user@example.com). Must be unique. | Validate format. |
| Contact Number | Number | Starts with country code (default: 91). Validate length based on the selected country. | Validate format. Stores input. |
| Password | Alphanumeric | Minimum length: 8. Must include uppercase, lowercase, special character, and digit. | Validate complexity, Hash password before storing |
| Confirm Password | Alphanumeric | Must match the password field. | Compare with Password field during form submission |
| Company Name | String | Free text. | Store input |
| Company Location | String | Two fields: Country (dropdown) and City (text). | Validate dropdown selection, Store input |
| Business Domain | String | Dropdown with predefined options. If "others," accept custom input. | Validate selection, Optional free-text input for "Others" |
| Company Details | String | Free text for additional company details (role, size, etc.). | Store input |

### 1.2.2 User Interaction

* **Field Completion:**
  + As users type into each field, real-time validation ensures input meets the criteria.
  + Errors (e.g., "Invalid email format" or "Password does not meet complexity requirements") are displayed inline near the corresponding field.
  + Successfully validated fields are highlighted (e.g., with a green border or checkmark).
* **Dynamic Button Activation:**
  + Initially, the Submit button is disabled (dimmed).
  + As the user completes all required fields with valid data, the Submit button dynamically becomes enabled.
* **Submission:**
  + The user clicks the Submit button after entering all details.
  + This triggers backend validation and processing to store the data securely and send the request to the admin portal.

### 1.2.3 Action

| **UI** | **Action** | **Description** | **Rule** |
| --- | --- | --- | --- |
| Customer Registration Form | Save | Clicking on the submit button. | On clicking the submit button the request is sent to the inbox of Sedim Admin’s portal. |

### 1.2.4 Response Handling

* Based on the processing outcome:
  + **Success:** Displays a toaster message: *“Request has been successfully sent to the admin. Please check your email for confirmation.”*
  + **Failure:** Displays an error message (e.g., "Invalid data. Please recheck your inputs.").

## 1.2. Buttons and Logic

| **Button Name** | **Processing Logic** | **Role** |
| --- | --- | --- |
| **Submit** | Validates input, sends data to the admin portal’s inbox, and displays a toaster notification based on the response. | **Customer** |

## 1.3. Visual Indicators

To provide feedback during the registration process:

* **Disabled Submit Button**: Initially dimmed until all required fields are completed and validated.
* **Toaster Notification**: Displays success or error messages based on user actions.

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# 2. Sedin Admin Portal’s Inbox

Sedin Admin Portal’s Inbox is to manage the user request and approve, reject happens here. The Sedin Admin Portal’s Inbox serves as the interface for the admin team to manage and process customer registration requests efficiently. It allows structured handling of pending requests, enabling admins to approve or reject them with ease.

## 2.1 Screen Launch

The Sedin Admin Portal’s Inbox is a side icon in the Sedin Admin page. On clicking that this Inbox page launches.

## 2.2 Process Flow

### 2.2.1 User Input

Not applicable for this page.

### 2.2.2 User Interaction

* **Viewing Requests:**
  + The inbox displays a list of pending registration requests, showing the company name for each request.
  + Clicking on a company name opens the detailed registration form, displaying information such as Username, Email, Contact Number, Business Domain, and more.
* **Approving/Rejecting Requests:**
  + In the detailed view, the admin chooses either the Approve or Reject button.
  + Upon approval, the customer account is activated, and the customer receives an email with their login credentials and portal link.
  + Upon rejection, the customer receives a rejection email with an optional reason for rejection.

### 2.2.3 Action

| **UI** | **Action** | **Description** | **Rule** |
| --- | --- | --- | --- |
| Sedin Admin Portal’s Inbox | Accept / Reject | On clicking the Accept/Reject button. | Accepts the user to use the product/ Rejects the user request. |

### 2.2.4 Response Handling:

* **Success:**
  + **For approval:** The customer receives a confirmation email with all relevant details.
  + **For rejection:** The customer receives a rejection email with a customizable reason.
* **Failure:** If the action fails (e.g., server error), the admin is notified with an error message, and the action is retried or deferred.

## 2.2 Buttons and Logic

| **Button Name** | **Processing Logic** | **Role** |
| --- | --- | --- |
| **Approve** | Approves the customer’s request, activates their account, and sends a confirmation email along with a link for login, username and password. | **Sedin Admin** |
| **Reject** | Denies the customer request and sends a rejection email with optional reason. | **Sedin Admin** |

## 2.3 Visual Indicators

* **Pending Request List:** Displays company names in the Sedin admin portal’s inbox.
* **Detailed Request View:** Shows full customer registration details when a company name is clicked along with **Approve, Reject** button.
* **Notification:** Email notification sent to the customer after approval or rejection.

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# 3. Customer Login

The **Customer Login** page allows customers to securely access their accounts using their login credentials. It also provides features for password recovery.

## 3.1 Screen Launch

The Customer Login Page is launched by clicking on the login portal link provided to the customer via email. This email is sent upon approval of their registration request. Once the customer clicks the link, the login portal is opened, granting access to the login functionality.

## 3.2 Process Flow

### 3.2.1 User Input

The attributes in the Customer login form

| **Attribute** | **Data Type** | **Validation Criteria** | **Processing Logic** |
| --- | --- | --- | --- |
| Username | Alphanumeric | Mandatory. Checks for alphanumeric input and matches with registered username in database. | Validate input,authenticate user details. |
| Password | Alphanumeric | Mandatory. Should match the username’s password in the database. | Authenticate user credentials securely. |

The attribute in Reset Password Form

| **Attribute** | **Data Type** | **Validation Criteria** | **Processing Logic** |
| --- | --- | --- | --- |
| Email | Alphanumeric | Pre-filled with the customer’s registered email. | To reset password. |

### 3.2.2 User Interaction

* The Login page displays Username and Password input fields along with a Login button.
* A Forgot Password link is also present below the password field.

**Entering Credentials and Login**

* The customer enters their Username and Password in the input fields.
* The Login button remains disabled until both fields are filled.
* Clicking Login triggers authentication:
  + If correct, the user is redirected to the Home Page.
  + If incorrect, an error message appears: "Invalid Username or Password. Please try again."

**Forget Password Feature**

* User clicks "Forgot Password" on the login form.
* The Forgot Password page is displayed within the login form.
* The page contains an Email field (pre-filled with the registered email but editable).
* A Confirm button is present but remains disabled until a valid email is entered.
* On clicking Confirm, a password reset link is sent to the registered email.

### 3.2.3 Action

| **UI** | **Action** | **Description** | **Rule** |
| --- | --- | --- | --- |
| Login Page | Submit | On clicking login Button | Login into the website. |

### 3.2.4 Response Handling

* **Success** : On successful login , it redirects to the Home Page.
* **Failure** : On any error in the entered details, error message is displayed below the respective attributes.

## 3.2 Buttons and Logic

| **Button Name** | **Processing Logic** | **Role** |
| --- | --- | --- |
| **Login** | Authentication user credentials and redirects to Home Page upon success. | **Customer Admin** |
| **Confirm** | In order to reset the password, the mail id confirmation is given. | **Customer Admin** |

## 3.3 Visual Indicators

* **Error Messages:** Clear and actionable error messages are displayed for invalid inputs that are entered in username , password.
* **Success Messages:** A success notification is displayed upon successful password reset email dispatch.

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# 4. User Creating

The User Creation page allows administrators to create and manage user accounts. It enables the creation of new users. Additionally, it provides functionality for editing existing user details and managing multiple users through an intuitive side drawer interface and user list display.

## 4.1 Screen Launch

In the Home Page there is an Module Setup icon, in the side navbar. Clicking this icon redirects to a page with two card layouts. Selecting a User Creation card launches this page.

## 4.2 Process Flow

### 4.2.1 User Input

The attributes in User Creation From(side drawer):

| **Attribute** | **Datatype** | **Validation Criteria** | **Processing logic** |
| --- | --- | --- | --- |
| Username | Alphanumeric | Length: 5–20, Alphanumeric with underscores (\_). Must be unique. | Check uniqueness |
| Email | Alphanumeric | Proper email format (e.g., user@example.com). Must be unique. | Validate format. |
| Password | Alphanumeric | Passwords are generated automatically by the Generate password button.(Strong password with alphanumeric characters is generated.) | Hash password before storing |
| Role | String | Dropdown box with Admin, Manager, Viewer. | Stores the input. |

### 4.2.2 User Interaction

* If no user is created yet, the system automatically opens the **User Creation Form** in a side drawer, allowing the customer admin to create the first user.
* The admin fills in the Username, Email, Password (can generate it dynamically by the button present near it), and Role fields in the form, these are present in the side drawer component.
* After filling in the details, the admin clicks the **Create** button to submit the form, which is present below the attributes.
* The system validates the inputs, checking that all mandatory fields are filled, the Username is unique, and the Email follows the correct format.
* If validation passes, the system creates the user and stores the details in the database.
* After the first user is created the side drawer is closed and on User Creation page, the **"New User"** button present in the top right becomes active, and a list of users is displayed below in a tabular format, with heading **Username, Email, Status, Role,** and an **Edit** button against each user.
* The admin can click the "New User" button to open the User Creation Form again and add more users, repeating the process.

### 4.2.3 Action

| **UI** | **Action** | **Description** | **Rule** |
| --- | --- | --- | --- |
| User Creation Page | Submit | Creates a user. | On clicking create user is created and gets added to horizontal list. |

### 4.2.4 Response Handling

* **Success:** On successful user creation the user details are visible in the horizontal tabular list.
* **Failure** : The user will not be created.

## 4.2 Buttons and Logic

| **Button Name** | **Logic** | **Role** |
| --- | --- | --- |
| **New User** (present in landing page) | Opens the user creation form. | **Customer Admin** |
| **Generate Password** (present user creation form) | Dynamically generates a secure password. | **Customer Admin** |
| **Create** (Present in user creation form) | Submit the form, validate inputs, and create the user. | **Customer Admin** |
| **Edit** (present in landing page) | To edit the user details. | **Customer Admin** |

## 4.3 Visual Indicators

* **Disabled Button:** The "New User" button is disabled until the first user is created.
* The button “Create” in the user creation form is initially dimmed, until all the details are filled.
* **Horizontal User List Layout:** The user details are displayed in a clean, horizontal list layout with column headings for Username, Email, Status, and Role and Edit (Button).
* **Side drawer Form:** The user creation form appears in a side drawer component when the "New User" button is clicked.

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# 5. Configuration Manager

The Configuration is used to connect the source data and destination data.

## 5.1 Screen Launch

In the Home Page there is an Module Setup icon, in the side navbar. Clicking this icon redirects to a page with two card layouts. Selecting Configuration Manager card launches this page.

## 5.2 Process Flow

### 5.2.1 User Input

The attributes in Configuration setup form:

**Connection Configuration:**

| **Attribute** | **Datatype** | **Validation Criteria** | **Processing logic** |
| --- | --- | --- | --- |
| Source/Destination (Radio button) | - | Mandatory selection between Source or Destination. | Toggles the visibility of On-Premise/Cloud |
| On-Premise/Cloud | - | Mandatory selection between On-Premise/Cloud | Toggles the visibility of Connection Name,Connection Type. |
| Connection Name | Alphanumeric | Unique, mandatory (eg: MySql\_OrderDB\_source) | Stores the connection name in the database. |
| Connection Type | Dropdown box | Dropdown with predefined values  (MS SQL, PostgreSql,API,Flat File). | Stores in the database. |

**SQL Connection (Attributes displayed when SQL is selected):**

| **Attribute** | **Datatype** | **Validation Criteria** | **Processing logic** |
| --- | --- | --- | --- |
| Hostname/IP Address | Alphanumeric | Mandatory, Valid IP format or hostname. | Captures database host details. |
| Username | Alphanumeric | Mandatory | Captures database username. |
| Password | Alphanumeric | Mandatory | Captures database password. |

**API Connection (Attributes displayed when API is selected):**

| **Attribute** | **Datatype** | **Validation Criteria** | **Processing logic** |
| --- | --- | --- | --- |
| Relative URL | Alphanumeric | Mandatory, Valid URL Format. | Captures the endpoint API and stores. |
| Authentication Type | Alphanumeric | Dropdown with predefined values (Basic, OAuth) | Captures the data. |

**Flat File Connection (Attributes displayed when Flat File is selected):**

| **Attribute** | **Datatype** | **Validation Criteria** | **Processing logic** |
| --- | --- | --- | --- |
| File Path | String | Mandatory, Valid path format.(eg: home/desktop/report) | Captures the location of file. |
| File Type | - | Dropdown with predefined values.(eg: CSV,Excel) | Enable file process |

### 5.2.2 User Interaction

* When the Configuration Manager icon is clicked for the first time, the following occurs:
  + The Configuration Manager page appears in a dimmed state.
  + A side drawer opens immediately, presenting the initial configuration form, which would normally appear when the New button is clicked.
* The drawer displays two radio buttons: **Source,Destination**
* The user must select either Source or Destination to proceed. Once a selection is made, the On-Premise/Cloud radio buttons are revealed.
* After the user selects On-Premise or Cloud, the following fields appears dynamically:
  + **Connection Name** (Text field): The user is prompted to input the name for the connection.
  + **Connection Type** (Dropdown menu): The user is prompted to select a connection type from options like MS SQL, API, or Flat File.
* After selecting a connection type, the respective field appears dynamically:
  + **MS SQL Connection Type:** The form will display the following mandatory fields: **Hostname/IP Address, Username , Password.**
  + **API Connection Type:** The form will display the following mandatory fields: **Relative URL** (Text field), **Authentication Type** (Dropdown: options like Basic, OAuth)
  + **Flat File Connection Type:** The form will display the following mandatory fields: File Path (Text field), File Type (Dropdown: options like CSV, Excel)
* Create Button present in the side drawer form, below all the attributes will remain disabled until all mandatory fields have been filled out.
* On Clicking **Create** the connection is created and will be displayed in the Configuration Manager page.
* Upon successful creation of the connection, the side drawer will close, and the user will be redirected to the Configuration Manager page.
* The Configuration Manager page has New button at the top of page , has a horizontal list with columns **Connection Name, Source/Destination**
* The list will show the details for each created connection, including the Connection Name and Source/Destination status.

### 5.2.3 Action

| **UI** | **Action** | **Description** | **Rule** |
| --- | --- | --- | --- |
| Configuration Manager Page | Save | On clicking create source and destination are created. | The source and destination is created. |

### 5.2.4 Response Handling

Not Applicable

## 5.3 Buttons and Logic

| **Button Name** | **Logic** | **Role** |
| --- | --- | --- |
| **Source/ Destination** (Radio button) | Toggles the visibility of relevant options for source/destination configuration. | **Customer Admin** |
| **Create** | Creates the connection after validating all mandatory attributes. | **Customer Admin** |
| **New** | Opens the side drawer to create a new connection. | **Customer Admin** |

## 5.4 Visual Indicators

* **Disabled Create Button:** The Create button remains inactive until all mandatory fields are completed.
* **Dynamic Attribute Rendering:** Selecting a Connection Type dynamically displays relevant attributes.
* **Horizontal List Display:** After creating a connection, the list provides a clear overview with headings for:
  + Connection Name
  + Source/Destination

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# 6. Module creation

The Module Creation feature allows users to create and manage modules. Clicking the Module Creation card opens a side drawer where users fill in required fields (Name, Email). After validation, the Create button activates, and upon creation, a success notification appears. The created modules are displayed in a list, and additional modules can be added using the Create New Module button.

## 6.1 Screen Launch

In the Home Page there is an Module Setup icon, in the side navbar. Clicking this icon redirects to a page with two card layouts. Selecting Module creation card launches this page.

## 6.2 Process Flow

### 6.2.1 User Input

The attributes in Module Creation form:

| **Attribute** | **Datatype** | **Validation Criteria** | **Processing logic** |
| --- | --- | --- | --- |
| Name | String | Must be unique. | Captures the module name(eg: Sales, Finance) |
| Email | alphanumeric | Valid email format. (e.g., user@domain.com  ) | Stores the email. |

### 6.2.2 User Interaction

* The user clicks on the Module Creation card on the Home Page, which opens the side drawer displaying the form to create a new module.
* In the side drawer, the user fills in the Name and Email fields. Both fields are mandatory.Additionally if we need to add email, then can click the **Add Email** button and can add additional email.
* Initially, the Create button in the side drawer is dimmed and inactive. It becomes enabled only after both mandatory fields are filled and validated.
* Once all fields are filled correctly, the user clicks the Create button. Upon successful creation, a toaster message appears:
* "Module created successfully."
* The module details are displayed in a horizontal list layout under the headings: Module Name and Email.
* If the user clicks the Cancel button, the side drawer closes without saving any changes.
* After the first module is created, the Create New Module button becomes visible at the top of the page.
* Clicking the Create New Module button reopens the side drawer for adding another module, following the same process as before.
* The created modules are listed in a horizontal layout under the headings: Module Name and Email.

### 6.2.3 Action

| **UI** | **Action** | **Description** | **Rule** |
| --- | --- | --- | --- |
| Module creation page. | Create | Clicking the create button submits the form and creates a module. | Module is created. |

### 6.2.4 Response Handling

* **Success:** A toaster notification appears with the message: "Module created successfully."
* **Failure:** If validation fails or the module creation process encounters an error, an error message is displayed (e.g., "Invalid input. Please recheck your details.").

## 6.3 Buttons and Logic

| **Button Name** | **Logic** | **Role** |
| --- | --- | --- |
| **Create** | Creates the module after validating all mandatory fields. | **Customer Admin** |
| **Add Email** | Allows a module to have more than one email. | **Customer Admin** |
| **Cancel** | Closes the side drawer component without saving any changes. | **Customer Admin** |
| **Create New Module** | Opens side drawer component to create additional components. | **Customer Admin** |

## 6.4 Visual Indicators

* **Disabled Create Button:**
  + The Create button remains dimmed until all mandatory fields are completed.
* **Dynamic List Update:**
  + Each newly created module is appended to the list in a horizontal layout with the following headings: Module Name,Email
* **Side Drawer Visibility:**
  + The side drawer opens when the Module Creation card is clicked or the Create New Module button is selected.
  + The drawer closes when the Cancel button is clicked.

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# 7. Entity Data Mapping

The Entity Mapping process identifies and links relevant data entities (tables) based on business requirements, ensuring structured and meaningful data for analysis.

## 7.1 Screen Launch

From the Home Page, navigate to the side navigation bar and locate the Data Operations icon. Clicking on this icon reveals a card layout displaying multiple options. Within this layout, select the Entity Data Mapping option. Once clicked, the Entity Data Mapping Page opens, providing access to its features and functionalities.

## 7.2 Process Flow

### 7.2.1 User Input

Not applicable

### 7.2.2 User Interaction

* Users navigate to the Entity Mapping screen via the side navigation bar.
* They can search for specific tables using the search bar.(eg: Sales)
* AI provides table suggestions based on the search query from the connected source. (Eg: For “Sales” AI Suggest tables F\_SalesOrder, F\_Shipment, F\_Payment, F\_Return, D\_Product)
* Users can accept, modify, or manually add tables.
* Once a table is selected, AI suggests essential and inessential columns.
* Users can choose columns to map and define data transformations.
* In the Workflow page, users can configure data movement from Source → Bronze → Silver layers using drag-and-drop mapping.

### 7.2.3 Action

| **UI** | **Action** | **Description** | **Rule** |
| --- | --- | --- | --- |
| Entity Data Mapping page |  |  |  |

### 7.2.4 Response Handling

**Success** :

* Mapping successfully saved.
* Data flow applied successfully.
* Mapping exported as JSON/YAML.

**Failure** :

* Please select at least one table before proceeding.
* Column selection is required to apply mapping.
* Data validation failed. Please review mappings before saving.

## 7.3 Buttons and Logic

| **Button Name** | **Logic** | **Role** |
| --- | --- | --- |
| **Save** | Saves the selected columns and tables. | **Customer Admin** |
|  |  |  |

## 7.4 Visual Indicators

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# 8. Data Governance

The Data Governance Page facilitates seamless data governance by allowing users to interact with data layers, view detailed table information, and manage rules efficiently to check and improve Data Quality.

## 8.1 Screen Launch

From the Home Page, navigate to the side navigation bar and locate the Data Operations icon. Clicking on this icon reveals a card layout, where various options are displayed. Within this layout, select the Data Governance option. Once clicked, it opens the Data Governance Page, allowing access to its features and functionalities.

## 8.2 Process Flow

### 8.2.1 User Input

The attribute in the Data Governance Page

| **Attribute** | **Datatype** | **Validation Criteria** | **Processing logic** |
| --- | --- | --- | --- |
| Choose Layer | - | Dropdown with Gold Layer, Silver Layer. | Toggles the display of Total Number of Tables. |

The attributes in the Side Drawer that opens on clicking New Rule.

| **Attribute** | **Datatype** | **Validation Criteria** | **Processing logic** |
| --- | --- | --- | --- |
| Select Rule | - | Dropdown(E.g : **No Null Values in Column, Column Sum in range, Data Length, Duplicate Rows, String Format Match**) | Set rule to the table. |
| View Column | - | Checkbox(shows all column,can select multiple columns) | Rule is applied to these columns. |

### 8.2.2 User Interaction

**Selecting a Layer**

* The page contains a Choose Layer dropdown with two options: Silver Later, Gold Layer
* When a layer is selected, the system dynamically loads a table listing below.

**Viewing Tables and Columns**

* The loaded table contains the following headings:
  + **Table Name** – Displays the name of each table in the selected layer.
  + **Total Columns** – Shows the total number of columns in each table.
  + **Rule – Displays** either a Create or Edit button depending on whether rules have been defined for the table.
  + **Run Test** – Displays a play button for executing data quality checks.

**Creating or Editing Rules**

* Each row in the table has a Rule column:
  + If no rule is defined, the button displays Create.
  + If a rule is already created, the button displays Edit.
* Clicking either button opens a side drawer.

**Defining a New Rule**

* Inside the side drawer, the following elements are displayed:
  + A New Rule button at the top.
  + A list of existing rules with an Edit button next to each.
* Clicking New Rule opens a new section inside the side drawer, where the user defines a rule.

**Configuring the Rule**

* The New Rule section contains:
  + "**Select Rule"** Dropdown – Offers predefined rules (e.g., No Null Values in Column).
  + **"View Columns"** Checklist Dropdown – Allows users to select multiple columns.
  + **Textbox** – Selected column names are displayed here automatically.
  + **Run Test** Button – Initially disabled, becomes active once all fields are selected.
  + **Save Button** – Saves the rule configuration.

**Saving the Rule and Running Tests**

* Clicking Save triggers a toaster notification:***"Rule has been created."***
* The side drawer closes, and the Run Test button is now available for this table.

**Executing Data Quality Checks**

* Each table row has a **Run Test** column with a play button.
* Clicking the **play button** executes the validation process for the table.
* Once the test is completed, a **donut chart** appears in the Run **Test** column, displaying the validation results.

### 8.2.3 Action

| **UI** | **Action** | **Description** | **Rule** |
| --- | --- | --- | --- |
| Data Governance Page | Save | On clicking the save button the rule will be saved. | Rules to check data quality is applied to column. |

### 8.2.4 Response Handling

* **Success:**
  + **When Rule is Created:** A toaster notification with the message "Rule has been created" confirms the rule creation process.
  + **When Rule is Edited:** The user can modify an existing rule via the Edit button next to the rule in the side panel. The updated rule will be saved and reflected in the list of rules for the table. Along with a toaster notification with the message ***“Rule\_Name has been edited Successfully”.***
* **Failure:**
  + If any required fields are not filled or if the selected rule is not valid, appropriate error messages or validation prompts will be shown in the UI, preventing the user from saving the rule until all conditions are met.

## 8.3 Buttons and Logic

| **Button Name** | **Processing Logic** | **Role** |
| --- | --- | --- |
| **Play** (Button under Run Test column) | Runs data background against all the applied rules. | **Customer Admin** |
| **Create Rule** (Button present in the tabular list) | Opens New rule creation’s side drawer. | **Customer Admin** |
| **Edit** (Button present in the tabular list) | Opens side drawer. | **Customer Admin** |
| **New Rule** (present in the side panel) | Opens a new session in side drawer for creating a new rule/ edit rule. | **Customer Admin** |
| **Run Test** (inside side drawer) | Initially disabled, becomes enabled after selecting rule and columns. Performs validation on selected rule. | **Customer Admin** |
| **Save** (Inside side drawer) | Saves the created rule and adds to the existing rule list. | **Customer Admin** |

## 8.4 Visual Indicators

* **Disabled Run Test Button:**
  + The Run Test button remains dimmed and unavailable until all required fields (rule and columns) are selected in the New Rule popup.
* **Dynamic Table Update:**
  + When a layer (Silver/Gold) is selected, the table updates dynamically to display the Total Number of Tables along with Table Names and Total Columns.
  + Selecting a specific table name updates the side drawer with corresponding rules.
* **Side Drawer Visibility:**
  + The Side Drawer appears when a table name is clicked, displaying associated rules and the New Rule button.
  + The Drawer closes when the user clicks the cancel icon on the top right.
* **Toaster Notification:**
  + A Toaster Notification appears after successfully saving a rule, confirming with the message: "Rule has been created."
  + Enabled Run Test Button:
  + Once all required fields in the New Rule popup are filled, the Run Test button becomes active, indicating readiness for validation.

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# 9. Data Security

The Data Security page provides functionalities for managing access control at different levels, ensuring secure data handling. It allows users to apply security restrictions at the Row level, Column level, and Object level to regulate data visibility and accessibility.

## 9.1 Screen Launch

From the Home Page, navigate to the side navigation bar and locate the Data Operations icon. Clicking on this icon reveals a card layout, where various options are displayed. Within this layout, select the Data Security option. Once clicked, it opens the Data Security Page, allowing access to its features and functionalities.

## 9.2 Process Flow

### 9.2.1 User Input

Not applicable

### 9.2.2 User Interaction

* The side navigation bar on this page contains three options:
  + Object Level Select
  + Row Level Select
  + Column Level Select

**Object Level Security Implementation**

* Clicking Object Level Select displays the list of table names in the destination connection in a tabular list format.
* Each table entry has the following options: **Assign Modules** button**, Enable All** button
* Click on the Enable All button beside the table.This automatically assigns access to all available modules.
* Clicking the "Add Module" button opens a popup window displaying all the created module names in a checklist format.
* Users can select one or multiple modules by ticking the checkbox for each module.
* If a module has already been assigned access, the corresponding checkbox will be pre-selected.
* Users can also remove access by unchecking the checkbox for any previously selected module.
* Once the required modules are selected, clicking the "Apply" button enforces Object Level Security on the selected table i.e. the access to that table will be given for the selected modules.

### 9.2.3 Action

| **UI** | **Action** | **Description** | **Rule** |
| --- | --- | --- | --- |
| Data Security Page | Save | On selecting the modules. | Grant access to the selected modules for the chosen table. If a module is unchecked, access is revoked. |

### 9.2.4 Response Handling

Not applicable.

## 9.3 Buttons and Logic

| **Button Name** | **Logic** | **Role** |
| --- | --- | --- |
| **Assign Modules** | Opens a popup displaying all created modules with checkboxes. Users can select or deselect modules to grant or revoke access. Clicking "Apply" assigns the selected modules to the table. | **Customer Admin** |
| **Apply** (In popup window) | Confirms the selected module access and applies object-level security to the table. | **Customer Admin** |
| **Enable All** | Grants access to all available modules for the selected table. | **Customer Admin** |

## 9.4 Visual Indicators

* **Dynamic Table List:** Displays all tables available in the destination connection.
* **Popup Visibility:** The popup appears when assigning access to specific modules and disappears upon applying or canceling the selection.

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# 10. Time Zone Configuration

The Time Zone Configuration feature allows users to select and update their preferred time zone settings. This ensures that all system timestamps align with the user's selected region, improving accuracy in scheduling and logging activities

## 10.1 Screen Launch

On the home page, the side navigation bar features an icon labeled Data Insights and Control. Clicking on this icon opens a new page displaying a two-card layout. Within this layout, selecting the Data Catalog option navigates the user to the Data Catalog page, allowing them to explore data relationships and dependencies.

## 10.2 Process Flow

### 10.2.1 User Input

Not applicable

### 10.2.2 User Interaction

* Clicking on Time Zone Configuration opens a dropdown menu displaying a list of available time zones.
* The user selects a time zone from the dropdown list.
* Once selected, the system automatically applies the chosen time zone for timestamps across the platform.

### 10.2.3 Action

| **UI** | **Action** | **Description** | **Rule** |
| --- | --- | --- | --- |
| Time zone Configuration | Save | On Selecting a time zone in the Time Zone Configuration option | The time zone selected is saved and updated. |

### 10.2.4 Response Handling

Success : The Time Zone Updated and can be viewed in the Time Zone Configuration attribute.

Failure : A toaster error message appears: "Failed to update time zone. Please try again."

## 10.3 Buttons and Logic

Not applicable

## 10.4 Visual Indicators

* The dropdown menu dynamically updates based on user selection.
* A toaster error message appears: "Failed to update time zone. Please try again."

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# 11. Transformation Agent - SQL

The Transformation Agent is a critical ETL component that processes and refines raw data before it moves to the next stage. It performs deduplication using exact matching,Nearest Neighbor algorithm and other algorithms, and fuzzy logic to identify and eliminate duplicate or similar records. Business rules and transformations are applied using SQL, Python, or PySpark, ensuring data standardization, enrichment, and quality improvements.

## 11.1 Screen Launch

The user navigates to the Home Page,where Data Transformation and scheduling icon is available and on opening that and clicking Transformation Agent icon opens a new page displaying three card layouts. The user selects the SQL card, which launches the SQL Compiler Screen.

## 11.2 Process Flow

### 11.2.1 User Input

Not applicable

### 11.2.2 User Interaction

* The page loads with a **SQL Compiler Screen** in the center.
* A side navigation bar on the left displays details about the connected data sources.
* At the top of the side navbar, a **“Plus”** button (+) is available.
* Clicking this button opens a dialog to add an additional data source.

**Executing SQL Queries**

* The user enters SQL queries in the SQL Compiler.
* The **Execute** Button is located at the top-right corner of the compiler.
* Clicking Execute runs the query, and results are displayed below.
* If successful, the query output appears in a structured format.
* If the query contains errors, an error message is displayed with debugging details.

### 11.2.3 Action

| **UI** | **Action** | **Description** | **Rule** |
| --- | --- | --- | --- |
| Transformation agent - SQL | Compile | On clicking the Execute button. | Compiles the SQL Query. |

### 11.2.4 Response Handling

* **Successful Query Execution** : The SQL query runs successfully, and the results are displayed in a tabular format below the compiler.
* **Syntax Error in Query** : The system detects an invalid SQL syntax and displays an error message with details.

## 11.3 Buttons and Logic

| **Button Name** | **Logic** | **Role** |
| --- | --- | --- |
| **Plus (+)** | Opens a dialog for adding a new data source. | **Customer Admin** |
| **Execute** | Runs the SQL Query and displays the result/ error. | **Customer Admin** |

## 11.4 Visual Indicators

* **Data Source List Update:** Newly added data sources dynamically appear in the side navbar when added using the "Plus symbol" button.
* **Query Execution Status:** If the query executes successfully, structured results are displayed below the SQL compiler. In case of errors, detailed error messages are shown to the user.

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# 12. Transformation Agent - Python/Pyspark

The Transformation Agent is a critical ETL component that processes and refines raw data before it moves to the next stage. It performs deduplication using exact matching,Nearest Neighbor algorithm and other algorithms, and fuzzy logic to identify and eliminate duplicate or similar records. Business rules and transformations are applied using SQL, Python, or PySpark, ensuring data standardization, enrichment, and quality improvements.

## 12.1 Screen Launch

The user navigates to the Home Page, where Data Transformation and scheduling icon is available and on opening that and clicking Transformation Agent icon opens a new page displaying three card layouts. The user selects the Python/Pyspark card, which launches the Python/Pyspark environment.

## 12.2 Process Flow

### 12.2.1 User Input

Not applicable

### 12.2.2 User Interaction

* On clicking the **Python/PySpark card**, the page loads with the Python Compiler by default.
* A side navigation bar on the left displays options for managing data sources and selecting the execution environment.
* At the top of the side navbar, a **Plus (+)** button is available.
* Clicking the Plus (+) button opens a **dialog box** to add an additional data source.

**Choosing Execution Environment:**

* Below the Plus (+) button, the **Choose Environment** section is displayed.
* The user can select between **Python** and **PySpark.**
* Clicking Python loads the Python compiler.
* Clicking PySpark loads the PySpark compiler.

**Executing Code:**

* The user writes Python or PySpark code in the compiler.
* A **Run** button is located at the top-right corner of the compiler.
* Clicking Run executes the code.
* If successful, the output is displayed below the compiler.
* If an error occurs, an error message is displayed with debugging details.

### 12.2.3 Action

| **UI** | **Action** | **Description** | **Rule** |
| --- | --- | --- | --- |
| Transformation agent - Python/Pyspark | Compile | On clicking the Run button. | Compiles the code. |

### 12.2.4 Response Handling

* **Successful Execution** : The code runs successfully, and the results are displayed in a tabular format below the compiler.
* **Syntax Error in Query** : The system detects an invalid SQL syntax and displays an error message with details.

## 12.3 Buttons and Logic

| **Button Name** | **Logic** | **Role** |
| --- | --- | --- |
| **Plus (+)** | Opens a dialog for adding a new data source. | **Customer Admin** |
| **Run** | Runs the code and displays the result/ error. | **Customer Admin** |

## 12.4 Visual Indicators

* **Data Source List Update:** Newly added data sources dynamically appear in the side navbar when added using the "Plus symbol" button.
* **Code Execution Status:** If the query executes successfully, structured results are displayed below the compiler. In case of errors, detailed error messages are shown to the user.

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# 13. Transformation Agent - Deduplication/Cleaning/Fuzzy logic

The Transformation Agent - Deduplication/Cleaning/Fuzzy Logic module enables users to clean and standardize data by applying transformation rules, clustering similar data points, and merging duplicate values.

## 13.1 Screen Launch

The user navigates to the Home Page,where Data Transformation and scheduling icon is available and on opening that and clicking Transformation Agent icon opens a new page displaying three card layouts. The user selects the Cleaning/Fuzzy logic card, which launches the screen.

## 13.2 Process Flow

### 13.2.1 User Input

Not applicable

### 13.2.2 User Interaction

* The Cleaning/Fuzzy Logic page opens and the side navbar contains two options: **Open Project, Create Project**.

**Option : Open Project:**

* Click **Open Project** from the side navigation bar.
* The screen displays a list of destination connections in a tabular format.
* Clicking on a specific destination connection shows **all tables** in that data source.
* Selecting a table displays its columns in a tabular format, along with the top 200 rows.
* Each column has a dropdown box near the column name for transformation options.

**Column Transformation:**

* Clicking on a column dropdown reveals Transform and Cluster & Edit options.
* Transform Option: Clicking Transform opens another dropdown with: **Trim leading & trailing white spaces, To title case, To uppercase, To lowercase.**
* Multiple transformations can be applied repeatedly to the same column.

**Clustering & Editing:**

* Clicking **Cluster & Edit** opens a popup window with a dropdown field labeled Method.
* The Method dropdown includes: **Nearest Neighbor, Key Collision, Fuzzy Logic**
* After selecting any one of the **Nearest Neighbor, Key Collision**, a tabular view appears with:
  + **Cluster Size** (number of cluster created for duplicate values)
  + **Row Count** (number of rows under the cluster)
  + **Values in cluster** (Values that are present in the cluster. Eg : Ima S P A, Ima spa)
  + **Merge** (checkbox)
  + **New cell value** (Defaultly shows the 1st value in cluster.And can also edit)
* The user can select clusters to merge by ticking the **Merge checkbox**.
* Users can choose from three actions:
  + **Merge Selected & Recluster:** Merges selected clusters and recalculates new clusters.
  + **Merge Selected & Close:** Merges selected clusters and closes the popup.
  + **Close:** Closes the popup without applying any changes.
* Once the clustering using the Nearest Neighbour and Key Collision is done, then next method **Fuzzy logic** is selected.
* The Fuzzy Logic algorithm is applied to data and an **Apply** button at the bottom is clicked to apply to the data.And the pop gets closed.
* Once the cleaning and merging process is complete, the transformed data can be **truncated and loaded into the silver layer.**

**Option : Create Project:**

* Click **Create Projec**t from the side navigation bar.
* A side drawer opens with the heading Get Data From and two options: **This PC** (for local files), **Database** (for external database connections)
* Upon selecting an option, the respective page opens, allowing users to connect to a table.
* Once a table is selected, the same transformation and clustering options as in the "Open Project" section are available.
* However, data processed through Create Project cannot be loaded into the silver layer.
* Instead, there is an option to save, on clicking the button **Save** the cleaned data is exported as a CSV or PDF file on the local device.

### 13.2.3 Action

| **UI** | **Action** | **Description** | **Rule** |
| --- | --- | --- | --- |
| Transformation Agent- Deduplication/Cleaning/Furry Logic. | Save | - | Applies the clustering and removes duplication. |

### 13.2.4 Response Handling

**Success: -**

**Failure:** An error message appears: *"Transformation failed. Please check the input data."*

## 13.3 Buttons and Logic

| **Button Name** | **Logic** | **Role** |
| --- | --- | --- |
| **Merge Selected & Recluster** | Merges selected clusters and reclusters. | **Customer Admin** |
| **Merge Selected & Close** | Merges clusters and closes popup. | **Customer Admin** |
| **Apply** | Apply the fuzzy logic to the data that is selected. | **Customer Admin** |

## 13.4 Visual Indicators

* **Dynamic Table Display:** Selecting a specific table dynamically updates the displayed columns and sample data.
* **Popup Windows:**
  + The Cluster & Edit popup dynamically updates based on the selected clustering method.
  + The Merge Selected & Recluster button refreshes clusters dynamically.
* **Dropdown Behavior:**
  + The Method dropdown updates the clustering options available.
  + The Transform dropdown updates based on the column selection.

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# 14. Scheduler

The Scheduler page allows users to create, manage, and edit job schedules. It displays existing jobs in a table with details like Schedule Name, Status, Start Time, End Time, and an Edit option.

## 14.1 Screen Launch

The user navigates to the Home Page, where Data Transformation and scheduling icon is available and on opening that and clicking Scheduler icon, opens this Scheduler Page.

## 14.2 Process Flow

### 14.2.1 User Input

The attributes in the Job Scheduler Form

| **Attribute** | **Datatype** | **Validation Criteria** | **Processing logic** |
| --- | --- | --- | --- |
| Schedule Name | String | Unique and Mandatory (eg:LoadSalesData) | Specific Schedule name is stored. |
| Schedule Type | Dropdown | Options: Genric(Runs automatically based on the date given in the table), Specific | Determines the scheduling behaviour. |

The attributes below are displayed only when the Schedule Type Specific is selected.

| **Attribute** | **Datatype** | **Validation Criteria** | **Processing logic** |
| --- | --- | --- | --- |
| Load Type | Dropdown | Options: Full load, Incremental Load | Load type in which data is uploaded. |
| Watermark (Applied to incremental load) | Date | It should be in date format.(Appears only when Load type is Incremental) | ? |
| Repeat | Dropdown | Options: By Weekly, By Monthly. | The time interval format. |
| Interval | Integer | Gets input based on the Repeat type.(Note: 30 mins) | Captures the time interval |
| Start Date | Date | Mandatory | Specifies when the schedule begins. |
| End Date | Date | Mandatory | Specifies when the schedule begins. |

### 14.2.2 User Interaction

* The Scheduler Page displays existing jobs in a tabular format with the following headings : **Schedule Name,Status,Start Time,End Time,Edit** (Clicking this button allows modifications to the job).
* At the top of the page, there is a Plus (+) button to create a new job schedule.
* Clicking the Plus button opens a Job Schedule Form (side drawer or popup) with the following attribute.

**Scheduling Logic**

* The Schedule Name , Schedule type are entered/selected.Load type, Watermark.
* In the **Schedule Type** if **Generic** is chosen, the schedule runs automatically based on the data entered in the table.
* If **Specific** is chosen, the following attributes get displayed :**Load Type**(Specific, Genric),**Watermark**(Applied to all incremental load) this watermark is displayed only when the Specific Load type is chosen,**Repeat** (By Weekly, By Monthly),**Interval** (as per the selected repeat type), **Start Date** and **End Date.**
* Lower part of the form contains two buttons.
  + **Create:** Saves and adds the schedule to the list.
  + **Discard:** Cancels changes and closes the form.

### 14.2.3 Action

| **UI** | **Action** | **Description** | **Rule** |
| --- | --- | --- | --- |
| Scheduler page | Create | On clicking the create button in the form. | Creates a Schedule. |

### 14.2.4 Response Handling

* **Success:** A toaster notification appears: "Job schedule created successfully."
* **Failure:** Displays an error message (e.g., "Invalid input. Please check your details.").

## 14.3 Buttons and Logic

| **Button Name** | **Logic** | **Role** |
| --- | --- | --- |
| **Create** | Creates a schedule in the specified format. | **Customer Admin** |
| **Discard** | Cancel and closes the Job Schedule form. | **Customer Admin** |
| **Edit** | Opens the Job Schedule form to modify an existing schedule, | **Customer Admin** |

## 14.4 Visual Indicators

* **Disabled Create Button:** The Create button remains inactive until all mandatory fields are completed.
* **Dynamic Form Behavior:** If Specific is selected, additional attributes (Repeat, Interval, Start Date, End Date) are displayed.
* **List Update:** Newly created schedules are added dynamically to the table in the Scheduler Page.
* **Side Drawer/Popup Visibility:** Opens on clicking the Plus button or Edit button and closes when Discard is clicked.

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# 15. Data Lineage

## 15.1 Screen Launch

On the home page, the side navigation bar features an icon labeled Data Insights and Control. Clicking on this icon opens a new page displaying a two-card layout. Within this layout, selecting the Data Catalog option navigates the user to the Data Catalog page, allowing them to explore data relationships and dependencies.

## 15.2 Process Flow

### 15.2.1 User Input

Not applicable

### 15.2.2 User Interaction

### 15.2.3 Action

| **UI** | **Action** | **Description** | **Rule** |
| --- | --- | --- | --- |
|  |  |  |  |

### 15.2.4 Response Handling

## 15.3 Buttons and Logic

| **Button Name** | **Logic** | **Role** |
| --- | --- | --- |
|  |  |  |
|  |  |  |

## 15.4 Visual Indicators

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# 16. Data Catalog

## 16.1 Screen Launch

On the home page, the side navigation bar features an icon labeled Data Insights and Control. Clicking on this icon opens a new page displaying a two-card layout. Within this layout, selecting the Data Catalog option navigates the user to the Data Catalog page, allowing them to explore data relationships and dependencies.

## 16.2 Process Flow

### 16.2.1 User Input

Not applicable

### 16.2.2 User Interaction

### 16.2.3 Action

| **UI** | **Action** | **Description** | **Rule** |
| --- | --- | --- | --- |
|  |  |  |  |

### 16.2.4 Response Handling

## 16.3 Buttons and Logic

| **Button Name** | **Logic** | **Role** |
| --- | --- | --- |
|  |  |  |
|  |  |  |

## 16.4 Visual Indicators

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# 17. Trail Run - Sample Data

The Trial Run feature allows users to test data transfers between a source and destination using a sample CSV file. Users can upload a CSV file, validate the format, and initiate a trial data transfer process.

## 17.1 Screen Launch

From the home page, the user navigates to the Testing & Monitoring icon in the side navigation bar. Clicking on this icon opens a page displaying three card layouts. Within this layout, selecting the Trial Run - Sample Run card launches the Trial Run page.

## 17.2 Process Flow

### 17.2.1 User Input

* The User uploads a CSV file on clicking the upload button in the Trail Run Page.

### 17.2.2 User Interaction

* The page displays **Source Connection Details** and **Destination Connection Details** side by side.
* Below these details, a tabular section contains an **Upload** button, which supports only **CSV file** formats.
* To upload the file, the Upload button should be clicked , this opens a dialog box for selecting a file.
* If a non-CSV file is uploaded, a toaster message appears: ***"Upload a CSV file."***
* If a valid CSV file is uploaded, it is processed and ready for trial execution.
* At the bottom right corner of the page, a **Run** button is displayed.
* Clicking the Run button triggers the trial execution process.
* A table is created in the source that mirrors the CSV data.
* Data is transferred from the source to the destination for validation.

### 17.2.3 Action

| **UI** | **Action** | **Description** | **Rule** |
| --- | --- | --- | --- |
| Trail Run - Sample Data Page | Save | On clicking the Run button. | The test data transfer is done. |

### 17.2.4 Response Handling

**Success :** The CSV file is processed successfully and is ready for execution. The Run button becomes enabled.

**Error :** If the uploaded file is not in CSV format, a toaster message is displayed: ***"Upload a CSV file."***

## 17.3 Buttons and Logic

| **Button Name** | **Logic** | **Role** |
| --- | --- | --- |
| **Upload** | Allow the user to upload only CSV files. | **Customer Admin** |
| **Run** | Initiates the data transfer process after a valid CSV upload. | **Customer Admin** |

## 17.4 Visual Indicators

* **Disabled Run Button:** The Run button remains disabled until a valid CSV file is uploaded.
* **Error Message for Non-CSV Files:** A toaster message is displayed if the file format is incorrect.
* **Table Creation Confirmation:** After execution, the trial table is created in the source, and that is transferred to the destination table.

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