



DataTrim Data Laundry - Installation, Setup and Users Guide

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1 Introduction

1.1 About this Document

Thank you for registering for the DataTrim Data Laundry App.

Although we have tried to make our solution as intuitive as possible and focused on making it simple to use, by hiding a lot of the usual technical data matching concepts and terminology behind the scenes, we realize that there are certain elements in the concept and particular with regards to the setup that makes this solution unique and therefore needs further explanation.

In this document you will find the instruction for how to install and setup the solution.

Please feel free to contact us at info@datatrim.com for details if you have any questions to this guide or feedback, which is much appreciated.

2 WHAT YOU NEED TO KNOW

Data Quality! –Your business success depends on your teams' access to complete, consistent and reliable data.

The DataTrim Data Laundry App is a cost-effective solution to assess and improve your data Quality.

The DataTrim Data Laundry App is a fully automated data quality and data cleaning app, which contains Data Quality Scores, Indicators and Dashboards.

The App will assess your data quality using data quality metrics, which will help you define your strategies for improving the Quality of your data. Giving you the possibility to monitor and demonstrate your progress.

The App will validate and improve Leads, Contacts and Accounts using a range of sophisticated algorithms using a wide range of international reference data to clean your data as well as identifying which data is considered bad (Dirty).

Each record will be flagged using a visual Quality Indicator giving a clear indication of the status and any possible issues. The Quality Indicator is also represented in string form, which allow you to run reports and thus extract dirty data for manual cleaning in e.g. Excel

Leads, Contacts and Accounts can be processed individually on demand, or in batch using the Laundry Basket scheduling function.

3 Data Quality Metrics

Before you start cleaning and modifying your data, you might want to pause for a second and think about where you are going with your data quality initiative.

"If you don't know where you are going, any road will get you there."

-Lewis Carroll

In order to get your hands around your data quality initiative, the DataTrim Data Laundry App contains 3 elements which will help you put some numbers behind your actions.

3.1 Data Quality Score

By scoring each record with a Data Quality Score (0-100), you can measure the current and future quality of your data. You can measure on the total set of data, or on subsets of data.

The Data Quality Score is calculated as a formula based on the completeness and validity of a number of fields. These fields are typical business-critical fields.

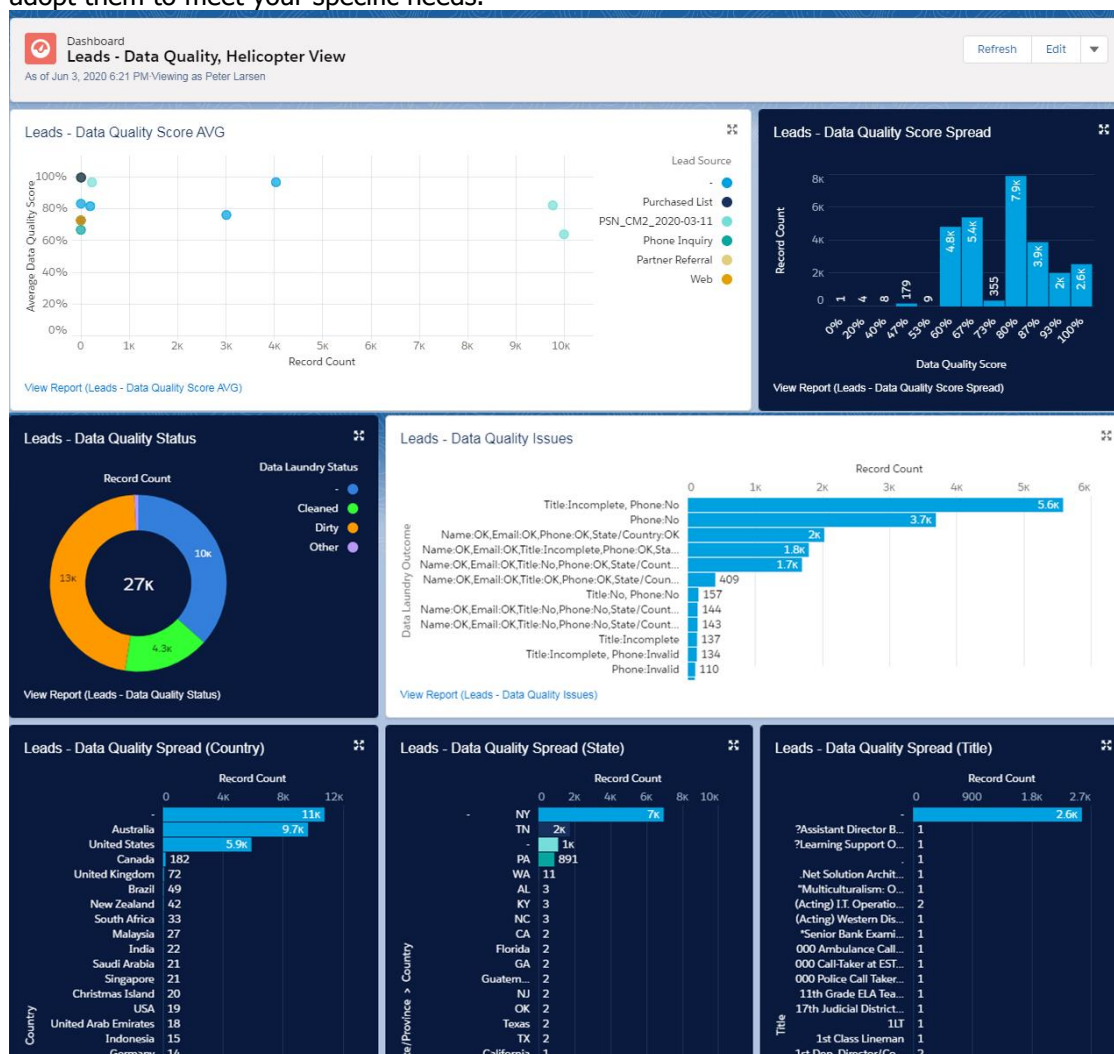
You can review the provided Data Quality Score, and create your own formula, to reflect the business-critical fields in your org. and in your business processes.

Each Laundry Basket (see below) will in addition calculate an Average Data Quality Score for the records in the basket. By using multiple baskets, you can therefore compare the Data Quality Score for records based on different geography, status, source etc.

3.2 Data Quality Dashboards

Dashboards are provided to get a high-level view of the Data Quality of the data in your database.

The reports and dashboards provided are provided on an AS-IS basis, and you can modify and adopt them to meet your specific needs.



The 7 reports provided in the Manage Package illustrates:

1) Average Data Quality Score per Source.

By segmenting your data quality score across source, you can see which sources are providing good and bad data. Not only can you use this to prioritize which records to clean first, but you can also use this to go back and see how you can improve the data at the source level, or prevent "dirty data from entering via a specific source

2) Spread of the Data Quality Score

Average is good, but doesn't say anything about the spread of the values adding up to the average. This graph illustrates the spread and gives information about potential gaps, and overlaps.

3) Data Quality Status

Once you start cleaning/validating your data with the Data Laundry, each record will be given a Data Quality Status, this way you can easily see which records are good to go and which needs more work.

4) Data Quality Issues

Knowing that some records still need to be improved is nice, but what is wrong? The List of Data Quality Issues outlines the issues detected across your records. Here you have a good overview of what is actually wrong with your data compared to your objective for good data.

5) Spread of Country Values

Assigning country to each record is typically the first thing to do when starting your cleaning process. Without the country, how do you assign it to the right team, and how do you know if the rest of the address, phone number etc. are correct if you don't know where in the world this person is located.

6) Spread of State Values

As for the Country, databases with large concentration of records from countries like the US, Canada, Australia etc. may not populate the Country field as it is considered implicit. In these cases, the State becomes the key to segmentation and assignment. As for the country values, these values can and are often spelled in multiple ways, making your data and reports based on these values inconsistent and inaccurate.

7) Spread of Title Values

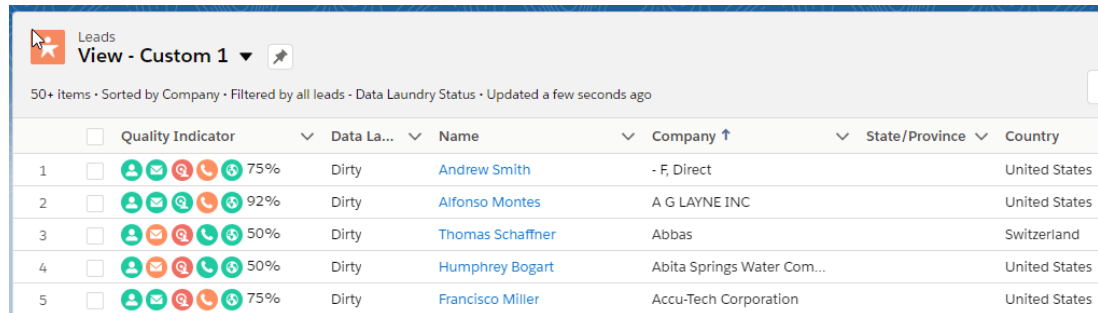
Segmenting leads, prospects or clients by Job Title has never been easy, as people and companies can have different Job titles covering similar functions and roles. Not to forget titles in other languages.

As discussed below, the DataTrim Data Laundry contains functionality to map Job Titles into picklist values for Job Role and Job Function.

This report simply shows your most common Job Titles, once you get the Data Laundry populating the Job Role and Job Function you will be able to see where you have gaps. This report will then help you identify Job Titles where you might need to enrich the mapping algorithm in order to get even more of your Job Titles mapped into picklist values for Job Role and Job Function.

3.3 Visual Data Quality Indicators

The Data Laundry App, comes with built in Visual Data Quality Indicators, which you can deploy to get an insight to the quality of your data, and decide where you should focus your effort in improving the Data Quality.



The screenshot shows the 'Leads' section of the Data Laundry app. It displays a table of leads with columns for Quality Indicator, Data Laundry status, Name, Company, State/Province, and Country. Each lead has a set of icons representing different quality metrics and a percentage score.

	Quality Indicator	Data La...	Name	Company	State/Province	Country
1	75%	Dirty	Andrew Smith	- F, Direct		United States
2	92%	Dirty	Alfonso Montes	A G LAYNE INC		United States
3	50%	Dirty	Thomas Schaffner	Abbas		Switzerland
4	50%	Dirty	Humphrey Bogart	Abita Springs Water Com...		United States
5	75%	Dirty	Francisco Miller	Accu-Tech Corporation		United States

Bad data quality is ¹:

Missing Records

Your company has over 500 customers in California alone, but the reports show data for only about 200 accounts in the entire western region.

Duplicate Records

A quick look at a list of accounts shows that data for customers with multiple locations is captured in multiple account records. In fact, so many customers appear in so many records that you're not even sure what defines a customer. Is it an address? A company name?

No Data Standards

A regional breakdown shows customers in 87 states. Geography class was a long time ago, but you seem to remember only 50 states. For example, California is listed as: CA, Calif, Cali, and, your favorite, "Surfin', USA."

Incomplete Records

Nearly all accounts in the western region are missing key data. Consumer accounts are missing data like phone and email. Business accounts are missing industry, revenue, and number of employees.

Stale Data

At least half of all accounts in the western region haven't been updated in the last 6 months, so you don't know how accurate the data is. And that data doesn't even include accounts not captured in Salesforce.

To this list we will add:

Invalid Data

Because although a field may be populated, the content may not valid. You may have Country populated with "[Unknown]", "N/A" etc. which will prevent your records from being include in Reports/Campaigns etc.

¹ Source: salesforce:

https://trailhead.salesforce.com/en/content/learn/modules/data_quality/data_quality_getting_started

The DataTrim Data Laundry, will help you address the lack of standardization, incompleteness and invalidity.

As goes for Duplicate Records, we recommend: DataTrim Dupe Alerts and DataTrim Entry Check as 2 excellent apps which will help you get rid of and prevent duplicates from multiplying across your dataset.

Missing Records, can of cause represent the lack of data in your database. But it can also be due to the fact that some of your customer records doesn't have the state populated, or has been wrongly aligned to another state or country.

As for stale data, 6 months without updates or activities may not be long for some companies, but it is always good to keep this in mind as most tend to keep the data forever once it is in the database, but simply ask yourself how long ago did you change job? 3-4 years? So what portion of the contacts and leads in your database are still in the same position as when the Job Title was updated last time?

The DataTrim Data Quality Indicators will for each record highlight, valid, invalid and missing values, combined with a score – letting you rank your records and help identify the good the bad and the ugly data.

These indicators can be customized to meet your criteria and priorities.

Once you have your Data Quality Indicator in place, you can now start validating and cleaning your records.

The Data Laundry operates in 3 modes:

- | | |
|-----------------|---|
| Update | Will update the target fields on the records with the outcome of the cleaning and update the Data Laundry fields on the records for the Data Quality Indicators to present their results. |
| Validate | Will ONLY update the Data Laundry fields on the records for the Data Quality Indicators to present their results. The target fields will not be updated. |
| Preview | In Preview Mode, a csv file is being generated with the source and target data including the outcome codes which will help you review the data e.g. in Excel for manual cleaning. |

4 The Data Laundry App

4.1 Laundry Basket

The Laundry Basket is a container for a set of records (Leads/Account or Contacts) which can be validate and/or cleaned in a batch process.

The Laundry Basket includes a filter function which will allow you to segment your data, and e.g. process data from different sources separately.

4.2 Cleaning Results

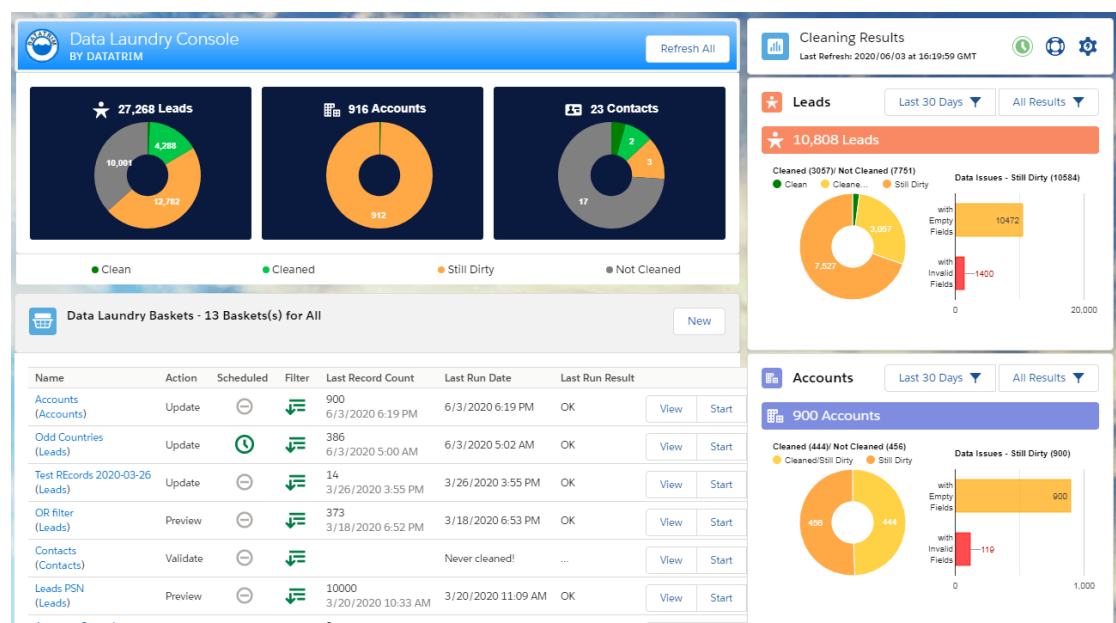
A Laundry Cleaning Result Record is a log record which is generated for each cleansing process and allows you to monitor the progress and history of your cleaning efforts.

Each Cleaning Results contain statistics being collected throughout the organization, giving you counts for how many records is processed daily and gives you a possibility to monitor how the quality of your data is progressing over time.

4.3 Data Laundry Console

The Data Laundry Console is your one-page overview on what is going on.

In a snapshot you can see what is being cleaned, what the quality level of your current data is and much more.



5 The Data Laundry

The Data Laundry contains built-in cleaning algorithms which will address the dirty data issues by identifying and standardizing address information according to country specific address structures, normalize and standardize elements like postcodes, location, region, country, etc. The solution will furthermore validate email, URL and phone/fax/mobile respecting local preferences and languages.

Job Titles are mapped into Job-Role and Job-Function, providing standardized picklist values for effective selection of leads and contacts for your campaigns.

For more about the Cleaning and Validation algorithms please see: Appendix A and Appendix B.

5.1 Street, City, Postal Code, State and Country

The Data Laundry leverages recommendations and guidelines from local postal authorities for more than 50 countries world-wide, incl all European Countries, USA, Canada and Australia.

Country Codes are coded using the ISO 3166 Country names and Alpha-2 code for abbreviated values.

Should you have values which are not confirm with the ISO Standard, but which you need to keep e.g. due to integrations with other systems using other values, you can, in the setup define your custom values.

States are normalized into abbreviated values, e.g. TX for Texas, NSW for New South Wales etc.

5.2 Phone numbers

Phone numbers are normalized and formatted according to local country preferences. The cleaned Phone numbers can be formatted in international format (with international dialing prefix) or in local format.

In the setup you can define your local country or multiple if required. This way you can get e.g. National phone formats (without international prefix) for US and CA, and have the international prefix added for all other countries.

5.3 Job Title

The DataTrim Data Laundry is capable of parsing Job Titles from around the world, and map them into a Job Role and a Job Function.

- The Job Role indicates which role a person has in the organization (e.g. Director, Manager, Assistant)
- The Job Function indicates to which part of the organization the person belongs (e.g. Finance, IT, Procurement, Sales)

2 Picklist Fields are available for Leads and Contacts, which will be populated with the derived picklist value during the cleaning.

The DataTrim Data Laundry included preset mapping; these settings can be customized to meet your picklist values. See the Setup.

6 Cleaning individual record(s)

Leads, Accounts and Contact can be cleaned individually using the Detail or List buttons available.

The Data Laundry operates in 3 modes:

- Update** Will update the target fields on the records with the outcome of the cleaning and update the Data Laundry fields on the records for the Data Quality Indicators to present their results.
- Validate** Will ONLY update the Data Laundry fields on the records for the Data Quality Indicators to present their results. The target fields will not be updated.
- Preview** In Preview Mode, a csv file is being generated with the source and target data including the outcome codes which will help you review the data e.g. in Excel for manual cleaning.

Individual Records, Select the Data Laundry Button on the Detail View or use the List View Button with one record selected:

1 Lead Selected

Miguel Zele, WALKER, m.peralta@gmail.com, President, California, United States
Cleaned: 17-02-2020 15:10

CLEANED / STILL DIRTY - PHONE:NO, STATE/COUNTRY:INVALID

DATA LAUNDRY SETTINGS:

Source Field	Value	IncludeEmptyUpdate	Target Field	Value	
Id	00QA000001YLvFMAW	<input checked="" type="checkbox"/>	Id		<input checked="" type="checkbox"/>
Company	WALKER	<input checked="" type="checkbox"/>	Company	WALKER	<input checked="" type="checkbox"/>
First Name	Miguel	<input checked="" type="checkbox"/>	First Name	Miguel	<input checked="" type="checkbox"/>
Last Name	Zele	<input checked="" type="checkbox"/>	Last Name	Zele	<input checked="" type="checkbox"/>
Email	m.peralta@gmail.com	<input checked="" type="checkbox"/>	Email	m.peralta@gmail.com	<input checked="" type="checkbox"/>
Title	President	<input checked="" type="checkbox"/>	Title	President	<input checked="" type="checkbox"/>
		<input checked="" type="checkbox"/>	Job Role	CEO	<input checked="" type="checkbox"/>
		<input checked="" type="checkbox"/>	Job Function		<input checked="" type="checkbox"/>
Phone		<input checked="" type="checkbox"/>	Phone		<input checked="" type="checkbox"/>
Mobile Phone		<input checked="" type="checkbox"/>	Mobile Phone		<input checked="" type="checkbox"/>
Zip/Postal Code		<input checked="" type="checkbox"/>	Zip/Postal Code		<input checked="" type="checkbox"/>
City		<input checked="" type="checkbox"/>	City		<input checked="" type="checkbox"/>
State/Province	California	<input checked="" type="checkbox"/>	State/Province	CA	<input checked="" type="checkbox"/>
Country	United States	<input checked="" type="checkbox"/>	Country	United States	<input checked="" type="checkbox"/>

Data Laundry Status: ☒ ☒

Communication Status: ☒ ☒ ☒

Number of Fields Affected: 1 (cleaned) 0 (dirty) 1 (invalid)

Okay

Washer: Done

Image: Data Laundry with Leads in Preview Mode – Single record

Multiple Records - From the List View, you can select multiple records for processing.

Leads
View - Custom 1

5 items selected

Q Search this list...

	Data Quality Indicator	Data La...	Name	Company	State/Province	Country	Email	Title
1		Dirty	Ingmar Bergman	Pacos		SWE		Managing Partner
2		Dirty	Clodine Trouche	United Medical Systems, ...		United States		Controller
3		Dirty	Miguel Zele	WALKER	California	United States	m.peralta@gmail.com	President
4		Dirty	Victor Port	Verizon Wireless		USA	vzele@gmail.com	VP Sales
5		Dirty	Brian Bryant	Räber GmbH & Co, Helmut		Deutschland		

DataTrim Data Laundry

Running the Data Laundry for Leads

5 Leads Selected

Cancel Clean Now Validate Preview

27 Brian Bryant, Räber GmbH & Co, Helmut , Deutschland
 Cleaned: 17-02-2020 15:10
 73 Victor Port, Verizon Wireless , v.zele@gmail.com , VP Sales , USA
 Cleaned: 17-02-2020 15:10
 73 Miguel Zele, WALKER , m.peralta@gmail.com , President , California , United States
 Cleaned: 17-02-2020 15:10
 53 Clodine Trouche, United Medical Systems, Inc , Controller , United States
 Cleaned: 17-02-2020 15:10
 60 Ingmar Bergman, Pacos , Managing Partner , SWE
 Cleaned: 17-02-2020 15:10

5 LEADS PROCESSED

Clean:	Cleaned:	Cleaned/Still Dirty:	Still Dirty:	Still Dirty - with Empty Fields:
0	0	4	1	5

Preview file for Review:

Click to Download csv file... Okay

Washer: Done

Image: Data Laundry with Leads in Preview Mode - Multiple records

7 Cleaning Using Laundry Baskets

Laundry baskets are containers which you can use for running the cleaning process on larger set of records at a time.

The Basket defines the content to process, and the options for how the data should be cleaned.

The screenshot shows the 'Data Laundry Basket' interface for a basket named 'Leads'. The top navigation bar includes 'Details', 'Selection', 'Scheduling', 'Cleaning Results', and 'History'. The 'Details' tab is active, displaying 'Data Laundry Basket Details'. On the left, there's a list of fields: Basket Name (Leads), Data to Clean (Leads), Action (Update), Last Run (21-01-2020 10:42), Last Run Result (OK), and Owner (Peter Larsen). In the center, a circular gauge shows the 'AVERAGE DATA QUALITY SCORE' of 80, labeled 'Fair'. To the right, a 'New Task' section has a 'Create new...' button and a filter dropdown set to 'All time - All activities - All types'. Below this, an 'Upcoming & Overdue' section shows 'No next steps' and 'No past activity'. At the bottom right, a 'Data Laundry Cleaning Results' section shows a table with columns: Object (CLR-0000035), # Records Processed (1,570), and Cleaning Mode (Update).

7.1 Creating and Fill the Laundry Basket

Use the Selection tab to fill the basket.

The screenshot shows the 'Data Laundry Basket' interface with the 'Selection' tab active. The top navigation bar includes 'Details', 'Selection', 'Scheduling', 'Cleaning Results', and 'History'. The 'Selection' tab is active, displaying 'Fill the Basket with Leads'. On the left, there's a 'Your Selection' section with a 'Quick Select' button. Below it, a filter is applied: 'Country Equals United States'. To the right, a 'Current Selection' section shows '1,354 Leads'. Below this, a 'Your Last Basket Selection was:' section shows '1570 Leads' on 'January 21, 2020 at 09:41 AM'. At the bottom right, a 'Clean Basket' button is visible.

Reset will revert the setting to the last saved selection

Check Filter will validate the filter and indicate if the syntax contains any errors

Whenever you change the filter you can refresh the record count by clicking on the basket to the right.

Once you have identified Your selection click **Save**, and you are now ready to **clean the basket**.

The Quick Select allow you to subsegment your selection by using some common filter criteria.

Details **Selection** Scheduling Cleaning Results History +

★ Fill the Basket with Leads

Reset Check Filter Save

Your Selection

Quick Select

Include only Leads with Last Cleaning Status:

Available

<None>
Cleaned
Dirty

Chosen

Include only Leads Owned by:

Include only Leads Modified since:

[21-01-2020]

Include only Leads Created since:

[21-01-2020]

Clean Basket

Current Selection:

1,354 Leads

Your Last Basket Selection was:

1570 Leads

January 21, 2020 at 09:41 AM

Use the Last Cleaning Status to e.g. only clean those records which previously was identified as Dirty, but which you in the mean time have updated manually.

7.2 Clean the Basket

Once you have filled your basket, you can start the Laundry, by clicking the **Clean Basket** (link/button)

DataTrim Data Laundry

Leads - (Leads)

Ran Last time: 21-01-2020 10:42 • Updated 21-01-2020 14:58

★ Fill the Basket with Leads

Current Selection:

1,354 Leads

Your Last Basket Selection was:

1570 Leads

January 21, 2020 at 09:41 AM

Load Washer →

⚙️ Action: Update

Start

Ready

Once the Washer is loaded, you can **start** the Laundry.

7.2.1 Laundry Options

Notification

By clicking the Setup wheel, you can change the Action as well as the notification settings for this run.

Notify Me: Get a Notification email once the process is complete.

Notify Basket Owner: Send a Notification Email to the Owner of the Basket

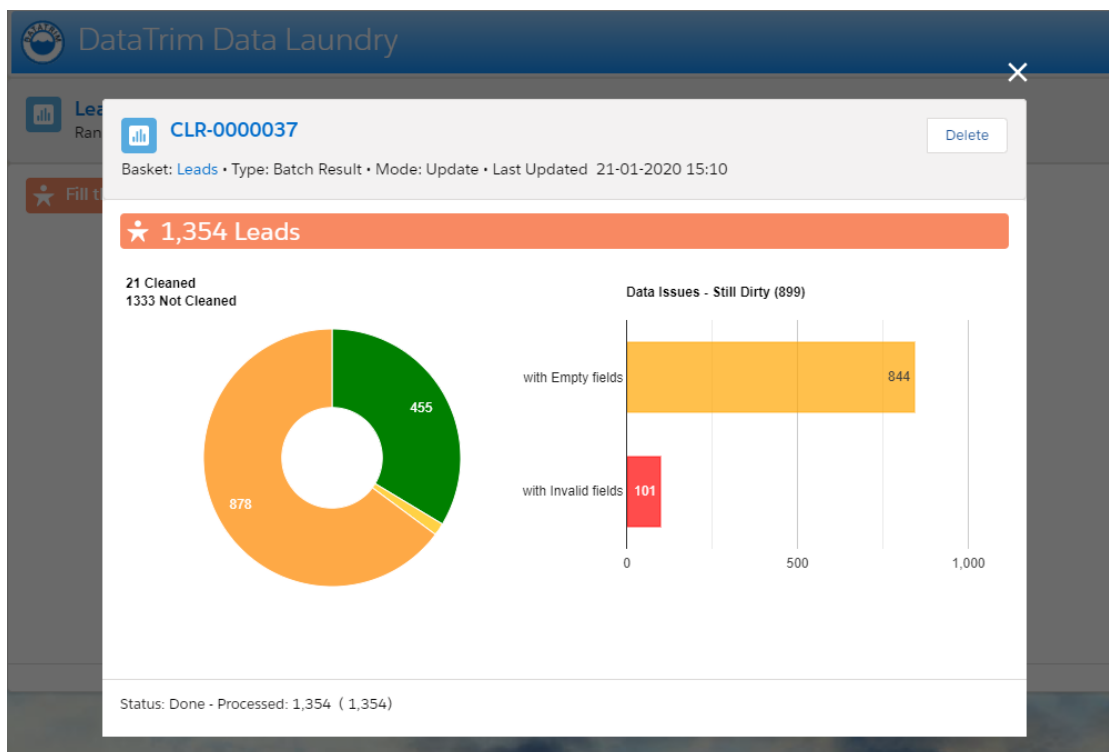
Action: Change the Action for the Basket (Update, Validate, Preview)

Click **Apply** to apply these intermediate settings for this Data Laundry batch.

7.2.2 Laundry Status / Cleaning Result

The screen below will display while the Laundry is processing the Basket, and updates regularly.

Once the Laundry is complete, you can download the data to a csv file (Action: Preview Only).



7.3 Review Data in Excel

When processing a Basket with action: Preview, a csv file is being generated with the outcome of the cleaning.

This csv file is stored as an attachment to the Data Laundry Cleaning Result, and can later be downloaded.

The csv file will contain the Original Data, the Clean data and a list of quality indicators, helping you to identify what issues the Data Laundry found for each record.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
	Id	Company	FirstName	LastName	Email	Title	Phone	Mobile	State	Country	DL_Compi	DL_Street	DL_City	DL_Postal	DL_State	DL_Counti	DL_Saluta
1	00QA0000	Sprint Wir	Robert	Nixon	r.stodola@gmail.com					United St	Sprint Wireless					United States	
2	00QA0000	SRT Comm	Allen	Stodola	a.fine@gmail.com					United St	SRT Communications					United States	
3	00QA0000	Sunbelt T	Michael	Fine	m.king@gmail.com					United St	Sunbelt Telecommunications, Inc.					United States	
4	00QA0000	Ä-BB-Infra	Barry	Dainio	b.miller@gmail.com					United St	Ä-BB-Infrastruktur Bau AG					United States	
5	00QA0000	RIZZO CO	Heidi	Robbie	h.bryant@gmail.com					United St	RIZZO CONSULTING, INC					United States	
6	00QA0000	Accu-Tech	Francisco	Miller	f.arpide@gmail.com					United St	Accu-Tech Corporation					United States	
7	00QA0000	Qwest	Jeff	Asta	j.bassett@gmail.com					United St	Qwest					United States	
8	00QA0000	Qwest	John	Bassett	j.mccann@gmail.com					United St	Qwest					United States	
9	00QA0000	Qwest	Jean	McCann	j.viveret@gmail.com					United St	Qwest					United States	
10	00QA0000	Rex Electr	Randy	Viverette	r.robbe@gmail.com					United St	Rex Electric					United States	
11	00QA0000	RIZZO CO	Heidi	Robbie	h.bryant@gmail.com					United St	RIZZO CONSULTING, INC					United States	
12	00QA0000	University	Barry	Pavlovski	b.zegel@gmail.com					United St	University of Cincinnati					United States	
13	00QA0000	US ARMY	David	Zegel	d.swoish@gmail.com					United St	US ARMY					United States	
14	00QA0000	Varian, In	Mark	Swoish	m.sawicki@gmail.com					United St	Varian, Inc.					United States	
15	00QA0000	Verizon	David	Sawicki	d.rayle@gmail.com					United St	Verizon					United States	
16	00QA0000	Verizon W	Leslie	Rayle	l.carr@gmail.com					United St	Verizon Wireless					United States	
17	00QA0000	University	Barry	Pavlovski	b.zegel@gmail.com					United St	University of Cincinnati					United States	
18	00QA0000	US ARMY	David	Zegel	d.swoish@gmail.com					United St	US ARMY					United States	
19	00QA0000	Varian, In	Mark	Swoish	m.sawicki@gmail.com					United St	Varian, Inc.					United States	

The csv file also contains the original record Id, so that you can use this file to update the data in salesforce directly by using e.g. the salesforce Data Loader.

See Appendix: C for detailed explanation of the cvs file content.

7.4 Data Laundry Basket -Page Layout

Page layout for Data Laundry Basket default detail view:

8 Scheduling

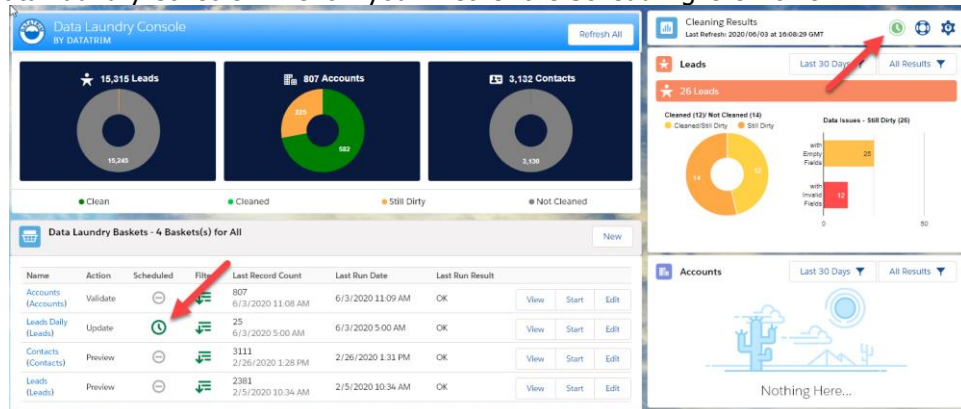
As described above you can clean the baskets individual by starting the Data Laundry. This is convenient when you start to clean up your data, then you are in control of which basket you clean, in which order etc.

But once your data is clean, you might want to have a process where your data is cleaned/validate on a regular (daily) basis.

The Scheduling feature leverages the Salesforce Scheduled Job function to allow you to run an Apex Job according to a schedule.

8.1 Activate the Scheduling from the Data Laundry Setup.

The Data Laundry Console will show you whether the Scheduling is On or OFF

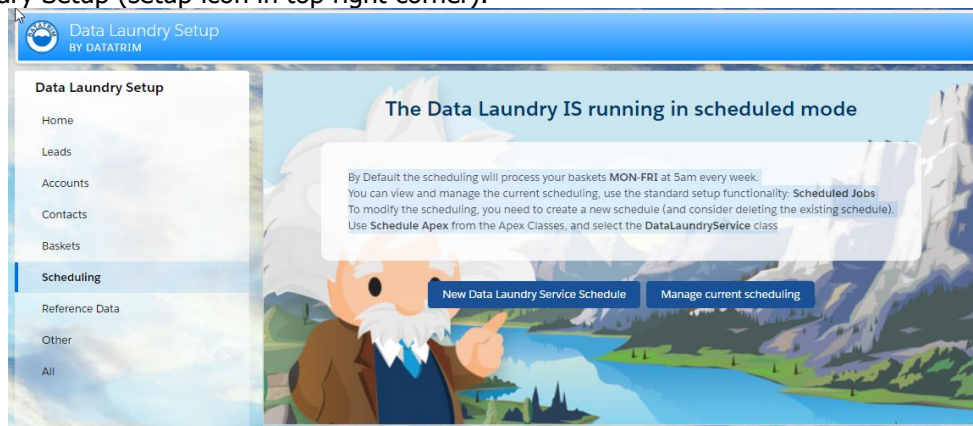


A **Green** clock in the top right corner, indicates that the Scheduling is ON.

A **Red** clock in the top right corner, indicates that the Scheduling is OFF.

In the list of Laundry Baskets, a **green** clock indicates that this basket is included in the scheduling. The **grey** barred circle indicates that the basket is NOT part of the scheduling.

You can activate the scheduling from the Scheduling Tab on the Basket or from the Data Laundry Setup (setup icon in top right corner).²



² You can also view and manage the current scheduling using the standard Salesforce setup functionality

The default scheduling will process your baskets MON-FRI at 5am every week.

To modify the scheduling, you need to create a new schedule (and consider deleting the existing schedule).

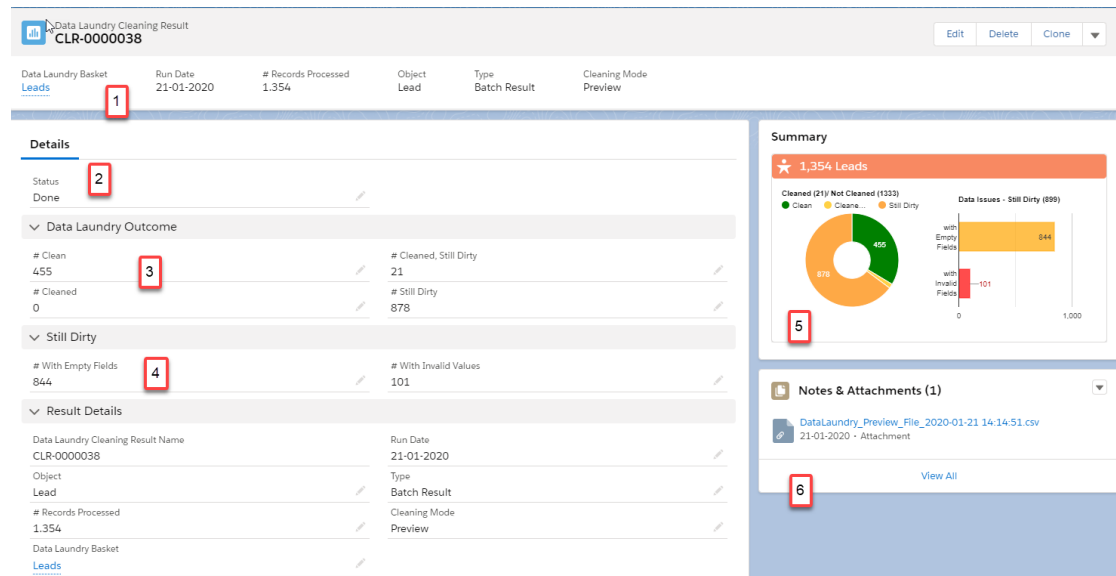
Use Schedule Apex from the Apex Classes, and select the DataLaundryService class
-or click the "New Data Laundry Service Schedule"-button on the Data Laundry Setup page.

NOTE: You cannot update the scheduled jobs. You need to delete the existing job and then schedule it again.
To Delete existing job follow below step:
Setup -> Scheduled Job -> Job Name -> Delete

Now to schedule it again:
Setup -> Apex Classes -> Click on Schedule Job -> Select your class name and give other values

9 Data Laundry Cleaning Result

The Data Laundry Cleaning Result is the summary of a cleaning process, whether the cleaning was done in Batch or individually using the List and Detail Buttons.



1. Basic details about what, when and how.
2. Status: Done / Running
3. Data Laundry Outcome
 - #Clean: Number of records already clean, and not changed, i.e. NOT CLEANED and NOT DIRTY
 - #Cleaned: Number of Records which has been Cleaned/Modified
 - #Cleaned/Still Dirty: Number of Records which has been Cleaned/Modified but which are STILL DIRTY
 - #Still Dirty: Number of Records which were NOT CLEANED and but which are DIRTY
4. Still Dirty detailed
 - #With Empty Fields: Number of dirty records with EMPTY fields
 - #With Invalid Values: Number of dirty records with Invalid values in one or more fields

Note that a record can have both Empty and invalid values, thus count in both categories.
5. Visual representation of Data Laundry Outcome and records Still Dirty
6. For Cleaning in Preview Mode, the outcome is available as an attachment to download.

10 INSTALLATION

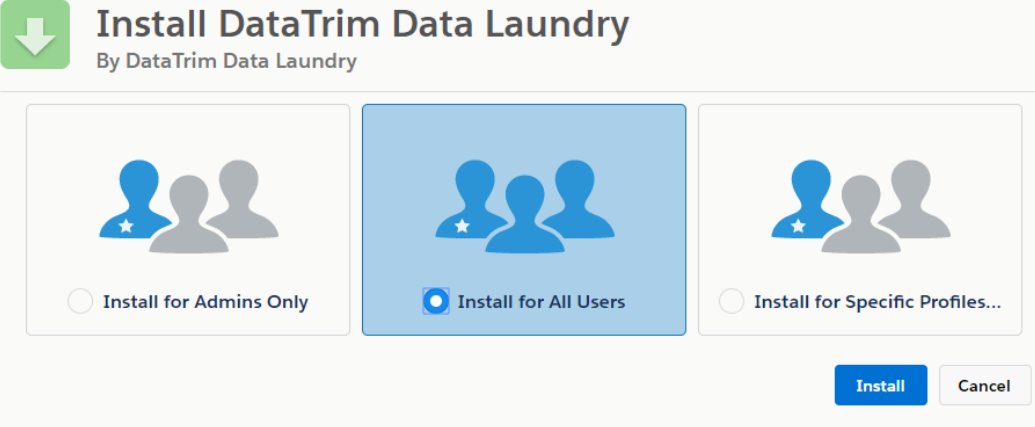
10.1 Install the Application

Our solution is 100% integrated into salesforce, so there is no software for you to install and maintain on your PC or local servers, and no external services which you need to link in. The installation will insert the DataTrim Data Laundry App and Tabs into your salesforce application and all you need in order to use the application will be available from within salesforce.

Access Control

During the Installation you will be asked a number of questions. For access control you can decide to enable the application for all, for admin only or to a select group of users.

We recommend that you enable it for ALL.



App Name	Publisher	Version Name	Version Number
DataTrim Data Laundry	DataTrim Data Laundry	January 2020 - DL	1.10

[Additional Details](#) [View Components](#)

Click Install to continue...

Note: You can always expand or limit the scope at a later stage, but if you plan to utilize the Data Quality Indicators components for the Account, Contact and/or Lead page layout it is easiest to grant access for all users at this point of the process.

You will now be presented with the Welcome screen with information about the installed version.

In case the installation exceeds the time limit, you will get a message like the below.

To see the Welcome message, go to Setup and find installed packages. From the detail page for the installed package you can **Click the View Link** to get the Welcome Page.

The Welcome page can also be accessed from the Data Laundry Console Tab.



Install DataTrim Data Laundry

By DataTrim Data Laundry



This app is taking a long time to install.

You will receive an email after the installation has completed.

Done

App Name	Publisher	Version Name	Version Number
DataTrim Data Laundry	DataTrim Data Laundry	January 2020 - DL	1.10

Once the installation is complete you should now have the following details in your Installed Package section

Installed Packages							
Action	Package Name	Publisher	Version Number	Namespace Prefix	Status	Allowed Licenses	Used Licenses
Uninstall Manage Licenses	DataTrim Data Laundry	DataTrim Data Laundry	1.10	DataLaundry	Trial	1	1

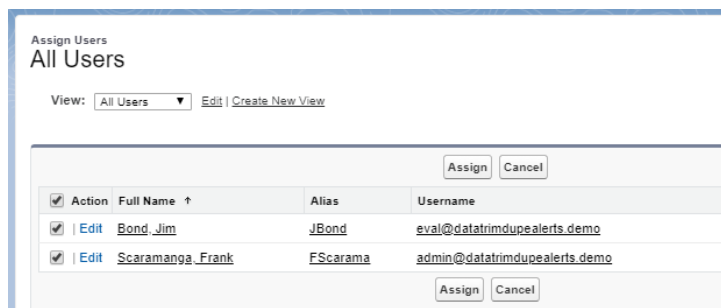
The Trial version comes with 1 license, which automatically is assigned to you, but when you get more licenses you can **Click the Manage Licenses** to assign licenses to individual users. On the package detail page you can **Click on the View Link** to see the Welcome page.

Once the installation and initialization is done you will need to add the Data Laundry fields to the Lead, Contact and Account Page layouts, and add the Data Laundry Buttons to the Detail Page and List Views

10.1 Permission Sets

The Data Laundry Package comes with a Permission Set which should be assigned to the users who need access to edit/create baskets etc.

To allow your users to, see the Data Quality Indicators, clean the Leads, Contacts and Accounts, make sure that each user has this Permission Set assigned to them.



10.2 Add Data Quality Indicators and Fields

Fields are included for Leads, Accounts and Contacts. You can add these to page layouts, List Views and Compact Layouts as illustrated below.

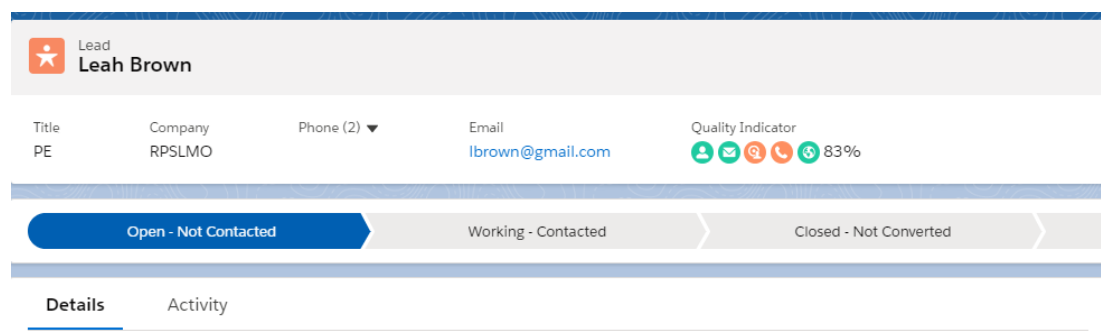
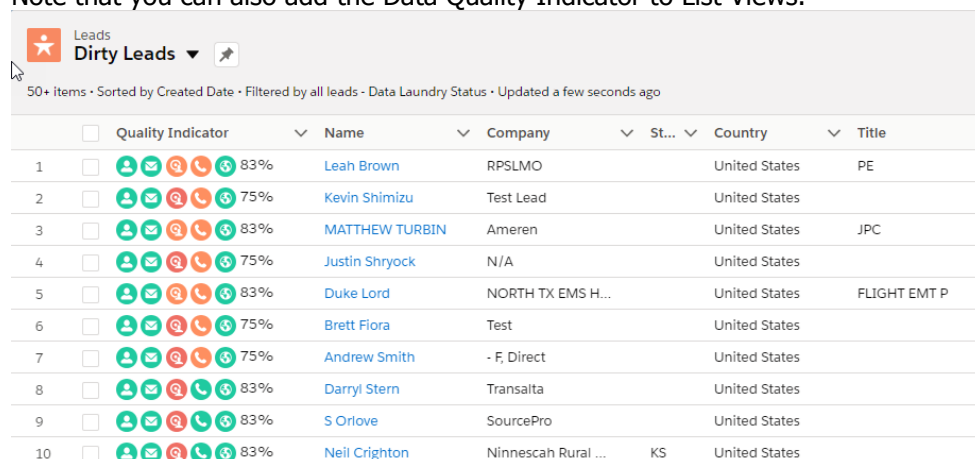


Image: Data Quality Indicator on Detail Page

Note that you can also add the Data Quality Indicator to List Views.



Quality Indicator	API name: DataLaundry__Quality_Indicator__c
	Type: Formula (Text)
	Formula which concatenates a series of images based on the content of the Data Laundry Outcome field (see below)
Quality Score (%)	API name: DataLaundry__Quality_Score__c
	Type: Formula (Percent) based on the content of the Data Laundry Outcome field (see below)
	Formula which calculate a score (0-100) based on the content of the Data Laundry Outcome field (see below)

As these fields are part of the managed package, you cannot modify these formulas, so to create your own Quality Indicator and score, you can simply create new fields. copy/paste the Formula and make the modifications you want.

The Data Laundry Package contains a few additional fields used to store the output from the cleaning process Leads, Contacts and Accounts.

Data Laundry Outcome	API name: DataLaundry__DataLaundry_OutcomeCodes__c
	Type: Text Area (255)
	This field contains a semicolon (;) formatted list of outcome codes indicating for validity, empty values etc.
Data Laundry Status	API name: DataLaundry__DataLaundry_Status__c
	Type: Picklist
	Overall outcome of the Data Laundry Process. Values: OK –All is OK, nothing was changed Cleaned –All is OK, some fields were modified and cleaned Dirty = Issues found, some fields might have been modified and Cleaned
Last Data Laundry Date	API Name: LastDataLaundryDate__c
	Type: Date/Time
	Time for the last Data Laundry process
Skip Data Laundry	API Name: DataLaundry__skip__c
	Type: Checkbox
	When enabled this record will be excluded from the data laundry processing. Use this option, if you want to avoid that the record is cleaned and updated e.g. pending synchronizations, workflow rules etc.


▼ Data Laundry	
Data Quality Indicator  30	Data Laundry Status ⓘ Dirty
Data Quality Score 80 %	Data Laundry Outcome Title:Incomplete, Phone:No
Last Data Laundry Date 17-02-2020 15:16	Skip Data Laundry ⓘ <input type="checkbox"/>

Image: Example of fields places on the Lead Detail Page.

10.3 Add Job Role and Job Function fields for Lead and Contact

2 picklist fields are included to support the mapping of Job Titles into quantitative values.

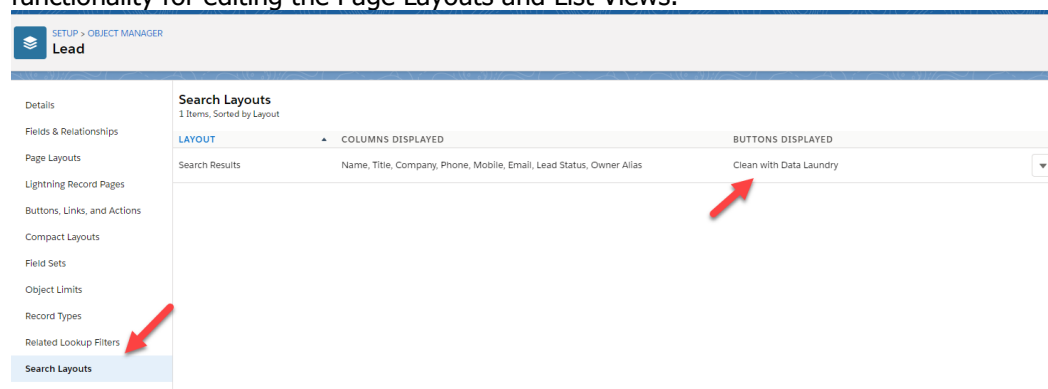
Job Role	API name: DataLaundry__Job_Role__c
	Type: Picklist
	The Job Role indicates which role a person has in the organization (e.g. Director, Manager, Assistant)
Job Function	API name: DataLaundry__Job_Function__c
	Type: Picklist
	The Job Function indicates to which part of the organization the person belongs (e.g. Finance, IT, Procurement, Sales)

You can add these 2 fields to the Page Layout of the Lead and/or Contact.

10.4 Add Data Laundry Buttons

The Data Laundry Package contains a List button and a Detail Button for Leads, Contacts and Accounts.

To add these buttons to the Detail View and List Views use the standard salesforce functionality for editing the Page Layouts and List Views.



11 Setup (Optional)

The App is preconfigured to clean data using a set of default settings.

You should only change the setup if you deliberately want the cleaning to be different than the default.

From the Data Laundry Console, you can access the setup for the Data Laundry by clicking on the Setup icon in the top right corner.

The Data Laundry Setup Page, provides access to all the parameters which controls how the laundry is running, as well as access to the user guide, etc.

11.1 Cleaning Process (Lead/Accounts/Contacts)

11.1.1 Fields to Clean

Specification for fields accessed and processed by the Data Laundry

SourceField	API Name of field in salesforce Example: Company BillingStreet Email2__c
Fieldtype	Value which indicates to the Data Laundry what the field contains Valid Values: Id Salesforce Record Id Company Name of Company, Account, Organization FirstName First Name LastName Last Name Title Job Title Phone Phone Phone2 Alternative Phone, fax etc. Mobile Mobile Phone Street Street, Mailing Street, Billing Street etc. City City, Mailing City, Billing City etc. PostalCode Postal Code, Mailing Postal Code, Billing Postal Code etc. State State, Mailing State, Billing State etc. Country Country, Mailing Country, Billing Country etc. Website Website, URL
Action	Value which indicates what action is applied to the field Valid Values: Ignore No action, use e.g. for Record Id Clean Include field Value in Cleaning process
DirtyIfEmpty	Boolean field which is used to mark the record as Dirty, if the field is empty True Flag record as Dirty if this field is Empty False Do not Flag this record as Dirty even if this field is Empty

11.1.2 Fields to Update

Specification for how the output from the Laundry is mapped to the fields in salesforce

LaundryField	Data Laundry Field Name Name (See Appendix for full list of fields) Examples: CompanyName Website
Operation	Value which indicates what action is applied to the field Valid Values: Ignore No action, use e.g. for Record Id Update Updates the field in salesforce (Null values are not applied) Replace Updates the field in salesforce (Null Values are applied)
TargetField	API Name of field in salesforce to Update True Flag record as Dirty if this field is Empty False Do not Flag this record as Dirty even if this field is Empty
Example: Name BillingStreet Phone	

11.2 Baskets

Settings for processing of baskets.

These settings can be changed directly on the Clean Basket Page

Notify Basket Owner Send Notification Email to Basket Owner once the Basket has completed

Notify User Send Notification Email to the current user once the Basket has completed

Batch Size When processing a large volume of records the batch is broken down into smaller sets of records.
This Value sets the size of these smaller blocks.
Default Value is: 50
Max: 200
Setting this value too high, may cause the cleaning to violate the salesforce governor rules. It may therefore be necessary to decrease this value to avoid these errors.

Custom Quality Score fields.

By default, the Average Data Quality Score for each basket is calculated based on the formula field provided with the installed package. See *Appendix G – Data Quality Score and Data Quality Indicator* for more details

In case you want to implement your own formula for calculating the quality score for the Leads, Contacts and Accounts, you can create new fields: formula(percent), and reference them below.

Empty fields below mean that the Average Scores are calculated on the default fields (*DataLaundry__Quality_Score__c*).

Use API Name for field e.g.: (*Lead_Quality_Score__c*)

11.3 Reference Data

The DataTrim Data Laundry is packed with reference data, which means that you benefit from years of accumulated best practices and standards.

Most of these reference data can be modified or replaced by your own lists etc. For more about this see below, or reach out to us for help and guidance.

11.3.1 Local Country

A number of cleaning algorithms like the Phone number cleaning can provide both an international format and a national format. Adding a local country, will allow you to mix the algorithms so that you use the national formats for your local country and international format for all others.

Use 2-character ISO-3166 code values.

You can list multiple countries by listing them as comma separated values, e.g.;

US,CA

11.3.2 Custom Country Values

By Default, country values are based on ISO standards, but for some reason you may have your own variations, e.g. UK instead of United Kingdom, USA instead of United States of America

List your variations in a semi-colon (;) separated list lead by the 2-character ISO code for the Country followed by your custom value, e.g.:

US=USA;GB=UK

11.3.3 Invalid Emails

In many CRM databases, the email fields are mandatory, and so to create new leads and contacts, historically your users or data admins may have inserted "dummy" values in order to be able to create new leads and contacts without an actual email address.

These "dummy" values should be considered invalid although the structure and everything makes them look like real email addresses.

You can list multiple values by listing them as comma separated values, e.g.;

Note that you can list entire email addresses like: *unknown@unknown.com*, or partial values like *unknown*, *unknown@*, *@default.com* etc.

11.3.4 Invalid Job Titles

The Data Laundry analyses and records the Job Title into Job Function and Job Role, using a set of reference values. Even though this reference list isn't comprehensive enough to recode all Job Titles, the fact that the Job Function and Job Role cannot be derived, doesn't make the Job Title Invalid.

BUT there are certain values which will classify the Job Title as Invalid. The Data Laundry already have its own list of values built in from day one, but should you need it, you can add extra values here to extend this reference list.

You can list multiple values by listing them as comma separated values, e.g.;

unknown,tbd,xxx

11.3.5 Custom Country Recode values

The Data Laundry uses the ISO-3166 standards for Country coding (same as the salesforce standards).

In the custom Country Field above you can change the values being stored, if your country list is different from the standard values.

The Recode Values, are values use to recognize non standardizes values, and recode them into standard values, e.g. England should be recognized and standardized into GB (2-character code and Great Britain for Country Name)

In your database you may have country values from other standards, or language specific country names which the Data Laundry doesn't yet recognize.

The Data Laundry enables you to create a list of additional recodes and add them to the existing reference data.

The additional records should be stored as a static resource.

Name the Static resource in the field

Please contact us for more details on the structure and format of the static resource file.

11.3.6 Custom State Recode values

State values are cleaned based on recommendations from the postal offices of the individual countries.

The Data Laundry has reference data which helps recoding free values into these standardized values. E.g. Calif. will be recoded into CA (for California)

In your database you may have state which the Data Laundry doesn't yet recognize.

The Data Laundry enables you to create a list of additional recodes and add them to the existing reference data.

The additional records should be stored as a static resource.

Name the Static resource in the field

Please contact us for more details on the structure and format of the static resource file.

11.3.7 Custom Job Title Recode values

Job Titles are recoded into pick-list values for Job Role and Job Function

The Data Laundry has reference data which helps recoding business card titles into standardized values for Job Role and Job Function.

In your database you may have Job Titles which the Data Laundry doesn't yet recognize.

The Data Laundry enables you to create a list of additional recodes and add them to the existing reference data.

The additional records should be stored as a static resource.

Name the Static resource in the field

Please contact us for more details on the structure and format of the static resource file.

11.4 Other

Debug Enabled

If checked, debug is enabled, and certain screens will present debug information.

Enabling Debug mode, may slow down the performance of the Data Laundry.

Use this only when instructed by DataTrim Support.

Appendix A – Cleaning algorithms

This list outlines the basic cleaning algorithms performed per field type.

This list is not exhaustive, and our cleaning algorithms are updated regularly based on client feedback.

So don't hesitate to contact us with your validation rules and ideas.

Field Type	Description
CompanyName	CleanString: Remove invalid values, trim and clean up punctuations, commas etc.
Street	CleanString: Remove invalid values, trim and clean up punctuations, commas etc.
City	CleanString: Remove invalid values, trim and clean up punctuations, commas etc.
PostalCode	CleanPostalCode: Remove invalid values, trim and clean up punctuations, commas etc. Format Postal code to country specific postal format.
State	CleanState: Remove invalid values, trim and clean up punctuations, commas etc. Use Reference data to recode State values into standardized values. Where the State field is blank, the data laundry will attempt to identify the State from the country, postal code or phone where reference data is available.
Country	CleanCountry: Remove invalid values, trim and clean up punctuations, commas etc. Where the country field is blank, the data laundry will attempt to identify the country from Phone, State and Postal Code fields. Use Reference data to recode Country values into ISO 3166 2-character code Map 2-character ISO code to standardized country name values Custom County Name values are supported.
Salutation	TBD
FirstName	CleanStringName: Remove invalid values, trim and clean up punctuations, commas etc. Remove salutation, attention etc.
LastName	CleanStringName: Remove invalid values, trim and clean up punctuations, commas etc.
Title	CleanJobTitle: Remove invalid values, trim and clean up punctuations, commas etc. Using the Data Laundry reference data, the Job Title will be mapped into generic Job Function and Job Role values, these values will be applied to the 2 Data Laundry picklist fields: DataLaundry__Job_Function__c and DataLaundry__Job_Role__c
Email	CleanString: Remove invalid values, trim and clean up punctuations, commas etc.
Phone	CleanPhone: Phone number is compared with the phone number structures and valid length(s) for the provided country. The phone numbers will be formatted to meet local standards and international prefixes will be amended.
Phone2	CleanPhone: Phone number is compared with the phone number structures and

	valid length(s) for the provided country. The phone numbers will be formatted to meet local standards and international prefixes will be amended.
Mobile	CleanPhone: Phone number is compared with the phone number structures and valid length(s) for the provided country. The phone numbers will be formatted to meet local standards and international prefixes will be amended.:
Website	CleanString: Remove invalid values, trim and clean up punctuations, commas etc

Appendix B – Validation Rules

This list outlines the basic validates performed per field type.

This list is not exhaustive, and our validation rules are updated regularly based on client feedback.

So don't hesitate to contact us with your validation rules and ideas.

Field Type	Description
Country	A Country is considered invalid if one of the following criteria applies: <ol style="list-style-type: none"> 1. Equals: . (dot) 2. If value is not in the list of standardized country values.
State	A State is considered invalid if one of the following criteria applies: <ol style="list-style-type: none"> 1. Equals: . (dot) 2. If value is not in the list of standardized state values for the given country
City	A City is considered invalid if one of the following criteria applies: <ol style="list-style-type: none"> 1. Contains: . (dot) 2. Contains @ 3. Contains Digits
Postal Code	A Postal Code is considered invalid if one of the following criteria applies: <ol style="list-style-type: none"> 1. Contains: . (dot) 2. Contains no digits 3. Does not comply to the structure of the postal code for the given country.
Email	<p>An Email is considered invalid if one of the following criteria applies:</p> <ol style="list-style-type: none"> 1. Does not contains @ 2. Contains a space 3. Does not contain: . (dot) 4. Contains non-ascii characters 5. Contains invalid characters 6. Contains values from Reference list: Invalid_Email_Contains_Match_List (Examples: unknown, tbd@, none@, bounce, noreply...) <p>In addition, the Email is scanned to determine whether the Email Type is:</p> <ol style="list-style-type: none"> 1. Generic - Contains values from Reference list: Clean_EmailType_Generic_Name_List (Examples: info, sales, office, webmaster...) 2. Generic – if the Email name (part before the @), doesn't have any correlation with the First and Last Name Example: John Jones, ff22@facebook.com 3. Non-Company – Email domain contains values from Reference list: Clean_EmailType_NonCompany_domain_List (Examples: yahoo, gmail, hotmail, aol...)
Website	A Website is considered invalid if one of the following criteria applies: <ol style="list-style-type: none"> 1. Contains: @ 2. Contains a space 3. Does not contain: . (dot) 4. Contains non-ascii characters

Phone	<p>A Phone number is considered invalid if one of the following criteria applies:</p> <ol style="list-style-type: none"> 1. Have no Digits 2. Contains characters other than exceptional values like 'ext' to represent extension number 3. The number of digits is different from the number of characters in the given country's numbering plan 4. If all digits are the same, e.g. (555) 555-5555
First Name	<p>A First Name is considered invalid if one of the following criteria applies:</p> <ol style="list-style-type: none"> 1. Contains: @ 2. Contains digits 3. Is a Salutation 4. Equals: . (dot) 5. Contains values from Reference list: Invalid_Name_Contains_Match_List (<i>Examples: unknown, [Not Provided], unsubscribe...</i>) 6. Equals values from Reference list: Invalid_Name_Equals_Match_List (<i>Examples: none...</i>) <p>Name is also Flagged as invalid if First Name and Last Name are equal.</p>
Last Name	<p>A Last Name is considered invalid if one of the criteria for First Name applies or if one of the following criteria applies:</p> <ol style="list-style-type: none"> 1. Is a 1-character String <p>Name is also Flagged as invalid if First Name and Last Name are equal.</p>
Company Name	<p>A Company Name is considered invalid if one of the following criteria applies:</p> <ol style="list-style-type: none"> 1. Equals: . (dot) 2. Does not match the name of the person (first + last name) 3. Contains values from Reference list: Invalid_Company_Contains_Match_List (<i>Examples: unknown, [Not Provided], self, www...</i>)
Title	<p>The Title is considered invalid if one of the following criteria applies:</p> <ol style="list-style-type: none"> 1. Contains: @ 2. Equals: . (dot) 3. Starts with values from Reference list: Invalid_Job_Title_Starts_With_list (<i>Examples: ?, -, #, *, 0, unknown, tbd...</i>)

Appendix C – Data Laundry Output File

The Data Laundry Output File, contains the original data, the cleaned data and a number of indicators to help identify the issue identified on each row.

Field Label	Description	Type
Id	Salesforce Record Id	Id
Company	Original Company Name	String
FirstName	Original First Name	String
LastName	Original Last Name	String
Email	Original Email	String
Title	Original Title	String
Phone	Original Phone	String
Mobile	Original Mobile	String
State	Original State	String
Country	Original Country	String
DL_CompanyName	Cleaned Company Name	String
DL_Street	Cleaned Street	String
DL_City	Cleaned City	String
DL_PostalCode	Cleaned Postal Code	String
DL_State	Cleaned State	String
DL_Country	Cleaned Country	String
DL_Salutation	Cleaned Salutation	String
DL_FirstName	Cleaned First Name	String
DL_LastName	Cleaned Last Name	String
DL_Title	Cleaned Title	String
DL_JobRole	Cleaned Job Role	String
DL_JobFunction	Cleaned Job Function	String
DL_Email	Cleaned Email	String
DL_EmailType	Cleaned Email Type Values: <i>Generic</i> or <i>Non-Company</i>	String
DL_Phone	Cleaned Phone Formatted with international prefix, except for Local Country(s)	String
DL_PhoneLocal	Cleaned Phone Local Formatted without international prefix	String
DL_Mobile	Cleaned Mobile Formatted with international prefix, except for Local Country(s)	String
DL_MobileLocal	Cleaned Mobile Local Formatted without international prefix	String
DL_Phone2	Cleaned Phone2 Formatted with international prefix, except for Local Country(s)	String
DL_Phone2Local	Cleaned Phone2 Local Formatted without international prefix	String
C_Cleaned	Result Cleaned	Boolean
C_StillDirty	Result Still Dirty	Boolean
C_Valid	Result Valid	Boolean

E_InvalidCompany	Data Quality Indicator: Invalid Company	Boolean
E_InvalidCity	Data Quality Indicator: Invalid City	Boolean
E_InvalidPostalcode	Data Quality Indicator: Invalid Postal code	Boolean
E_InvalidState	Data Quality Indicator: Invalid State	Boolean
E_InvalidStateCountry	Data Quality Indicator: Invalid State Country Is true if either E_InvalidState or E_InvalidCountry is true	Boolean
E_InvalidCountry	Data Quality Indicator: Invalid Country	Boolean
E_InvalidWebsite	Data Quality Indicator: Invalid Website	Boolean
E_InvalidName	Data Quality Indicator: Invalid Name	Boolean
E_InvalidEmail	Data Quality Indicator: Invalid Email	Boolean
E_InvalidPhone	Data Quality Indicator: Invalid Phone Is true if any one of the phone numbers are invalid	Boolean
E_InvalidTitle	Data Quality Indicator: Invalid Title	Boolean
C_NoFieldsCleaned	Number of Cleaned Fields	Number
C_NoFieldsInvalid	Number of Invalid Fields	Number
C_NoFieldsEmpty	Number of Empty Fields	Number
E_EmailAble	Data Quality Indicator: EmailAble	Boolean
E_PhoneAble	Data Quality Indicator: PhoneAble	Boolean
E_Deliverable	Data Quality Indicator: Deliverable	Boolean
E_Status	Over All Status Values: <i>OK</i> All fields OK, no changes. <i>Cleaned</i> All fields OK, one or more fields have been cleaned. <i>Dirty</i> Issues found, one or more fields might have been cleaned.	String
C_TimeStamp	Time for processing	Data/Time

Appendix D – Permissions Set

SETUP
Permission Sets

Permission Sets [Help for this Page](#)

On this page you can create, view, and manage permission sets.

In addition, you can use the SalesforceA mobile app to assign permission sets to a user. Download SalesforceA from the App Store or Google Play: [iOS](#) | [Android](#)

All Permission Sets | [Edit](#) | [Delete](#) | [Create New View](#)

[New](#) | [Filter](#) | [A](#) | [B](#) | [C](#) | [D](#) | [E](#) | [F](#) | [G](#) | [H](#) | [I](#) | [J](#) | [K](#) | [L](#) | [M](#) | [N](#) | [O](#) | [P](#) | [Q](#) | [R](#) | [S](#) | [T](#) | [U](#) | [V](#) | [W](#) | [X](#) | [Y](#) | [Z](#) | [Æ](#) | [Ö](#) | [Ä](#) | [Other](#) | [All](#)

Action	Permission Set Label ↑	Description	License
Clone	Data Laundry		

Assigned Apps

Assigned Apps

App Name	Installed Package
DataLaundry DataTrim Data Laundry (DataLaundry__DataTrim_DataLaundry)	DataTrim Data Laundry

Object Settings

[Permission Set Overview](#) > **Object Settings**

Object Settings

Object Name	Object Permissions	Total Fields	Tab Settings
Data Laundry	--	--	Visible
Data Laundry Baskets	Read, Create, Edit, Delete, View All, Modify All	17	Visible
Data Laundry Cleaning Results	Read, Create, Edit, Delete, View All, Modify All	17	Visible

Apex Class Access (All Apex Classes with prefix: DataLaundry)

[Permission Set Overview](#) > **Apex Class Access**

Apex Class Access

Apex Class Name	Installed Package
DataLaundry DataLaundry	DataTrim Data Laundry
DataLaundry DataLaundry_Account_Controller	DataTrim Data Laundry
DataLaundry DataLaundry_Basket_Extension	DataTrim Data Laundry
DataLaundry DataLaundry_Batch	DataTrim Data Laundry
DataLaundry DataLaundry_CleaningResultDetail	DataTrim Data Laundry
DataLaundry DataLaundry_Console_Controller	DataTrim Data Laundry
DataLaundry DataLaundry_Contact_Controller	DataTrim Data Laundry
DataLaundry DataLaundry_Lead_Controller	DataTrim Data Laundry

VisualForce Page Access (All Visualforce Pages with prefix: DataLaundry)

[Permission Set Overview](#) > **Visualforce Page Access**

Visualforce Page Access

Visualforce Page Name	Installed Package
DataLaundry DataLaundry_Account	DataTrim Data Laundry
DataLaundry DataLaundry_CleanBasket	DataTrim Data Laundry
DataLaundry DataLaundry_CleaningResult_Compact	DataTrim Data Laundry
DataLaundry DataLaundry_CleaningResultDetail	DataTrim Data Laundry
DataLaundry DataLaundry_Console	DataTrim Data Laundry
DataLaundry DataLaundry_Contact	DataTrim Data Laundry
DataLaundry DataLaundry_DeleteCleaningResults	DataTrim Data Laundry
DataLaundry DataLaundry_Home	DataTrim Data Laundry
DataLaundry DataLaundry_Lead	DataTrim Data Laundry
DataLaundry DataLaundry_Setup	DataTrim Data Laundry

Appendix E – Job Title Coding

2 Picklist Value sets included in the Managed Package

Job Roles

Job Role	Description/Examples
Assistant	Assistant, Secretary, Asistente, PA
Analyst	Analyst, Analyste, Analytiker
CEO	Chief Executive Officer, President, General Manager
CFO	Chief Financial Officer
CIO	Chief Information Officer
COO	Chief Operation Officer
CTO	Chief Technology Officer
Director	Director, Gerente, Directeur, Direktorin
Manager	Manager, Mgr., Chef, Jefe, Supervisor
Specialist	Consultant, Expert, Engineer, Developer
Unknown	
Vice President	Vice President, VP, SVP, EVP, Sr. VP etc.
Assistant	Assistant, Secretary, Asistente, PA

Job Functions

Job Function	Description/Examples
Accounts Payable	Accounts Payable, A/P
Communications/PR	Communication, Public Relations, Investor Relations
Compliance	Audit, Data Privacy, Regulatory, Security
Finance	Controllers, Treasury, Accounting
HR	Human Resources, Travel Manager, Payroll
IT	Information Technology, Systems, Network, Infrastructure, CRM, ERP etc.
Legal	Advocates, General Counsel, Contracts, Risk
Marketing	Marketing, Creative, Advertising, Lead and prospect Management, web
Operations	Operations, Shared services, Administration
Procurement	Procurement, Buyers, Purchasing, Sourcing, Supply Chain
Sales	Sales, Ventas, Commercial
Services	Customer Support, Host, Customer Care, Delivery

Appendix F – Country List

The list of country values used by the DataTrim Data Laundry is based on the ISO3166 standard, with a few variations as listed below.

Note that if you want to use another value than the DataTrim value, you can modify this on the Data Laundry Setup Page.

ISO 2	ISO3166	salesforce	DataTrim		Official Name
AD	Andorra	Andorra	Andorra		The Principality of Andorra
AE	United Arab Emirates (the)	United Arab Emirates	United Arab Emirates		The United Arab Emirates
AF	Afghanistan	Afghanistan	Afghanistan		The Islamic Republic of Afghanistan
AG	Antigua and Barbuda	Antigua and Barbuda	Antigua and Barbuda		Antigua and Barbuda
AI	Anguilla	Anguilla	Anguilla		Anguilla
AL	Albania	Albania	Albania		The Republic of Albania
AM	Armenia	Armenia	Armenia		The Republic of Armenia
AN			Netherlands Antilles	*	
AO	Angola	Angola	Angola		The Republic of Angola
AQ	Antarctica	Antarctica	Antarctica		All land and ice shelves south of the 60th parallel south
AR	Argentina	Argentina	Argentina		The Argentine Republic
AS	American Samoa		American Samoa	*	The Territory of American Samoa
AT	Austria	Austria	Austria		The Republic of Austria
AU	Australia	Australia	Australia		The Commonwealth of Australia
AW	Aruba	Aruba	Aruba		Aruba
AX	Åland Islands	Åland Islands	Åland Islands		Åland
AZ	Azerbaijan	Azerbaijan	Azerbaijan		The Republic of Azerbaijan
BA	Bosnia and Herzegovina	Bosnia and Herzegovina	Bosnia and Herzegovina		Bosnia and Herzegovina
BA	Bosnia and Herzegovina	Bosnia and Herzegovina	Bosnia and Herzegovina		Bosnia and Herzegovina
BB	Barbados	Barbados	Barbados		Barbados
BD	Bangladesh	Bangladesh	Bangladesh		The People's Republic of Bangladesh
BE	Belgium	Belgium	Belgium		The Kingdom of Belgium
BF	Burkina Faso	Burkina Faso	Burkina Faso		Burkina Faso
BG	Bulgaria	Bulgaria	Bulgaria		The Republic of Bulgaria
BH	Bahrain	Bahrain	Bahrain		The Kingdom of Bahrain
BI	Burundi	Burundi	Burundi		The Republic of Burundi
BJ	Benin	Benin	Benin		The Republic of Benin
BL	Saint Barthélemy	Saint Barthélemy	Saint Barthélemy		The Collectivity of Saint-Barthélemy
BM	Bermuda	Bermuda	Bermuda		Bermuda
BN	Brunei Darussalam	Brunei Darussalam	Brunei Darussalam		The Nation of Brunei, the Abode of Peace

BO	Bolivia (Plurinational State of)	Bolivia, Plurinational State of	Bolivia	*	The Plurinational State of Bolivia
BQ	Bonaire	Bonaire, Sint Eustatius and Saba	Bonaire, Sint Eustatius and Saba		Bonaire, Sint Eustatius and Saba
BR	Brazil	Brazil	Brazil		The Federative Republic of Brazil
BS	Bahamas (the)	Bahamas	Bahamas		The Commonwealth of The Bahamas
BT	Bhutan	Bhutan	Bhutan		The Kingdom of Bhutan
BV	Bouvet Island	Bouvet Island	Bouvet Island		Bouvet Island
BW	Botswana	Botswana	Botswana		The Republic of Botswana
BY	Belarus	Belarus	Belarus		The Republic of Belarus
BZ	Belize	Belize	Belize		Belize
CA	Canada	Canada	Canada		Canada
CC	Cocos (Keeling) Islands (the)	Cocos (Keeling) Islands	Cocos (Keeling) Islands		The Territory of Cocos (Keeling) Islands
CD	Congo (the Democratic Republic of the)	Congo, the Democratic Republic of the	Congo, Democratic Republic	*	The Democratic Republic of the Congo
CF	Central African Republic (the)	Central African Republic	Central African Republic		The Central African Republic
CG	Congo (the)	Congo	Congo, Republic	*	The Republic of the Congo
CH	Switzerland	Switzerland	Switzerland		The Swiss Confederation
CI	Côte d'Ivoire	Cote d'Ivoire	Cote d'Ivoire	*	The Republic of Côte d'Ivoire
CK	Cook Islands (the)	Cook Islands	Cook Islands		The Cook Islands
CL	Chile	Chile	Chile		The Republic of Chile
CM	Cameroon	Cameroon	Cameroon		The Republic of Cameroon
CN	China	China	China		The People's Republic of China
CO	Colombia	Colombia	Colombia		The Republic of Colombia
CR	Costa Rica	Costa Rica	Costa Rica		The Republic of Costa Rica
CU	Cuba	Cuba	Cuba		The Republic of Cuba
CV	Cabo Verde	Cape Verde	Cape Verde		The Republic of Cabo Verde
CW	Curaçao	Curaçao	Curaçao		The Country of Curaçao
CX	Christmas Island	Christmas Island	Christmas Island		The Territory of Christmas Island
CY	Cyprus	Cyprus	Cyprus		The Republic of Cyprus
CZ	Czechia	Czech Republic	Czech Republic		The Czech Republic
DE	Germany	Germany	Germany		The Federal Republic of Germany
DJ	Djibouti	Djibouti	Djibouti		The Republic of Djibouti
DK	Denmark	Denmark	Denmark		The Kingdom of Denmark
DM	Dominica	Dominica	Dominica		The Commonwealth of Dominica
DO	Dominican Republic (the)	Dominican Republic	Dominican Republic		The Dominican Republic

DZ	Algeria	Algeria	Algeria		The People's Democratic Republic of Algeria
EC	Ecuador	Ecuador	Ecuador		The Republic of Ecuador
EE	Estonia	Estonia	Estonia		The Republic of Estonia
EG	Egypt	Egypt	Egypt		The Arab Republic of Egypt
EH	Western Sahara	Western Sahara	Western Sahara		The Sahrawi Arab Democratic Republic
ER	Eritrea	Eritrea	Eritrea		The State of Eritrea
ES	Spain	Spain	Spain		The Kingdom of Spain
ET	Ethiopia	Ethiopia	Ethiopia		The Federal Democratic Republic of Ethiopia
FI	Finland	Finland	Finland		The Republic of Finland
FJ	Fiji	Fiji	Fiji		The Republic of Fiji
FK	Falkland Islands (the)	Falkland Islands (Malvinas)	Falkland Islands	*	The Falkland Islands
FM	Micronesia (Federated States of)		Micronesia	*	The Federated States of Micronesia
FO	Faroe Islands (the)	Faroe Islands	Faroe Islands		The Faroe Islands
FR	France	France	France		The French Republic
GA	Gabon	Gabon	Gabon		The Gabonese Republic
GB	United Kingdom of Great Britain and Northern Ireland (the)	United Kingdom	United Kingdom		The United Kingdom of Great Britain and Northern Ireland
GD	Grenada	Grenada	Grenada		Grenada
GE	Georgia	Georgia	Georgia		Georgia
GF	French Guiana	French Guiana	French Guiana		Guyane
GG	Guernsey	Guernsey	Guernsey		The Bailiwick of Guernsey
GH	Ghana	Ghana	Ghana		The Republic of Ghana
GI	Gibraltar	Gibraltar	Gibraltar		Gibraltar
GL	Greenland	Greenland	Greenland		Kalaallit Nunaat
GM	Gambia (the)	Gambia	Gambia		The Republic of The Gambia
GN	Guinea	Guinea	Guinea		The Republic of Guinea
GP	Guadeloupe	Guadeloupe	Guadeloupe		Guadeloupe
GQ	Equatorial Guinea	Equatorial Guinea	Equatorial Guinea		The Republic of Equatorial Guinea
GR	Greece	Greece	Greece		The Hellenic Republic
GS	South Georgia and the South Sandwich Islands	South Georgia and the South Sandwich Islands	South Georgia and the South Sandwich Islands		South Georgia and the South Sandwich Islands
GT	Guatemala	Guatemala	Guatemala		The Republic of Guatemala
GU	Guam		Guam	*	The Territory of Guam
GW	Guinea-Bissau	Guinea-Bissau	Guinea-bissau		The Republic of Guinea-Bissau

GY	Guyana	Guyana	Guyana		The Co-operative Republic of Guyana
HK	Hong Kong		Hong Kong	*	The Hong Kong Special Administrative Region of China
HM	Heard Island and McDonald Islands	Heard Island and McDonald Islands	Heard Island and McDonald Islands		The Territory of Heard Island and McDonald Islands
HN	Honduras	Honduras	Honduras		The Republic of Honduras
HR	Croatia	Croatia	Croatia		The Republic of Croatia
HT	Haiti	Haiti	Haiti		The Republic of Haiti
HU	Hungary	Hungary	Hungary		Hungary
ID	Indonesia	Indonesia	Indonesia		The Republic of Indonesia
IE	Ireland	Ireland	Ireland		Ireland
IL	Israel	Israel	Israel		The State of Israel
IM	Isle of Man	Isle of Man	Isle of Man		The Isle of Man
IN	India	India	India		The Republic of India
IO	British Indian Ocean Territory (the)	British Indian Ocean Territory	British Indian Ocean Territory		The British Indian Ocean Territory
IQ	Iraq	Iraq	Iraq		The Republic of Iraq
IR	Iran (Islamic Republic of)	Iran, Islamic Republic of	Iran	*	The Islamic Republic of Iran
IS	Iceland	Iceland	Iceland		Iceland
IT	Italy	Italy	Italy		The Italian Republic
JE	Jersey	Jersey	Jersey		The Bailiwick of Jersey
JM	Jamaica	Jamaica	Jamaica		Jamaica
JO	Jordan	Jordan	Jordan		The Hashemite Kingdom of Jordan
JP	Japan	Japan	Japan		Japan
KE	Kenya	Kenya	Kenya		The Republic of Kenya
KG	Kyrgyzstan	Kyrgyzstan	Kyrgyzstan		The Kyrgyz Republic
KH	Cambodia	Cambodia	Cambodia		The Kingdom of Cambodia
KI	Kiribati	Kiribati	Kiribati		The Republic of Kiribati
KM	Comoros (the)	Comoros	Comoros		The Union of the Comoros
KN	Saint Kitts and Nevis	Saint Kitts and Nevis	Saint Kitts and Nevis		Saint Kitts and Nevis
KP	Korea (the Democratic People's Republic of)	Korea, Democratic People's Republic of	North Korea	*	The Democratic People's Republic of Korea
KR	Korea (the Republic of)	Korea, Republic of	South Korea	*	The Republic of Korea
KW	Kuwait	Kuwait	Kuwait		The State of Kuwait
KY	Cayman Islands (the)	Cayman Islands	Cayman Islands		The Cayman Islands
KZ	Kazakhstan	Kazakhstan	Kazakhstan		The Republic of Kazakhstan

LA	Lao People's Democratic Republic (the)	Lao People's Democratic Republic	Lao People's Democratic Republic	*	The Lao People's Democratic Republic
LB	Lebanon	Lebanon	Lebanon		The Lebanese Republic
LC	Saint Lucia	Saint Lucia	Saint Lucia		Saint Lucia
LI	Liechtenstein	Liechtenstein	Liechtenstein		The Principality of Liechtenstein
LK	Sri Lanka	Sri Lanka	Sri Lanka		The Democratic Socialist Republic of Sri Lanka
LR	Liberia	Liberia	Liberia		The Republic of Liberia
LS	Lesotho	Lesotho	Lesotho		The Kingdom of Lesotho
LT	Lithuania	Lithuania	Lithuania		The Republic of Lithuania
LU	Luxembourg	Luxembourg	Luxembourg		The Grand Duchy of Luxembourg
LV	Latvia	Latvia	Latvia		The Republic of Latvia
LY	Libya	Libyan Arab Jamahiriya	Libya	*	The State of Libya
MA	Morocco	Morocco	Morocco		The Kingdom of Morocco
MC	Monaco	Monaco	Monaco		The Principality of Monaco
MD	Moldova (the Republic of)	Moldova, Republic of	Moldova	*	The Republic of Moldova
ME	Montenegro	Montenegro	Montenegro		Montenegro
MF	Saint Martin (French part)	Saint Martin (French part)	Saint Martin	*	The Collectivity of Saint-Martin
MG	Madagascar	Madagascar	Madagascar		The Republic of Madagascar
MH	Marshall Islands (the)		Marshall Islands	*	The Republic of the Marshall Islands
MK	North Macedonia	Macedonia, the former Yugoslav Republic of	North Macedonia	*	Republic of North Macedonia
ML	Mali	Mali	Mali		The Republic of Mali
MM	Myanmar	Myanmar	Myanmar		The Republic of the Union of Myanmar
MN	Mongolia	Mongolia	Mongolia		The State of Mongolia
MO	Macao	Macao	Macao		Macao Special Administrative Region of China
MP	Northern Mariana Islands (the)		Northern Mariana Islands	*	The Commonwealth of the Northern Mariana Islands
MQ	Martinique	Martinique	Martinique		Martinique
MR	Mauritania	Mauritania	Mauritania		The Islamic Republic of Mauritania
MS	Montserrat	Montserrat	Montserrat		Montserrat
MT	Malta	Malta	Malta		The Republic of Malta
MU	Mauritius	Mauritius	Mauritius		The Republic of Mauritius
MV	Maldives	Maldives	Maldives		The Republic of Maldives
MW	Malawi	Malawi	Malawi		The Republic of Malawi
MX	Mexico	Mexico	Mexico		The United Mexican States

MY	Malaysia	Malaysia	Malaysia		Malaysia
MZ	Mozambique	Mozambique	Mozambique		The Republic of Mozambique
NA	Namibia	Namibia	Namibia		The Republic of Namibia
NC	New Caledonia	New Caledonia	New Caledonia		New Caledonia
NE	Niger (the)	Niger	Niger		The Republic of the Niger
NF	Norfolk Island	Norfolk Island	Norfolk Island		The Territory of Norfolk Island
NG	Nigeria	Nigeria	Nigeria		The Federal Republic of Nigeria
NI	Nicaragua	Nicaragua	Nicaragua		The Republic of Nicaragua
NL	Netherlands (the)	Netherlands	Netherlands		The Kingdom of the Netherlands
NO	Norway	Norway	Norway		The Kingdom of Norway
NP	Nepal	Nepal	Nepal		The Federal Democratic Republic of Nepal
NR	Nauru	Nauru	Nauru		The Republic of Nauru
NU	Niue	Niue	Niue		Niue
NZ	New Zealand	New Zealand	New Zealand		New Zealand
OM	Oman	Oman	Oman		The Sultanate of Oman
PA	Panama	Panama	Panama		The Republic of Panamá
PE	Peru	Peru	Peru		The Republic of Perú
PF	French Polynesia	French Polynesia	French Polynesia		French Polynesia
PG	Papua New Guinea	Papua New Guinea	Papua New Guinea		The Independent State of Papua New Guinea
PH	Philippines (the)	Philippines	Philippines		The Republic of the Philippines
PK	Pakistan	Pakistan	Pakistan		The Islamic Republic of Pakistan
PL	Poland	Poland	Poland		The Republic of Poland
PM	Saint Pierre and Miquelon	Saint Pierre and Miquelon	Saint Pierre and Miquelon		The Overseas Collectivity of Saint-Pierre and Miquelon
PN	Pitcairn	Pitcairn	Pitcairn		The Pitcairn, Henderson, Ducie and Oeno Islands
PR	Puerto Rico		Puerto Rico	*	The Commonwealth of Puerto Rico
PS	Palestine, State of	Palestine	Palestine		The State of Palestine
PT	Portugal	Portugal	Portugal		The Portuguese Republic
PW	Palau		Palau	*	The Republic of Palau
PY	Paraguay	Paraguay	Paraguay		The Republic of Paraguay
QA	Qatar	Qatar	Qatar		The State of Qatar
RE	Réunion	Reunion	Reunion		Réunion
RO	Romania	Romania	Romania		Romania
RS	Serbia	Serbia	Serbia		The Republic of Serbia
RU	Russian Federation (the)	Russian Federation	Russian Federation		The Russian Federation
RU	Russian Federation (the)	Russian Federation	Russian Federation		The Russian Federation

RW	Rwanda	Rwanda	Rwanda		The Republic of Rwanda
SA	Saudi Arabia	Saudi Arabia	Saudi Arabia		The Kingdom of Saudi Arabia
SB	Solomon Islands	Solomon Islands	Solomon Islands		The Solomon Islands
SC	Seychelles	Seychelles	Seychelles		The Republic of Seychelles
SD	Sudan (the)	Sudan	Sudan		The Republic of the Sudan
SE	Sweden	Sweden	Sweden		The Kingdom of Sweden
SG	Singapore	Singapore	Singapore		The Republic of Singapore
SH	Saint Helena	Saint Helena, Ascension and Tristan da Cunha	Saint Helena, Ascension and Tristan da Cunha		Saint Helena, Ascension and Tristan da Cunha
SI	Slovenia	Slovenia	Slovenia		The Republic of Slovenia
SJ	Svalbard	Svalbard and Jan Mayen	Svalbard and Jan Mayen		Svalbard and Jan Mayen
SK	Slovakia	Slovakia	Slovakia		The Slovak Republic
SL	Sierra Leone	Sierra Leone	Sierra Leone		The Republic of Sierra Leone
SM	San Marino	San Marino	San Marino		The Republic of San Marino
SN	Senegal	Senegal	Senegal		The Republic of Senegal
SO	Somalia	Somalia	Somalia		The Federal Republic of Somalia
SR	Suriname	Suriname	Suriname		The Republic of Suriname
SS	South Sudan	South Sudan	South Sudan		The Republic of South Sudan
ST	Sao Tome and Principe	Sao Tome and Principe	Sao Tome and Principe		The Democratic Republic of São Tomé and Príncipe
SV	El Salvador	El Salvador	El Salvador		The Republic of El Salvador
SX	Sint Maarten (Dutch part)	Sint Maarten (Dutch part)	Sint Maarten	*	Sint Maarten
SY	Syrian Arab Republic (the)	Syrian Arab Republic	Syrian Arab Republic		The Syrian Arab Republic
SZ	Eswatini	Swaziland	Eswatini	*	The Kingdom of Eswatini
TC	Turks and Caicos Islands (the)	Turks and Caicos Islands	Turks and Caicos Islands		The Turks and Caicos Islands
TD	Chad	Chad	Chad		The Republic of Chad
TF	French Southern Territories (the)	French Southern Territories	French Southern Territories		The French Southern and Antarctic Lands
TG	Togo	Togo	Togo		The Togolese Republic
TH	Thailand	Thailand	Thailand		The Kingdom of Thailand
TJ	Tajikistan	Tajikistan	Tajikistan		The Republic of Tajikistan
TK	Tokelau	Tokelau	Tokelau		Tokelau
TL	Timor-Leste	Timor-Leste	Timor-Leste		The Democratic Republic of Timor- Leste
TM	Turkmenistan	Turkmenistan	Turkmenistan		Turkmenistan
TN	Tunisia	Tunisia	Tunisia		The Republic of Tunisia
TO	Tonga	Tonga	Tonga		The Kingdom of Tonga
TR	Turkey	Turkey	Turkey		The Republic of Turkey

TT	Trinidad and Tobago	Trinidad and Tobago	Trinidad and Tobago		The Republic of Trinidad and Tobago
TV	Tuvalu	Tuvalu	Tuvalu		Tuvalu
TW	Taiwan (Province of China)	Taiwan	Taiwan		The Republic of China
TZ	Tanzania, the United Republic of	Tanzania, United Republic of	Tanzania	*	The United Republic of Tanzania
UA	Ukraine	Ukraine	Ukraine		Ukraine
UG	Uganda	Uganda	Uganda		The Republic of Uganda
UM	United States Minor Outlying Islands (the)		United States Minor Outlying Islands	*	Baker Island, Howland Island, Jarvis Island, Johnston Atoll, Kingman Reef, Midway Atoll, Navassa Island, Palmyra Atoll, and Wake Island
US	United States of America (the)	United States	United States		The United States of America
UY	Uruguay	Uruguay	Uruguay		The Oriental Republic of Uruguay
UZ	Uzbekistan	Uzbekistan	Uzbekistan		The Republic of Uzbekistan
VA	Holy See (the)	Holy See (Vatican City State)	Vatican City State	*	The Holy See
VC	Saint Vincent and the Grenadines	Saint Vincent and the Grenadines	Saint Vincent and the Grenadines		Saint Vincent and the Grenadines
VE	Venezuela (Bolivarian Republic of)	Venezuela, Bolivarian Republic of	Venezuela	*	The Bolivarian Republic of Venezuela
VG	Virgin Islands (British)	Virgin Islands, British	Virgin Islands, British		The Virgin Islands
VI	Virgin Islands (U.S.)		Virgin Islands, U.S.	*	The Virgin Islands of the United States
VN	Viet Nam	Vietnam	Vietnam		The Socialist Republic of Viet Nam
VU	Vanuatu	Vanuatu	Vanuatu		The Republic of Vanuatu
WF	Wallis and Futuna	Wallis and Futuna	Wallis and Futuna		The Territory of the Wallis and Futuna Islands
WS	Samoa	Samoa	Samoa		The Independent State of Samoa
XK			Kosovo	*	
YE	Yemen	Yemen	Yemen		The Republic of Yemen
YT	Mayotte	Mayotte	Mayotte		The Department of Mayotte
ZA	South Africa	South Africa	South Africa		The Republic of South Africa
ZM	Zambia	Zambia	Zambia		The Republic of Zambia
ZW	Zimbabwe	Zimbabwe	Zimbabwe		The Republic of Zimbabwe

Appendix G – Data Quality Score and Data Quality Indicator

In the managed package we provide Data Quality Score and Data Quality Indicator based on a selected number of business critical fields. Both elements are implemented as Formula fields.

Below you will see the code for the default formulas used in the Managed Package

You can create your own element using the provided formulas as templates, and replace the default elements with your own elements on your page details, reports etc.

For the calculation of the Average Data Quality Score on the Baskets, the Default Data Quality Score formula is used. To change this into using your custom Data Quality Score formula, go to the Data Laundry Setup and change the settings.

Account

Manage Package: Business Critical fields:

Name, Phone, Location, BillingCountry

Data Quality Score formula (percent):

Calculates a score (0-100) based on the contents of the Business Critical Fields AND the contents of the Data Laundry Outcome field.

```
(IF(LEN(Name) = 0, IF(CONTAINS(DataLaundry__DataLaundry_OutcomeCodes__c, 'Name:Invalid'),1,4)) +
IF(LEN(Phone)=0,IF(CONTAINS( DataLaundry__DataLaundry_OutcomeCodes__c, 'Phone:Invalid'),1,2)) +
IF(CONTAINS(DataLaundry__DataLaundry_OutcomeCodes__c,
'Location:Invalid'),1,IF(CONTAINS(DataLaundry__DataLaundry_OutcomeCodes__c, 'Location:Incomplete'),2,3)) +
IF(LEN(BillingCountry) = 0, IF(CONTAINS( DataLaundry__DataLaundry_OutcomeCodes__c, 'Country:Invalid'),1,3)) +
IF(CONTAINS( DataLaundry__DataLaundry_OutcomeCodes__c, 'Name:Invalid'),0,3))/15
```

Data Quality Indicator formula (text):

Creates a visual indicator by combining a list of images. The images are selected based on the contents of the Business Critical Fields AND the contents of the Data Laundry Outcome field.

```
HYPERLINK('/apex/DataLaundry__DataLaundry_Account?id= &Id&&o=account',
IF(AND(ISNULL(DataLaundry__LastDataLaundryDate__c),!DataLaundry__DataLaundry_Skip__c),IMAGE('/resource/DataLaun
dry__DatatrimDataLaundry/fallback.png','Not Yet Cleaned!', 20,12)&" " "&
IF(DataLaundry__DataLaundry_Skip__c,IMAGE('/resource/DataLaundry__DatatrimDataLaundry/skip_laundry.png','skip Data
laundry', 20,20)&" " "&
IF(OR(LEN(Name) = 0,CONTAINS(DataLaundry__DataLaundry_OutcomeCodes__c,
'Name:No')),IMAGE('/resource/DataLaundry__DatatrimDataLaundry/no_name.png','No Name',
20,20),IF(CONTAINS(DataLaundry__DataLaundry_OutcomeCodes__c,'Name:Invalid'),IMAGE('/resource/DataLaundry__Datatri
mDataLaundry/invalid_name.png','Invalid Name',
20,20),IMAGE('/resource/DataLaundry__DatatrimDataLaundry/valid_name.png','Name OK', 20,20)))
&" "&
IF(OR(LEN(Phone) = 0, CONTAINS(DataLaundry__DataLaundry_OutcomeCodes__c,
'Phone:No')),IMAGE('/resource/DataLaundry__DatatrimDataLaundry/no_phone.png','No Phone',
20,20),IF(CONTAINS(DataLaundry__DataLaundry_OutcomeCodes__c,'Phone:Invalid'),IMAGE('/resource/DataLaundry__Datatr
imDataLaundry/invalid_phone.png','Invalid Phone',
20,20),IMAGE('/resource/DataLaundry__DatatrimDataLaundry/valid_phone.png','Phone OK', 20,20)))
&" "&
IF(CONTAINS(DataLaundry__DataLaundry_OutcomeCodes__c,
'Location:No'),IMAGE('/resource/DataLaundry__DatatrimDataLaundry/no_location.png','No Location',
20,20),IF(CONTAINS(DataLaundry__DataLaundry_OutcomeCodes__c,'Location:Invalid'),IMAGE('/resource/DataLaundry__Dat
atrimDataLaundry/invalid_location.png','Invalid Location',
20,20),IF(CONTAINS(DataLaundry__DataLaundry_OutcomeCodes__c,'Location:Incomplete'),IMAGE('/resource/DataLaundry__
DatatrimDataLaundry/no_location.png','Incomplete Location',
20,20),IMAGE('/resource/DataLaundry__DatatrimDataLaundry/valid_location.png','Location OK', 20,20))))
&" "&
IF(OR(LEN(BillingCountry) = 0,CONTAINS(DataLaundry__DataLaundry_OutcomeCodes__c,
'Country:No')),IMAGE('/resource/DataLaundry__DatatrimDataLaundry/no_country.png','No Country',
20,20),IF(CONTAINS(DataLaundry__DataLaundry_OutcomeCodes__c,'Country:Invalid'),IMAGE('/resource/DataLaundry__Data
trimDataLaundry/invalid_country.png','Invalid Country',
20,20),IMAGE('/resource/DataLaundry__DatatrimDataLaundry/valid_country.png','Country OK', 20,20)))
&" "& TEXT(ROUND(DataLaundry__Quality_Score__c*100,0)))
```

Contact

Manage Package: Business Critical fields:

Email, Phone, Title, Country, FirstName, LastName

Data Quality Score formula (percent):

Calculates a score (0-100) based on the contents of the Business Critical Fields AND the contents of the Data Laundry Outcome field.

```
(IF(LEN(Email) = 0, IF(CONTAINS(DataLaundry__DataLaundry_OutcomeCodes__c, 'Email:Invalid'),1,IF(CONTAINS(Email ,
'invalid'),1,4))) +
IF(AND(LEN(Phone)=0,LEN(MobilePhone)=0),0,IF(CONTAINS( DataLaundry__DataLaundry_OutcomeCodes__c ,
'Phone:Invalid'),1,2)) +
IF(LEN(Title) = 0, IF(CONTAINS( DataLaundry__DataLaundry_OutcomeCodes__c , 'Title:Invalid'),1,IF(CONTAINS(
DataLaundry__DataLaundry_OutcomeCodes__c , 'Title:Incomplete'),2,3))) +
IF(LEN(MailingCountry) = 0, IF(CONTAINS( DataLaundry__DataLaundry_OutcomeCodes__c , 'Country:Invalid'),1,3)) +
IF(CONTAINS( DataLaundry__DataLaundry_OutcomeCodes__c , 'Name:Invalid'),0,IF(OR(LastName='[Not provided]',LastName='.',
LastName='Unknown'),1,IF(LEN(FirstName) = 0,2,3))))/15
```

Data Quality Indicator formula (text):

Creates a visual indicator by combining a list of images. The images are selected based on the contents of the Business Critical Fields AND the contents of the Data Laundry Outcome field.

```
HYPERLINK('/apex/DataLaundry__DataLaundry_Contact?id='&Id&'&o=contact',
IF(AND(ISNULL(DataLaundry__LastDataLaundryDate__c),!DataLaundry__DataLaundry_Skip__c),IMAGE('/resource/DataLaundry__Da
tatrimDataLaundry/fallback.png','Not Yet Cleaned!', 20,12)&" " "&
IF(DataLaundry__DataLaundry_Skip__c,IMAGE('/resource/DataLaundry__DatatrimDataLaundry/skip_laundry.png','skip Data laundry',
20,20)&" " "&
IF(OR(LEN(FirstName) = 0,CONTAINS(DataLaundry__DataLaundry_OutcomeCodes__c,
'Name:No')),IMAGE('/resource/DataLaundry__DatatrimDataLaundry/no_name.png','No Name',
20,20),IF(CONTAINS(DataLaundry__DataLaundry_OutcomeCodes__c,'Name:Invalid'),IMAGE('/resource/DataLaundry__DatatrimDataL
aundry/invalid_name.png','Invalid Name', 20,20),IMAGE('/resource/DataLaundry__DatatrimDataLaundry/valid_name.png','Name OK',
20,20)))
&" "&
IF(OR(LEN(Email) = 0,CONTAINS(DataLaundry__DataLaundry_OutcomeCodes__c,
'Email:No')),IMAGE('/resource/DataLaundry__DatatrimDataLaundry/no_email.png','No Email',
20,20),IF(OR(CONTAINS(Email,'invalid'),CONTAINS(DataLaundry__DataLaundry_OutcomeCodes__c,'Email:Invalid')),IMAGE('/resourc
e/DataLaundry__DatatrimDataLaundry/invalid_email.png','Invalid Name',
20,20),IMAGE('/resource/DataLaundry__DatatrimDataLaundry/valid_email.png','Email OK', 20,20)))
&" "&
IF(OR(LEN(Title) = 0,CONTAINS(DataLaundry__DataLaundry_OutcomeCodes__c,
'Title:No')),IMAGE('/resource/DataLaundry__DatatrimDataLaundry/no_title.png','No Title',
20,20),IF(CONTAINS(DataLaundry__DataLaundry_OutcomeCodes__c,'Title:Incomplete'),IMAGE('/resource/DataLaundry__DatatrimDat
aLaundry/incomplete_title.png','Incomplete Title', 20,20),IMAGE('/resource/DataLaundry__DatatrimDataLaundry/valid_title.png','Title
OK', 20,20)))
&" "&
IF(OR(AND(LEN(Phone)=0,LEN(MobilePhone)=0) ,CONTAINS(DataLaundry__DataLaundry_OutcomeCodes__c,
'Phone:No')),IMAGE('/resource/DataLaundry__DatatrimDataLaundry/no_phone.png','No Phone',
20,20),IF(CONTAINS(DataLaundry__DataLaundry_OutcomeCodes__c,'Phone:Invalid'),IMAGE('/resource/DataLaundry__DatatrimData
Laundry/invalid_phone.png','Invalid Phone', 20,20),IMAGE('/resource/DataLaundry__DatatrimDataLaundry/valid_phone.png','Phone
OK', 20,20)))
&" "&
IF(OR(LEN(MailingCountry) = 0,CONTAINS(DataLaundry__DataLaundry_OutcomeCodes__c,
'Country:No')),IMAGE('/resource/DataLaundry__DatatrimDataLaundry/no_country.png','No Country',
20,20),IF(CONTAINS(DataLaundry__DataLaundry_OutcomeCodes__c,'Country:Invalid'),IMAGE('/resource/DataLaundry__DatatrimDat
aLaundry/invalid_country.png','Invalid Country',
20,20),IMAGE('/resource/DataLaundry__DatatrimDataLaundry/valid_country.png','Country OK', 20,20)))
&" "& TEXT(ROUND(DataLaundry__Quality_Score__c*100,0)))
```


Lead

Manage Package: Business Critical fields:

Email, Phone, Title, Country, FirstName, LastName

Data Quality Score formula (percent):

Calculates a score (0-100) based on the contents of the Business Critical Fields AND the contents of the Data Laundry Outcome field.

```
(IF(LEN(Email) = 0,0, IF(CONTAINS(DataLaundry__DataLaundry_OutcomeCodes__c, 'Email:Invalid'),1,IF(CONTAINS(Email, 'invalid'),1,4))) +
IF(AND(LEN(Phone)=0,LEN(MobilePhone)=0),0,IF(CONTAINS( DataLaundry__DataLaundry_OutcomeCodes__c, 'Phone:Invalid'),1,2)) +
IF(LEN(Title) = 0,0, IF(CONTAINS( DataLaundry__DataLaundry_OutcomeCodes__c, 'Title:Invalid'),1,IF(CONTAINS( DataLaundry__DataLaundry_OutcomeCodes__c, 'Title:Incomplete'),2,3))) +
IF(LEN(Country) = 0,0, IF(CONTAINS( DataLaundry__DataLaundry_OutcomeCodes__c, 'Country:Invalid'),1,3)) +
IF(CONTAINS( DataLaundry__DataLaundry_OutcomeCodes__c, 'Name:Invalid'),0,IF(OR(LastName='[Not provided]',LastName='.', LastName='Unknown'),1,IF(LEN(FirstName) = 0,2,3)))/15
```

Data Quality Indicator formula (text):

Creates a visual indicator by combining a list of images. The images are selected based on the contents of the Business Critical Fields AND the contents of the Data Laundry Outcome field.

```
HYPERLINK('/apex/DataLaundry__DataLaundry_Lead?id='&Id&'&o=lead',
IF(AND(ISNULL(DataLaundry__LastDataLaundryDate__c),!DataLaundry__DataLaundry_Skip__c),IMAGE('/resource/DataLaundry__DataLaundry/fallback.png','Not Yet Cleaned!', 20,12)&" " "&" "&
IF(DataLaundry__DataLaundry_Skip__c,IMAGE('/resource/DataLaundry__DataLaundry/skip_laundry.png','skip Data laundry', 20,20)&" " "&" "&
IF(OR(LEN(FirstName) = 0,CONTAINS(DataLaundry__DataLaundry_OutcomeCodes__c, 'Name:No')),IMAGE('/resource/DataLaundry__DataLaundry/no_name.png','No Name', 20,20),IF(CONTAINS(DataLaundry__DataLaundry_OutcomeCodes__c,'Name:Invalid'),IMAGE('/resource/DataLaundry__DataLaundry/invalid_name.png','Invalid Name', 20,20),IMAGE('/resource/DataLaundry__DataLaundry/valid_name.png','Name OK', 20,20)))
&" "&
IF(OR(LEN(Email) = 0,CONTAINS(DataLaundry__DataLaundry_OutcomeCodes__c, 'Email:No')),IMAGE('/resource/DataLaundry__DataLaundry/no_email.png','No Email', 20,20),IF(OR(CONTAINS(Email,'invalid'),CONTAINS(DataLaundry__DataLaundry_OutcomeCodes__c,'Email:Invalid')),IMAGE('/resource/DataLaundry__DataLaundry/invalid_email.png','Invalid Name', 20,20),IMAGE('/resource/DataLaundry__DataLaundry/valid_email.png','Email OK', 20,20)))
&" "&
IF(OR(LEN(Title) = 0,CONTAINS(DataLaundry__DataLaundry_OutcomeCodes__c, 'Title:No')),IMAGE('/resource/DataLaundry__DataLaundry/no_title.png','No Title', 20,20),IF(CONTAINS(DataLaundry__DataLaundry_OutcomeCodes__c,'Title:Incomplete'),IMAGE('/resource/DataLaundry__DataLaundry/incomplete_title.png','Incomplete Title', 20,20),IMAGE('/resource/DataLaundry__DataLaundry/valid_title.png','Title OK', 20,20)))
&" "&
IF(OR(AND(LEN(Phone)=0,LEN(MobilePhone)=0),CONTAINS(DataLaundry__DataLaundry_OutcomeCodes__c, 'Phone:No')),IMAGE('/resource/DataLaundry__DataLaundry/no_phone.png','No Phone', 20,20),IF(CONTAINS(DataLaundry__DataLaundry_OutcomeCodes__c,'Phone:Invalid'),IMAGE('/resource/DataLaundry__DataLaundry/invalid_phone.png','Invalid Phone', 20,20),IMAGE('/resource/DataLaundry__DataLaundry/valid_phone.png','Phone OK', 20,20)))
&" "&
IF(OR(LEN(Country) = 0,CONTAINS(DataLaundry__DataLaundry_OutcomeCodes__c, 'Country:No')),IMAGE('/resource/DataLaundry__DataLaundry/no_country.png','No Country', 20,20),IF(CONTAINS(DataLaundry__DataLaundry_OutcomeCodes__c,'Country:Invalid'),IMAGE('/resource/DataLaundry__DataLaundry/invalid_country.png','Invalid Country', 20,20),IMAGE('/resource/DataLaundry__DataLaundry/valid_country.png','Country OK', 20,20)))
&" "& TEXT(ROUND(DataLaundry__Quality_Score__c*100,0)))
```