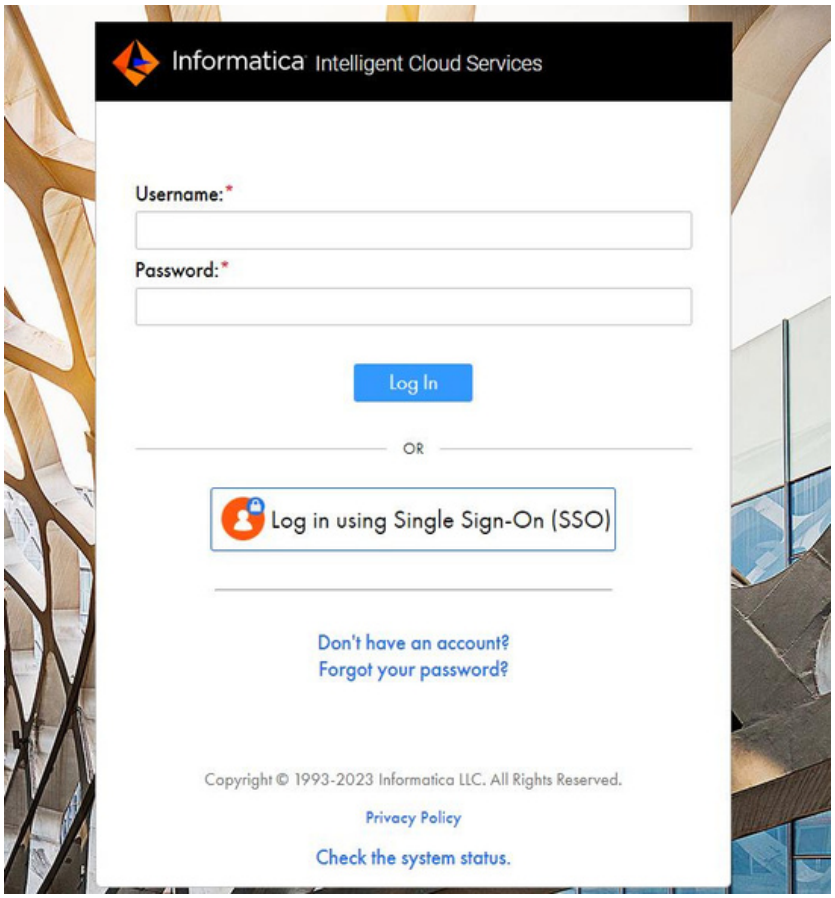
Manual Testing in Informatica MDM SaaS A step-by-step guide

Data Sheet | LumenData

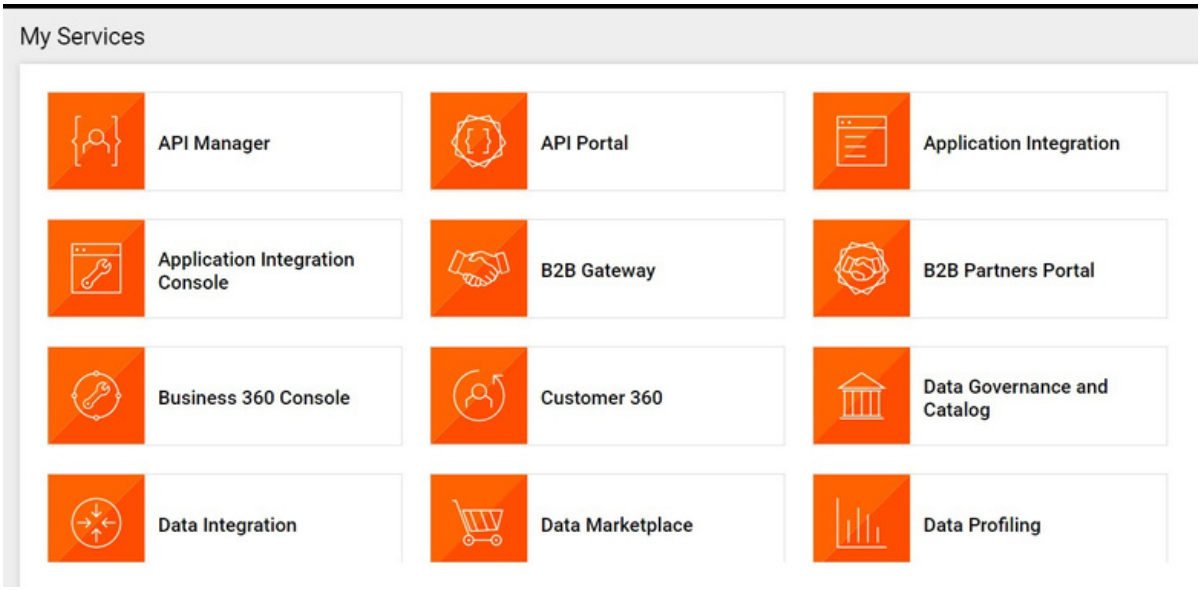
Learn the process of manual testing within the IICS environment, including the different types and sub-types that are involved to make sure the final data is free of defects.

PRODUCT EXPLAINED: Informatica MDM SaaS (IICS account)



LUMENDATA
Masters in Data Management

Customer 360 and Data Integration (Assumption- The user has the required privileges to access the mentioned services in IICS).



WHAT IS MANUAL TESTING?

Manual testing is a software testing approach where testers manually validate and then execute test cases without the use of automated tools or scripts. It involves human intervention to verify the functionality, usability and quality of a software application. Here, testers stimulate end-user scenarios and interactions with system to identify defects or issues in the software.

The process of manual testing typically involves the following steps:

1. Test Planning

Testers define the testing objectives, create test plans, and develop test cases based on the requirements and design specifications of the software.

	A	B	C	D	E	F
1	Version	Author	Reviewed By	Approved By	Comments	Approval Date
2	1	...	...	[Manager Name]	This version is developed.	dd/mm/yyyy
3	1.1	...	...	[Manager Name]	This version is developed with new feature.	dd/mm/yyyy
4	...	...	...	...	...	...

2. Test Case Execution:

Testers execute test cases manually, following predetermined steps and inputs, to validate the behaviour of the software. They will record the expected and actual results for each test case.

3. Defect Reporting:

When a defect or an issue is identified during test case execution, testers report the problem to the development team using a defect tracking system. They provide detailed information about the defect, including steps to reproduce it, screenshots, and other relevant data.

	A	B	C
	Defect No.	**Issue Description**	**Assigned to**
	Defect Number 1	The new feature has not been added.	Development Team

4. Defect Verification:

After the development team addresses the reported defects and releases a new version of the software, testers retest the resolved issues to verify if they have been fixed correctly, and then mark them closed.

A	B	C	D	E	F
Defect No.	**Issue Description**	**Assigned to**	**Dev Comment**	**Status**	**QA Comment**
Defect Number 1	The new feature has not been added.	Development Team	The feature has now been added.	Closed	Closing defect based on QA comment.

5. Retesting:

Retesting follows the completion of defect fixing by developers. Its purpose is to validate that the reported defect has indeed been addressed and that the software is now functioning as expected. This testing focuses on the specific areas or functionalities that were affected by the bug.

6. Regression:

Regression testing refers to the process of retesting a previously tested software application to ensure that any modifications, enhancements, or bug fixes have not introduced new defects or caused existing functionalities to break. Its purpose is to verify that the software remains stable and that any changes made to it have not adversely impacted its overall functionality.

Manual testing has its advantages and disadvantages. Some advantages include the ability to apply human intuition and creativity to uncover complex issues, testing of negative flows, adaptability to changes in requirements, and cost-effectiveness for small-scale projects. However, manual testing can be time-consuming, repetitive, and prone to human error. Therefore, organizations often combine manual testing with automated testing techniques to improve efficiency and effectiveness in the overall testing process.

STEPS FOR MANUAL TESTING IN IICS-

IICS (Informatica Intelligent Cloud Services) is a cloud-based integration platform provided by Informatica. It primarily focuses on data integration, data management, and application integration. While IICS is primarily used for data-related tasks, it also supports various testing capabilities. Manual testing in IICS can be performed using the following approach:

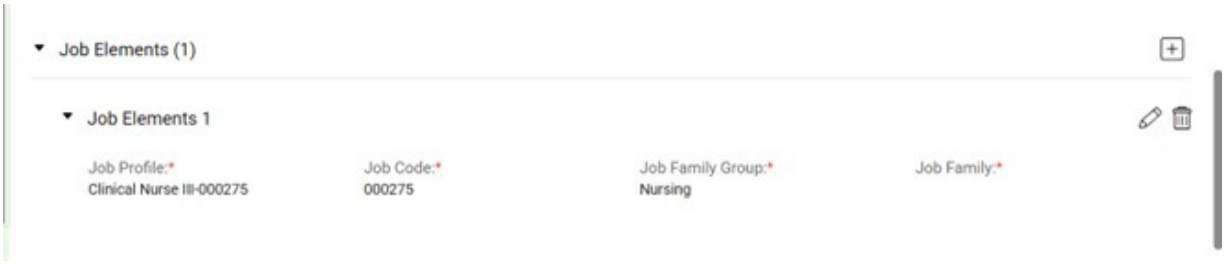
1. Test Plan Preparation:

Begin by preparing a test plan that outlines the objectives, scope, assumptions, and testing approach for the manual testing activities in IICS. Define the test scenarios and test cases that needs to be executed.

Test Case	Test Case Description	Step	Steps Description	Expected Result	Actual Result
Test Case Number 20	Validate Data Quality Rule: Job Family	1	Login to Customer 360 application	Login Successful	Pending
		2	Search the Person record	Person record is displayed	Pending
		3	Validate the Job Family is loaded in regards to the reference lookup value defined	Job Family is populated.	Pending
		4	Validate the Job Family is part of reference data lookup up	Record is loaded to Error Log File with error message: "For for input value is invalid"	Pending

2. Test Case Execution:

Execute the test cases manually within the IICS environment. This involves navigating the IICS user interface, executing the jobs and validating the data integration processes. Record the test results, including any issues or defects encountered.



3. Defect Reporting:

If any defects or issues are identified during the test case execution, report them in a defect tracking system and to the development team. Include all relevant details such as steps to reproduce, error messages, and screenshots if necessary.

Defect Number	Source	MDM Functionality	Issue Description	Assigned to
Defect Number 1	Person	MDM UI	Job Family is required (*) but is missing in UI.	Development Team

4. Retesting:

Once the reported defects are addressed by the development or support team, perform retesting to verify if the fixes were successful. Execute the affected test cases again to ensure that the issues have been resolved and the expected results are achieved. And then close the defect after the retesting is done.

Defect Number	Source	MDM Functionality	Issue Description	Assigned to	Dev Comment	Status	QA Comment
Defect Number 1	Person	MDM UI	Job Family is required (*) but is missing in UI.	Development Team	The defect has been fixed.	Closed	Closing defect based on Dev Team's comment

DATA COMPLETENESS CHECKS IN MANUAL TESTING-

Data completeness checks refer to the verification and validation of data inputs or outputs to ensure that they are complete and contain all the necessary information required for the software application to function correctly. These checks ensure that the application handles data appropriately and can process the data effectively without encountering errors or missing information.

COUNT CHECKS IN MANUAL TESTING-

Count checks is when a tester verifies the correctness of data by comparing the count of records or entities between different data sources or components within the integration processes. These checks are particularly useful for validating data integrity, data synchronization, and ensuring that the expected data volumes are being processed accurately.

JOB RUNS IN MANUAL TESTING-

Job Runs refer to the execution of integration jobs or workflows within the IICS platform. Here's how manual testing may be involved in job runs in IICS:

- **Job Setup and Configuration:**

Manual testing may be involved in setting up and configuring the integration jobs or workflows within IICS. Testers can ensure that the job parameters, connections, mappings, transformations, and other configurations are correctly defined before the job is executed.

- **Job Scheduling and Monitoring:**

While job runs are often scheduled to execute automatically based on predefined schedules or triggers, manual testing may involve monitoring and verifying the successful execution of scheduled job runs. Testers can check job logs, monitor job statuses, and ensure that the jobs run according to the expected schedule.

- **Job Results Verification:**

After a job run completes, manual testing can involve verifying the results produced by the integration job. This can include checking data outputs, file generation, database updates, or any other expected outcomes of the job. Testers can compare the actual results with the expected results to ensure that the job has executed correctly.

- **Error Handling and Exception Testing:**

Job runs in IICS may encounter errors or exceptions during execution. Manual testing can involve intentionally triggering or simulating error scenarios to validate the error handling mechanisms within the integration jobs. Testers can ensure that error messages are appropriately generated, error recovery processes are followed, and any required notifications or actions are triggered.

- **Data Reconciliation:**

Depending on the nature of the integration job, manual testing may involve validating and reconciling data produced or processed by the job. Testers can perform data checks, compare data between source and target systems, and ensure that data integrity and accuracy are maintained throughout the job run.

- **Performance Testing and Optimization:**

While not strictly related to manual testing, performance testing and optimization can play a role in job runs. Testers may be involved in analysing the performance of the integration jobs, identifying bottlenecks, deadlocks and suggesting optimizations to improve job run times, execution schedule or resource utilization.

RERUN OF SAME JOB IN MANUAL TESTING-

This refers to the process of re-executing an integration job or workflow with the same configuration and parameters to validate its behaviour and outcomes. This can be done for various reasons, such as retesting after making changes, confirming the stability of the job, or reproducing an issue for troubleshooting purposes.

Here's how the rerun of the same job is typically approached in manual testing in IICS:

- **Job Configuration Review:**

Before rerunning the job, it is important to review and verify the configuration settings and parameters of the job. Ensure that all the necessary connections, mappings, transformations, and other components are properly set up and aligned with the desired test scenario.

- **Test Data Preparation:**

Depending on the nature of the job, it may require specific test data inputs to reproduce the desired test conditions. Prepare the test data or ensure that the previous test data used during the initial job run is still valid and appropriate for the rerun.

- **Clearing Previous Run Data:**

If the job involves data storage or updates, it may be necessary to clear or reset any remnants of the previous job run's output or impacts. This ensures a clean slate for the rerun and prevents any interference or contamination of data.

- **Rerun Execution:**

Execute the job using the same configuration and parameters as the previous run. This can be done through the IICS interface by selecting the job and initiating its execution manually.

- **Result Validation:**

After the rerun is completed, manually validate the results to ensure that the expected outcomes align with the previous run or the desired expectations. Verify data outputs, file generation, database updates, or any other outputs produced by the job to ensure consistency and correctness.

- **Comparison with Previous Run:**

If the purpose of the rerun is to verify any changes or troubleshoot an issue, compare the results of the rerun with the results of the previous run. Analyse any differences or inconsistencies to identify potential issues or improvements.

- **Logging and Reporting:**

Maintain proper documentation of the rerun process, including any observations, issues encountered, and results obtained. This helps in tracking the history of the job runs and aids in reporting and communication.

Rerunning the same job in manual testing in IICS allows for the validation of the job's behaviour, stability, and consistency over multiple executions. It provides an opportunity to reproduce scenarios, verify changes, and ensure the reliability of the integration process.

DATA CORRECTNESS CHECKS IN MANUAL TESTING-

Data correctness checks refer to the process of verifying the accuracy, integrity, transformation rules and validity of data within a software application. These checks ensure that the data being processed or stored by the application is correct and aligns with the expected business rules and requirements. The goal is to identify any inconsistencies, inaccuracies, or discrepancies in the data and ensure that it meets the desired quality standards.

In the context of manual testing in IICS (Informatica Intelligent Cloud Services), data correctness checks like duplicate checks, null checks, invalid date checks, byte size checks and data validation checks refer to specific types of validation that can be performed on data within the integration workflows. These checks help ensure the accuracy and integrity of the data being processed. Here's an overview of duplicate checks, null checks and other kinds of checks in IICS manual testing, along with notes on Data Lineage and Delta Validation.

DUPLICATE CHECKS IN MANUAL TESTING-

Duplicate checks are validations aimed at identifying and handling duplicate records within the data being processed. In IICS, you can manually execute test cases to verify if the duplicate check logic or transformations are correctly implemented in your integration workflows. Some common steps involved in duplicate checks include:

a. Test Data Preparation:

Create test data with a set of records, including some duplicates, that resemble the real-world scenarios like data duplicates due to multiple reruns.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	S.No	first_name	last_name	email	gender	date	phone_number	Unique_ID	Data Size	Prefix	Suffix	Birthplace	Date_of_B	Marital_St	Employee ID	Account N	Contact Value
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3	2	Kile	Ivchenko	kivchenko1@e-recht24.d	Male	10/3/2022	164-568-2335	tQD4YUZp	100 GB	Mr.	Sr	Amieirinh	########	Unmarriec	976512345	IVchk	9415013712
4	3	Divyam	Singh	dsingh@gmail.com		1/4/2023	571-773-0736	4j6ySBk0	10 KB						914532789	Sgh	6386333673
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6	3	Divyam	Singh	dsingh@gmail.com		1/4/2023	571-773-0736	4j6ySBk0	10 KB						914532789	Sgh	6386333673

b. Integration Workflow Execution:

Execute the integration workflow that includes the duplicate check logic or transformations. This can involve tasks like data profiling, aggregation, or filtering to identify and handle duplicate records. When records are loaded, we check them accordingly.

c. Verification:

Verify if the integration workflow correctly identifies and handles duplicate records as per the expected behaviour. Compare the actual results with the expected results to ensure accuracy.

NULL CHECKS IN MANUAL TESTING-

Null checks are validations performed to ensure that the data being processed does not contain null or missing values where they are not allowed or expected. In IICS, you can manually test the null check logic within your integration workflows. Here are the steps involved:

a. Test Data Preparation:

Create test data with a mix of records that include null values in fields where they should be checked or handled.

No	first_name	last_name	email	gender	date	phone_number	Unique_ID	Data Size	Prefix	Suffix	Birthplace	Date_of_B	Marital_Statu
1	Vinita	Malone	vmalone0@yolasite.com	Female	5/27/2023	582-262-0721	3fdj3920	100 GB	Ms.	III	Hukou	4/7/1990	Divorced
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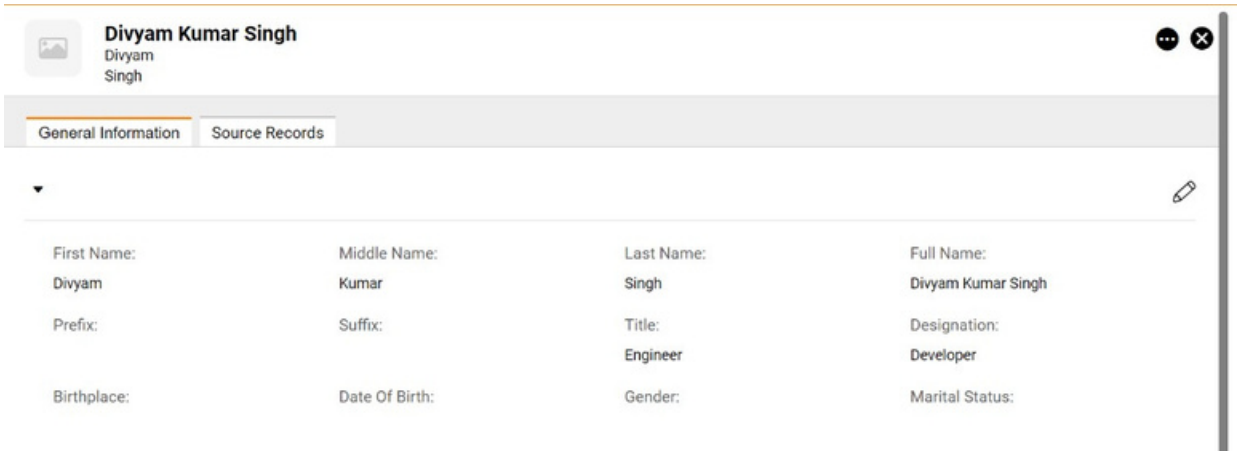
5	Von	Jeandeau	vjeandeau4@fda.gov	Male	8/23/2022	307-700-7501	R73M3t4J	100 MB	Dr.	Jr	BÃ©kÃ©s	########	Married

b. Integration Workflow Execution:

Execute the integration workflow, paying attention to the null check logic or transformations. This may involve tasks like data mapping, conditional statements, or data validation rules. When the records are loaded, we check them accordingly.



c. Verification:

Verify if the integration workflow correctly identifies and handles null values according to the expected behaviour. Compare the actual results with the expected results to ensure that null values are appropriately managed. In this case, we can observe that the few fields are null and are reported accordingly.

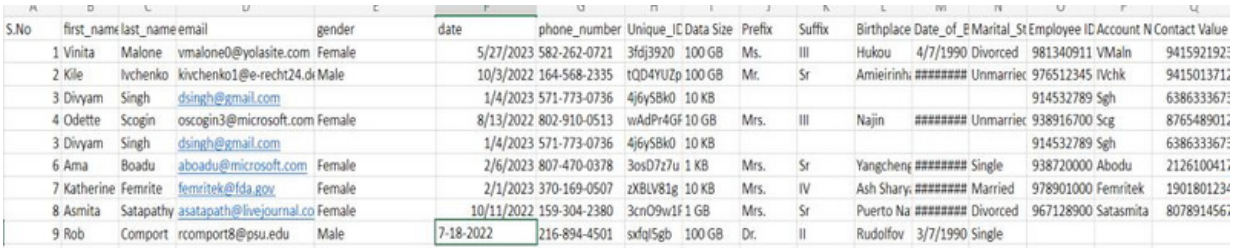
By performing these duplicate checks and null checks as part of manual testing in IICS, you can validate the integrity and quality of your data integration workflows, ensuring that duplicate records are appropriately managed and null values are handled correctly.

INVALID DATE CHECKS IN MANUAL TESTING-

Invalid date checks involve validating the handling of incorrect or invalid dates within your integration workflows. These checks ensure that the date-related data is processed correctly. Here's a general approach to conducting invalid date checks:

a. Test Data Preparation:

Create test data with various scenarios, including records with incorrect or invalid dates such as future dates, past dates, or dates in an incorrect format.



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4	Odette	Scogin	oscogin3@microsoft.com	Female	8/13/2022	802-910-0513	wAdPr4GF	10 GB	Mrs.	III	Najin	########	Unmarriec	938916700	Scg	876548901
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9	Rob	Comport	rcomport8@psu.edu	Male	7-18-2022	216-894-4501	sxfqI5gb	100 GB	Dr.	II	Rudolfov	3/7/1990	Single			

b. Integration Workflow Execution:

Execute the integration workflow that includes date-related transformations or validations. This may involve tasks like date parsing, date calculations, or date comparisons. When records are loaded, we check them accordingly.

c. Verification:

Verify if the integration workflow correctly handles the invalid dates as per the expected behaviour. Ensure that the workflow detects and handles invalid dates appropriately, such as generating errors or applying fallback strategies.

DATA SIZE CHECKS IN MANUAL TESTING-

Data size checks involve validating the handling of data sizes or limits within your integration workflows. These checks ensure that the data being processed adheres to defined size constraints. Here's an approach to performing data size checks:

a. Test Data Preparation:

Create test data that includes various record sizes, such as records with minimal data, large data volumes, or data exceeding specific size thresholds.

b. Integration Workflow Execution:

Execute the integration workflow, focusing on tasks that involve data size considerations, such as data transformations, data aggregation, or data storage. When records are loaded, we check them accordingly.

c. Verification:

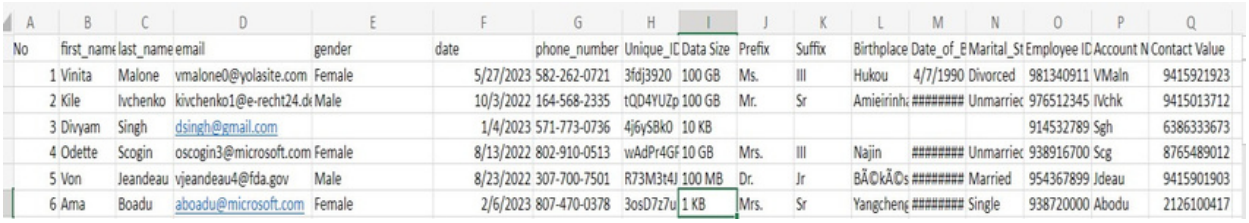
Verify if the integration workflow correctly handles the data sizes according to the expected behaviour. Ensure that the workflow can accommodate the specified data sizes without causing issues such as data truncation, data loss, or performance degradation.

DATA VALIDATION CHECKS IN MANUAL TESTING-

Data validation checks involve validating the correctness and integrity of the data being processed within your integration workflows. These checks ensure that the data meets the defined business rules and quality standards. Here's a general approach to conducting data validation checks:

a. Test Data Preparation:

Create test data that covers various transformation rules.



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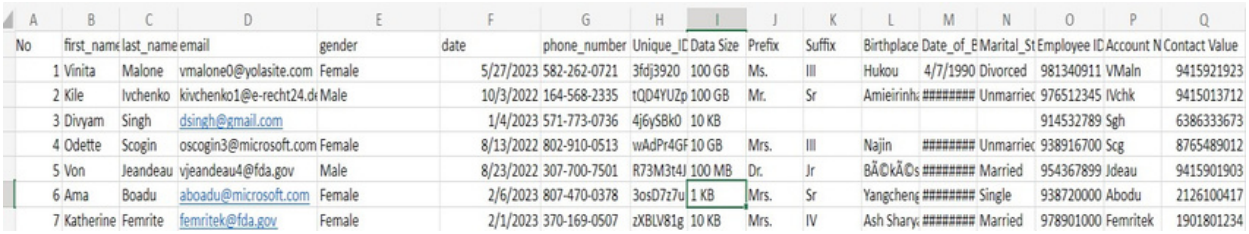

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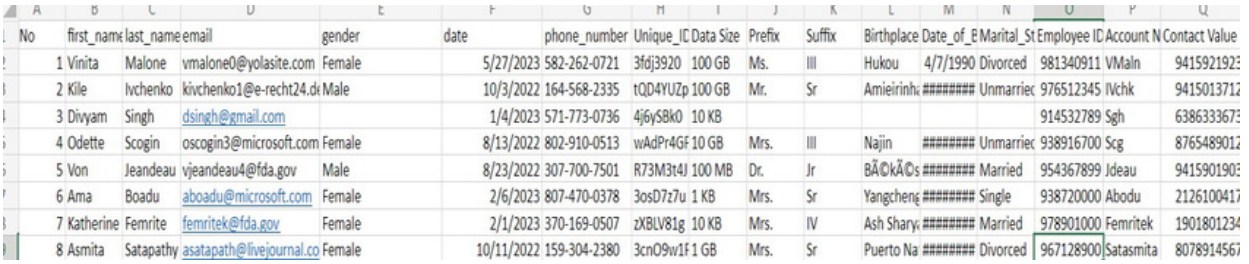

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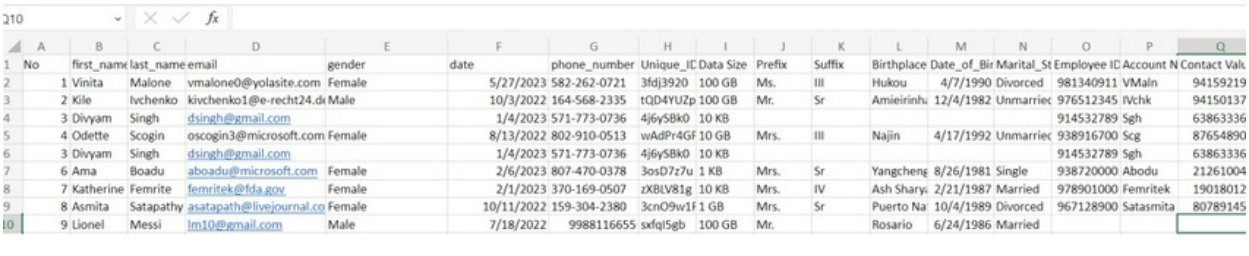
8	Asmita	Satapathy	asatapath@livejournal.co	Female	10/11/2022	159-304-2380	3cnO9w1F	1 GB	Mrs.	Sr	Puerto Na	########	Divorced	967128900	Satasmita	8078914567



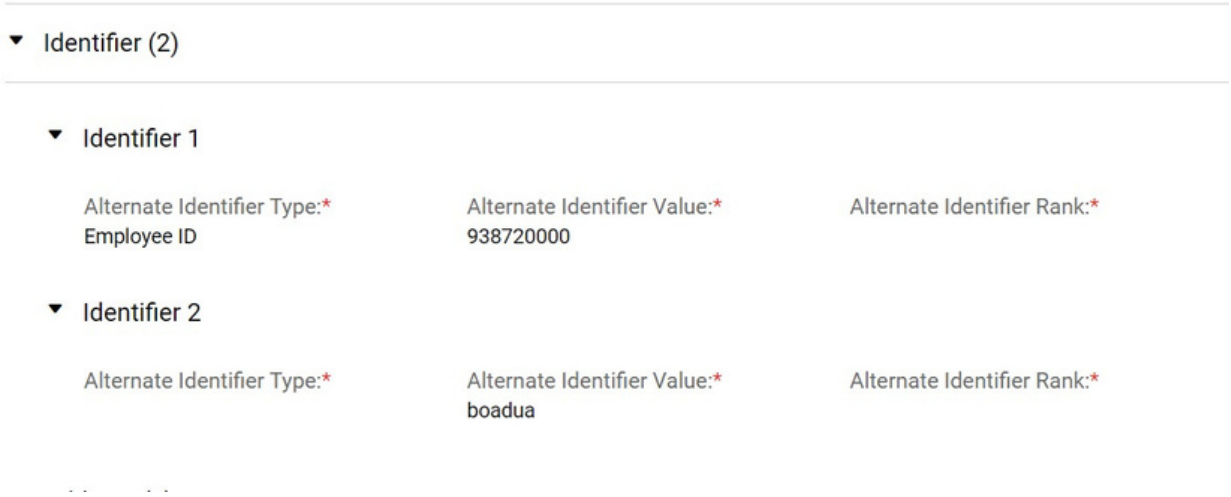
No	first_name	last_name	email	gender	date	phone_number	Unique_ID	Data Size	Prefix	Suffix	Birthplace	Date_of_Bir	Marital_St	Employee ID	Account N	Contact Valu
1	Vinita	Malone	vmalone0@yolasite.com	Female	5/27/2023	582-262-0721	3fdj3920	100 GB	Ms.	III	Hukou	4/7/1990	Divorced	981340911	VMaln	94159219
2	Kile	Ivchenko	kivchenko1@e-recht24.d	Male	10/3/2022	164-568-2335	tQD4YUZp	100 GB	Mr.	Sr	Amieirinh	12/4/1982	Unmarriec	976512345	IVchk	94150137
3	Divyam	Singh	dsingh@gmail.com		1/4/2023	571-773-0736	4j6ySBk0	10 KB						914532789	Sgh	63863336
4	Odette	Scogin	oscogin3@microsoft.com	Female	8/13/2022	802-910-0513	wAdPr4GF	10 GB	Mrs.	III	Najin	4/17/1992	Unmarriec	938916700	Scg	87654890
3	Divyam	Singh	dsingh@gmail.com		1/4/2023	571-773-0736	4j6ySBk0	10 KB						914532789	Sgh	63863336
6	Ama	Boadu	aboadu@microsoft.com	Female	2/6/2023	807-470-0378	3osD7z7u	1 KB	Mrs.	Sr	Yangcheng	8/26/1981	Single	938720000	Abodu	21261004
7	Katherine	Femrite	femritek@fda.gov	Female	2/1/2023	370-169-0507	zXBLV81g	10 KB	Mrs.	IV	Ash Sharyı	2/21/1987	Married	978901000	Femritek	19018012
8	Asmita	Satapathy	asatapath@livejournal.co	Female	10/11/2022	159-304-2380	3cnO9w1F	1 GB	Mrs.	Sr	Puerto Na	10/4/1989	Divorced	967128900	Satasmita	80789145
9	Lionel	Messi	lm10@gmail.com	Male	7/18/2022	9988116655	sxfql5gb	100 GB	Mr.		Rosario	6/24/1986	Married			

b. Integration Workflow Execution:

Execute the integration workflow, paying attention to the data validation logic or transformations. This may involve tasks like data cleansing, data transformation, or data enrichment. When records are loaded, we check them accordingly.

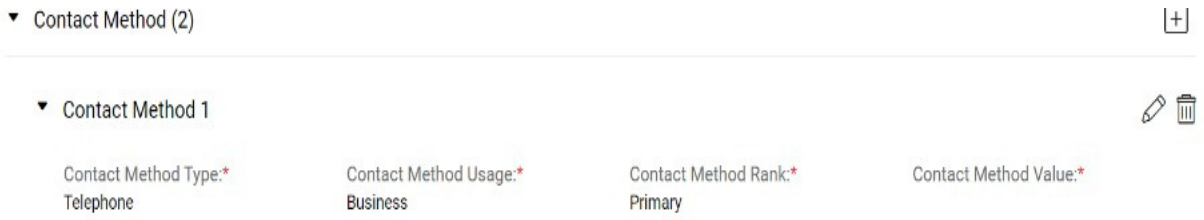
Case 1)

The Alternate Identifier Value type is different for the record named Ama Boadu.



Case 2)

Contact value for the record named Katherine Femrite is missing.

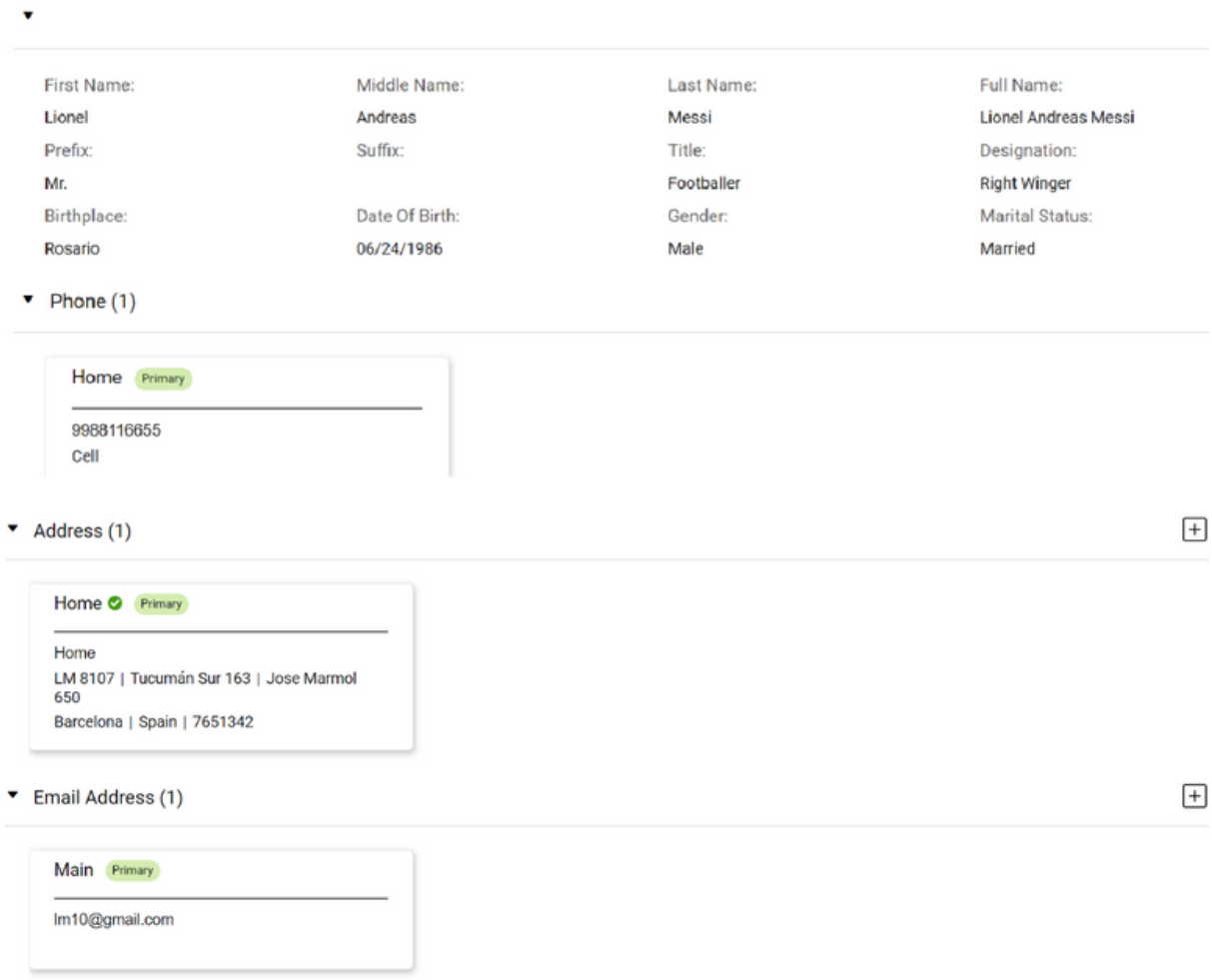


Case 3)

Employee ID for record named Asmita Satapathy is missing.

Case 4)

The previous cases all involve defects, but in this case, for record Lionel Messi, nothing is missing, so no defects are to be reported.



c. Verification:

Verify if invalid or non-compliant data is handled accordingly, such as generating errors, applying data cleansing rules, or triggering data rejection mechanisms. Report what's incorrect accordingly.

By performing these checks, including duplicate checks, null checks, invalid date checks, data size checks, and data validation checks, during manual testing in IICS, you can ensure that the data processed within your integration workflows adheres to quality standards, integrity rules, and specific data constraints.

DATA LINEAGE IN MANUAL TESTING-

Data lineage refers to the ability to trace the movement and transformation of data from its origin to its destination. In the context of manual testing in Master Data Management (MDM), data lineage can help in understanding how data flows through different stages of data load and ensure the accuracy and integrity of the data.

Here's how data lineage can be incorporated into manual testing in MDM:

- **Test Planning:**

During the test planning phase, it's important to identify the data sources and understand how the data is generated, transformed, and stored within the MDM system. This involves documenting the data flow and creating a data lineage map.

- **Test Design:**

Based on the data lineage map, design test cases to cover the key data elements and their associated transformations. Test scenarios should focus on verifying the accuracy and completeness of the data at each stage. Validation of data hierarchy in MDM.

- **Test Execution:**

During test execution, testers should track and document the data lineage as they interact with the MDM system. This includes capturing the input data used for testing, the operations performed on the data, and the resulting output.

- **Data Validation:**

After executing tests, it's important to validate the data produced at each stage against the expected results. This involves comparing the actual output with the anticipated output based on the data lineage. Any discrepancies should be logged and reported as defects.

- **Reporting and Documentation:**

The data lineage information gathered during testing should be documented and shared with relevant stakeholders. This helps in understanding the test coverage, identifying areas of improvement, and ensuring data integrity throughout the MDM system.

By incorporating data lineage into manual testing in MDM, one can establish a clear understanding of how data moves and transforms within the system, making it easier to identify and resolve issues related to data quality, accuracy, hierarchy and completeness.

DELTA VALIDATION IN MANUAL TESTING-

Delta Validation is a type of testing performed to validate updates on data. In the context of manual testing in Master Data Management (MDM), delta testing focuses on verifying the impact of changes on the data after updates.

Here's how delta testing can be carried out in manual testing in MDM:

- **Identify Changes:**

The first step in delta testing is to identify the changes made to the data.

- **Impact Analysis:**

Perform an impact analysis to understand how the changes will affect the existing data.

- **Test Case Design:**

Based on the impact analysis, create test cases that cover the affected columns or scenarios. Test cases should focus on validating the functionality and data integrity after the changes have been implemented.

- **Test Execution:**

Execute the delta test cases by performing the necessary actions to trigger the updated functionalities or processes. This may involve creating, modifying, or soft-deleting data records.

- **Data Validation:**

During test execution, verify the data integrity by comparing the expected data outcomes with the actual data outputs. Validate that the data is correctly updated, transformed, and propagated after the changes.

- **Regression Testing:**

In addition to the delta testing, it's crucial to perform regression testing to ensure that the existing functionalities and processes are not adversely affected by the changes. Execute the existing test cases for validation too.

Once all of that is done, record and report the defects to the concerned team, and once fixed, do a retest to make sure the defects have been fixed before closing them.

Delta testing in manual testing for MDM allows you to validate the impact of changes made to the data and ensure the reliability and integrity of data after updates. It helps in identifying any potential issues or discrepancies that may arise due to the changes, allowing them to be addressed promptly.

ABOUT LUMENDATA:

LumenData is a leading provider of Enterprise Data Management, Cloud & Analytics solutions provider. We enable enterprises to modernize their legacy data infrastructure and derive greater insights into their business. Founded in 2008, with locations in multiple countries, LumenData is privileged to serve over 100 of the world's leading companies, including KwikTrip, Versant Health, US Food & Drug Administration, US Department of Labor, Cummins Engine, BCG, and others.

LumenData is SOC2 certified and has instituted extensive controls to protect client data including adherence to GDPR and CCPA regulations.

Get in touch to discuss how we can facilitate data-driven transformation for your organization.

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