



Faculty of Engineering and Technology

Computer Science Department

COMP3342 – Group Number: G1

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Task 1: Write a scenario or a case study of a particular patient case study:

Case Study: Diabetes Patient

Abdullah, a 30-year-old man from Ramallah, experienced symptoms such as increased thirst, frequent urination, fatigue, and unexplained weight loss. Concerned about his health, he visited the general physician at Ramallah Hospital, Dr. Muhammad Zidan, and explained his symptoms in detail.

Dr. Zidan listened to Abdullah's concerns and suspected that the symptoms might indicate diabetes. To confirm his suspicions, Dr. Zidan referred Abdullah to the Medicare Laboratory in Ramallah for further testing. Abdullah underwent several tests, including a blood glucose test and HbA1c.

A few days later, Abdullah received his test results and went to Specialist Dr. Ahmed's clinic in Al-Bireh with the report. After reviewing the results, Dr. Ahmed confirmed that Abdullah was suffering from diabetes. He discussed the diagnosis with Abdullah and began preparing a treatment plan.

Dr. Ahmed outlined a comprehensive treatment plan for Abdullah, which included lifestyle changes, medication, and regular monitoring of blood sugar levels. He scheduled follow-up appointments to track Abdullah's progress and adjust the treatment as needed. Regular reviews were planned to ensure effective management of Abdullah's condition and to provide ongoing support.

Task 2: Draw a case study timeline:

1: Data	Data Type
Name: Abdullah	Text
Age: 30	Numerical
Address: Ramallah	Text

Symptoms:

2.1: Data	Data Type
Name: Increased Thirst.	Text

2.2: Data	Data Type
Name: Frequent Urination.	Text

2.3: Data	Data Type
Name: Fatigue.	Text

2.4: Data	Data Type
Name: Unexplained Weight Loss.	Text

Healthcare Providers:

3.1: Data	Data Type
Name: Dr. Muhammad Zidan	Text
Role: General Physician	Text
Address: Ramallah Hospital	Text

3.2: Data	Data Type
Name: Medicare Laboratory	Text
Role: Diagnostic Testing	Text
Address: Ramallah	Text

3.3: Data	Data Type
Name: Dr. Ahmed	Text
Role: Specialist (Endocrinologist)	Text
Address: Al-Bireh	Text

Procedures:

4.1: Data	Data Type
Name: Blood Glucose Test	Text
Description: Measures the level of glucose in the blood.	Text
Provider: Medicare Laboratory	Text
Outcome: Elevated blood glucose levels	Text

4.2: Data	Data Type
Name: HbA1c Test	Text
Description: Measures average blood glucose over the past 3 months.	Text
Provider: Medicare Laboratory	Text
Outcome: High HbA1c level	Text

Diagnosis:

5.1: Data	Data Type
Name: Diabetes	Text
Provider: Dr. Ahmed	Text
Description: Confirmed based on test results and symptoms.	Text

Treatment:

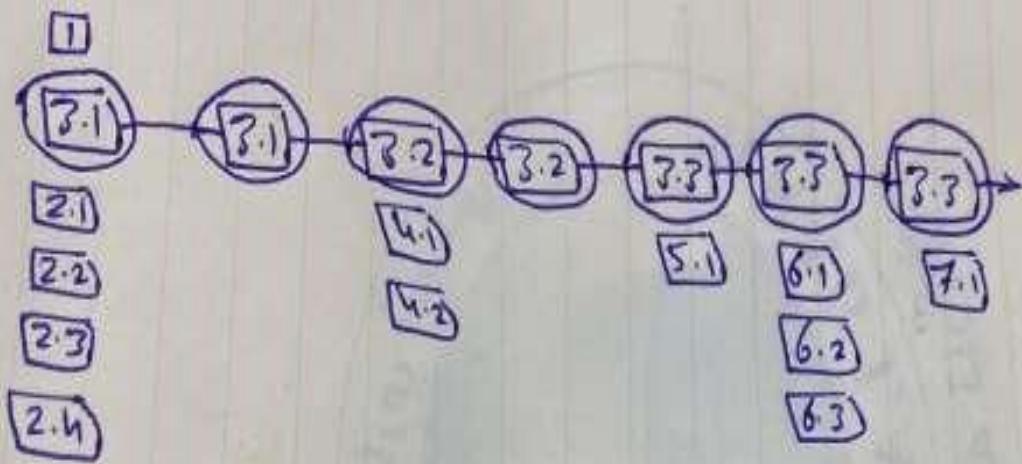
6.1: Data	Data Type
Name: Diet modification, regular exercise.	Text

6.2: Data	Data Type
Name: Prescribed diabetes medication to manage blood sugar levels.	Text

6.3: Data	Data Type
Name: Regular monitoring of blood glucose levels.	Text

Appointment:

7.1: Data	Data Type
Name: Scheduled to track progress and adjust treatment as needed.	Text



Task 3: Simulated Healthcare Data and Interoperability

In this task, we simulate healthcare data for three different healthcare providers involved in Abdullah's care: the Medicare Laboratory, the Ramallah Hospital general practitioner, and the Al-Bireh clinic of Specialist Dr. Ahmed. The following datasets represent several types of healthcare data such as drugs data, lab tests data, and medical diagnosis data. We also show how structural, syntactic, and semantic interoperability may be achieved through data flow between various providers.

S1: Ramallah hospital

The first HCP dataset is for Ramallah hospital, where Abdallah goes to when he feels the symptoms. And then Dr. Zidan refers him to the Medicare lab to do some tests.

ID	Name	Tel	Gender	Address	Date of Birth	Report	Type	Values
100-00001	Abdallah	059-2298111	Male	Ramallah	04/07/1994			
100-00002	Mohammad	056-0611234	Male	Al-Bireh	01/05/2010	flu	Diagnosis	
100-00003	Lama	056-1400975	Female	Birzeit	19/11/2000	Acamol	Drug	400 mg
100-00004	Ali	059-2588415	Male	Ramallah	31/08/1998	Fraction in hand bone	X-Ray	

S2: Medicare Lab

The second HCP dataset is for the Medicare Lab, where Abdallah do some tests to confirms his diagnosis.

P_ID	P_NAME	Address	PhoneNo	Birth_Date	Gender	Report	Type	Values
mcLab-0011	Abdallah	Ramallah	0592298111	04-07-1994	Male	Blood glucose test	Lab test	200 mg/dL
mcLab-0011	Abdallah	Ramallah	0592298111	04-07-1994	Male	HbA1c	Lab test	8.5 %
mcLab-0012	Fatima	Jenin	0567894561	25-10-1980	Female	Cholesterol Panel	Lab test	
mcLab-0013	Omar	Nablus	0591234567	12-01-1975	Male	Appendicitis	Ultrasound	

S3: Dr. Ahmad Clinic

The third and last HCP dataset represents the patients that visits Dr. Ahmad Specialist Clinic.

ID	Name	Sex	Address	DOB	Telephone	Finding	Action	Values
AhC-001	Abdallah	M	Ramallah	4 Jun 1994	+970592298111	Diabetes_type2	Diagnosis	
AhC-002	Salma	F	Al-Bireh	12 Mar 1988	+970569876543	Hypertension	Diagnosis	
AhC-003	Khaled	M	Birzeit	22 Aug 1992	+970568123456	High Cholesterol	Diagnosis	

Interoperability implementation

1. Structural Interoperability

The preservation of the meaning and format of data during data transmission across systems is guaranteed by structural interoperability. We were using a relational Database to represent each data set to store and exchange the data; to achieve the goal of the Structural Interoperability we need to do some mapping on the datasets like the following:

A- To achieve the structural interoperability between S1 and S2 we need to create the following Data Structure mapping template:

S1.ID = S2.P_ID
S1.Name = S2.P_NAME
S1.Tel = S2.PhoneNo
S1.Gender = S2.Gender
S1.Address = S2.Address
S1.DateOfBirth = S2.Birth_Date
S1.Report = S2.Report
S1.Type = S2.Type
S1.Values = S2.Values

To achieve the structural interoperability between S1 and S3 we need to create the following Data Structure mapping template:

S1.ID = S3.ID
S1.Name = S3.Name
S1.Tel = S3.Telephone
S1.Gender = S3.Sex
S1.Address = S3.Address
S1.DateOfBirth = S3.DOB
S1.Report = S3.Finding
S1.Type = S3.Action
S1.Values = S3.Values

B- To achieve the structural interoperability between S2 and S3 we need to create the following Data Structure mapping template:

S2.P_ID = S3.ID
S2.P_NAME = S3.Name
S2.Address = S3.Address
S2.PhoneNo = S3.Telephone
S2.Bith_Date = S3.DOB
S2.Gender = S3.Sex
S2.Report = S3.Finding
S2.Type = S3.Action
S2.Values = S3.Values

After mapping the tables we will have structural interoperability, the data will be represented with a uniform structure.

The unified Data Structure between S1 and S2 is:

ID	Name	Tel	Gender	Address	Date of Birth	Report	Type	Values
100-00001	Abdallah	0592298111	Male	Ramallah	04/07/1994	Blood glucose test	Lab test	200 mg/dL
100-00001	Abdallah	0592298111	Male	Ramallah	04/07/1994	HbA1c	Lab test	8.5%
100-00002	Mohammad	0560611234	Male	Al-Bireh	01/05/2010	Flu	Diagnosis	
100-00003	Lama	0561400975	Female	Birzeit	19/11/2000	Acamol	Drug	400 mg
100-00004	Ali	0592588415	Male	Ramallah	31/08/1998	Fraction in hand bone	X-Ray	

The unified Data Structure between S1 and S3 is:

ID	Name	Tel	Gender	Address	Date of Birth	Report	Type	Values
100-00001	Abdallah	+970592298111	Male	Ramallah	04/07/1994	Diabetes_type2	Diagnosis	
100-00002	Salama	+970569876543	Female	Al-Bireh	12/03/1988	Hypertension	Diagnosis	
100-00003	Khaled	+970568123456	Male	Birzeit	22/08/1992	High Cholesterol	Diagnosis	
100-00004	Ali	+970592588415	Male	Ramallah	31/08/1998	Fraction in hand bone	X-Ray	

The unified Data Structure between S2 and S3 is:

P_ID	P_NAME	Address	PhoneNo	Birth_Date	Gender	Report	Type	Values
mcLab-0011	Abdallah	Ramallah	059-2298111	04-07-1994	Male	Blood glucose test	Lab test	200 mg/dL
mcLab-0011	Abdallah	Ramallah	056-9876543	04-07-1994	Male	HbA1c	Lab test	8.5 %
mcLab-0012	Fatima	Jenin	056-7894561	25-10-1980	Female	Cholesterol Panel	Lab test	
mcLab-0013	Omar	Nablus	059-1234567	12-01-1975	Male	Appendicitis	Ultrasound	

2. Syntactic Interoperability

Here, we must make sure that each data type's syntax is consistently stored and that each type's stored values are consistently recorded in each column in order, and as we see in the previous datasets, we already achieved syntactic interoperability.

3. Semantic Interoperability

In this interoperability type, we ensure that the meaning of the exchanged data is preserved and understood across different systems. We will use standardized terminologies to achieve it, like SNOMED CT for Diagnosis/Disease, LOINC of lab test, or RxNorm for drugs.

Then we will send messages from system to system, this done by sending the single row as a message from the source system to destination, now we want to track Abdallah's record.

⇒ First, Abdallah is sent to Medicare Lab with requests for Blood Glucose and HbA1c tests to send from S1 to S2 as a semantically.

interoperable message for Blood Glucose test:

Message1=(

ID = "100-00001", semanticType=none;

Name = "Abdallah", semanticType=none;

Tel = 059-2298111, semanticType=none;

DateOfBirth = 04/07/1994, semanticType=none;

Values = "200", unit = "mg/dL", semanticType = Unit, code = "mg/dL";

Report = "Blood glucose test", semanticType = LOINC, code = "2339-0";

)

interoperable message for HbA1c test:

```
Message2=(  
ID = "100-00001", semantictype = none;  
Name = "Abdallah", semantictype = none;  
Tel = "059-2298111", semantictype = none;  
DateOfBirth = "04/07/1994", semantictype = none;  
Values = "8.5", unit = "%", semantictype = Unit, code = "%";  
Report = "HbA1c", semantictype = LOINC, code = "4548-4";  
)
```

⇒ Second Abdullah's test results from Medicare Lab are sent to Dr. Ahmad Clinic.

```
Message1 = (  
ID = "mcLab-0011", semantictype = none;  
Name = "Abdallah", semantictype = none;  
Tel = "059-2298111", semantictype = none;  
DateOfBirth = "1994-04-07", semantictype = none;  
Values = "200", unit = "mg/dL", semantictype = Unit, code = "mg/dL";  
Report = "Blood glucose test", semantictype = LOINC, code = "2339-0";  
)
```

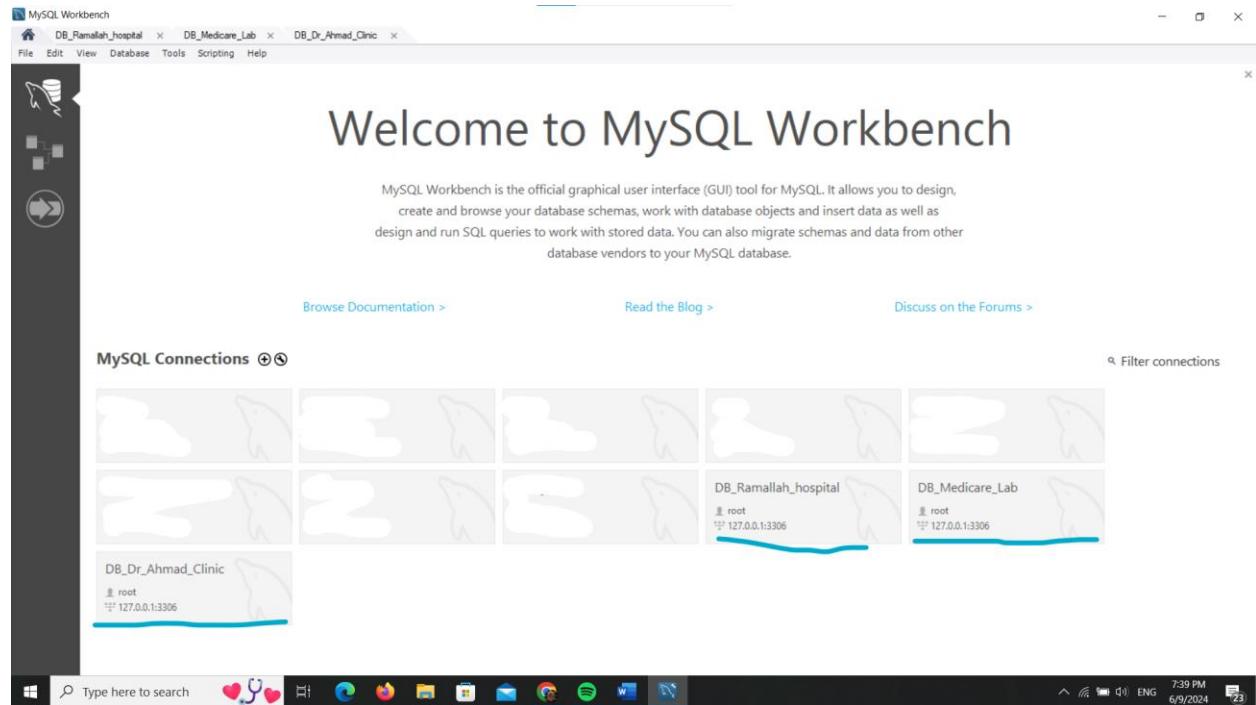
```
Message2 = (  
ID = "mcLab-0011", semantictype = none;  
Name = "Abdallah", semantictype = none;  
Tel = "059-2298111", semantictype = none;  
DateOfBirth = "1994-04-07", semantictype = none;  
Values = "8.5", unit = "%", semantictype = Unit, code = "%";  
Report = "HbA1c", semantictype = LOINC, code = "4548-4";  
)
```

By specifying the semantic kinds and employing standardized codes, we establish semantic interoperability. This guarantees that the meaning of the data is kept and understood across multiple systems, promoting accurate and consistent data interchange between healthcare providers.

Task 4: Develop an interoperability flow/framework:

We used the mirth connect

At first we set the provider data on database (mysql):



- DB_Ramallah_hospital:

MySQL Workbench

DB_Ramallah_hospital × DB_Medicare_Lab × DB_Dr_Ahmad_Clinic ×

File Edit View Query Database Server Tools Scripting Help

Navigator: DB_Ramallah_hospital ×

SCHEMAS

No object selected

Result Grid | Filter Rows | Export | Wrap Cell Content: 15

```

21 • INSERT INTO ramallah_hospital (ID, Name, Tel, Gender, Address, Date_of_Birth, Report, Type, Value) VALUES
('100-0001', 'Abdallah', '059-2298111', 'Male', 'Ramallah', '04/07/1994', NULL, NULL, NULL),
('100-0002', 'Mohammad', '056-0611234', 'Male', 'Al-Bireh', '01/05/2010', 'flu', 'Diagnosis', NULL),
('100-0003', 'Lama', '056-1400975', 'Female', 'Birzeit', '19/11/2000', 'Acamol', 'Drug', '400 mg'),
('100-0004', 'Ali', '059-2588415', 'Male', 'Ramallah', '31/08/1998', 'Fracture in hand bone', 'X-Ray', NULL);
22 • select * from Ramallah_hospital
23
24
25
26
27 • select * from Ramallah_hospital
28

```

ID	Name	Tel	Gender	Address	Date_of_Birth	Report	Type	Value
100-0001	Abdallah	059-2298111	Male	Ramallah	04/07/1994			
100-0002	Mohammad	056-0611234	Male	Al-Bireh	01/05/2010	flu	Diagnosis	
100-0003	Lama	056-1400975	Female	Birzeit	19/11/2000	Acamol	Drug	400 mg
100-0004	Ali	059-2588415	Male	Ramallah	31/08/1998	Fracture in hand bone	X-Ray	

Output

Action Output

#	Time	Action	Message	Duration / Fetch
7	19:42:04	INSERT INTO ramallah_hospital (ID, Name, Tel, Gender, Address, Date_of_Birth, Report, Type, Value) VALUES ('100-0001', 'Abdallah', '059-2298111', 'Male', 'Ramallah', '04/07/1994', NULL, NULL, NULL)	4 row(s) affected Records: 4 Duplicates: 0 Warnings: 0	0.016 sec
8	19:42:06	select * from Ramallah_hospital LIMIT 0, 400	4 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

Query Completed

- DB_Medicare_Lab:

MySQL Workbench

DB_Ramallah_hospital × DB_Medicare_Lab × DB_Dr_Ahmad_Clinic ×

File Edit View Query Database Server Tools Scripting Help

Navigator: DB_Medicare_Lab ×

SCHEMAS

No object selected

Result Grid | Filter Rows | Export | Wrap Cell Content: 15

```

21 • INSERT INTO medicare_lab (P_ID, P_NAME, Address, PhoneNo, Birth_Date, Gender, Report, Type, Value) VALUES
('mclab-0011', 'Abdallah', 'Ramallah', '0592298111', '04-07-1994', 'Male', 'Blood glucose test', 'Lab test', '200 mg/dL'),
('mclab-0011', 'Abdallah', 'Ramallah', '0592298111', '04-07-1994', 'Male', 'HbA1c', 'Lab test', '8.5 %'),
('mclab-0012', 'Fatima', 'Jenin', '0567894561', '25-10-1980', 'Female', 'Cholesterol Panel', 'Lab test', NULL),
('mclab-0013', 'Omar', 'Nablus', '0591234567', '12-01-1975', 'Male', 'Appendicitis', 'Ultrasound', NULL);
22 • select * from medicare_lab
23
24
25
26
27 • select * from medicare_lab
28

```

P_ID	P_NAME	Address	PhoneNo	Birth_Date	Gender	Report	Type	Value
mclab-0011	Abdallah	Ramallah	0592298111	04-07-1994	Male	Blood glucose test	Lab test	200 mg/dL
mclab-0011	Abdallah	Ramallah	0592298111	04-07-1994	Male	HbA1c	Lab test	8.5 %
mclab-0012	Fatima	Jenin	0567894561	25-10-1980	Female	Cholesterol Panel	Lab test	
mclab-0013	Omar	Nablus	0591234567	12-01-1975	Male	Appendicitis	Ultrasound	

Output

Action Output

#	Time	Action	Message	Duration / Fetch
2	19:44:13	use DB_Medicare_Lab	0 row(s) affected	0.000 sec
3	19:44:15	drop table medicare_lab	0 row(s) affected	0.031 sec
4	19:44:17	CREATE TABLE medicare_lab (P_ID VARCHAR(255), P_NAME VARCHAR(255), Address VARCHAR(255), ...)	0 row(s) affected	0.032 sec
5	19:44:19	INSERT INTO medicare_lab (P_ID, P_NAME, Address, PhoneNo, Birth_Date, Gender, Report, Type, Value) VALUES ('mclab-0011', 'Abdallah', 'Ramallah', '0592298111', '04-07-1994', 'Male', 'Blood glucose test', 'Lab test', '200 mg/dL')	4 row(s) affected Records: 4 Duplicates: 0 Warnings: 0	0.015 sec
6	19:44:21	select * from medicare_lab LIMIT 0, 400	4 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

Query Completed

- DB_Dr_Ahmad_Clinic:

The screenshot shows the MySQL Workbench interface with the database 'DB_Dr_Ahmad_Clinic' selected. In the SQL tab, the following code was run:

```

19 • drop table dr_ahmad_clinic;
20
21 • INSERT INTO dr_ahmad_clinic (ID, Name, Gender, Address, DOB, Telephone, Finding, Action, Value) VALUES
22 ('AHC-001', 'Abdullah', 'M', 'Ramallah', '4 Jun 1994', '+970592298111', 'Diabetes_type2', 'Diagnosis', NULL),
23 ('AHC-002', 'Salma', 'F', 'Al-Bireh', '12 Mar 1988', '+970569876543', 'Hypertension', 'Diagnosis', NULL),
24 ('AHC-003', 'Khaled', 'M', 'Birzeit', '22 Aug 1992', '+970568123456', 'High Cholesterol', 'Diagnosis', NULL);
25
26
27 • select * from dr_ahmad_clinic
  
```

The Result Grid shows the data inserted into the table:

ID	Name	Gender	Address	DOB	Telephone	Finding	Action	Value
AHC-001	Abdullah	M	Ramallah	4 Jun 1994	+970592298111	Diabetes_type2	Diagnosis	NULL
AHC-002	Salma	F	Al-Bireh	12 Mar 1988	+970569876543	Hypertension	Diagnosis	NULL
AHC-003	Khaled	M	Birzeit	22 Aug 1992	+970568123456	High Cholesterol	Diagnosis	NULL

The Output tab shows the execution history:

#	Time	Action	Message	Duration / Fetch
1	19:45:11	use DB_Dr_Ahmad_Clinic	0 rows(s) affected	0.000 sec
2	19:45:13	drop table dr_ahmad_clinic	0 row(s) affected	0.031 sec
3	19:45:15	CREATE TABLE dr_ahmad_clinic (ID VARCHAR(255), Name VARCHAR(255), Gender VARCHAR(255), Ad...)	0 rows(s) affected	0.016 sec
4	19:45:17	INSERT INTO dr_ahmad_clinic (ID,Name,Gender,Address,DOB,Telephone,Finding,Action,Value) VALUES ('AHC-001','Abdullah','M','Ramallah','4 Jun 1994','+970592298111','Diabetes_type2','Diagnosis',NULL)	3 rows(s) affected Records: 3 Duplicates: 0 Warnings: 0	0.000 sec
5	19:45:35	select * from dr_ahmad_clinic LIMIT 0, 400	3 row(s) returned	0.000 sec / 0.000 sec

After that in mirth connect we create three channels:

The screenshot shows the Mirth Connect Administrator interface. The Channels section lists three channels:

Status	Data Type	Name	Id	Local Id	Description	Rev Δ	Last Deployed	Last Modified
Enabled	XML	[Default Group]	Default Group	--	Channels not part of a group will appear here.	--	--	--
Enabled	XML	Ramallah-hospital_2_Dr-Ahmad-Clinic	333d6e85-f7c2-e41a-0926109e92e	2		--	--	2024-06-09 00:56
Enabled	XML	Ramallah-hospital_2_Medicare-Lab	f019b5eb-b610-4612-b670-a009efdf5dfe	1		--	--	2024-06-08 23:09
Enabled	XML	Medicare-Lab_2_Dr-Ahmad-Clinic	f6b99c4-4e45-4eca-9ffc-764a0765fbcc	3		--	--	2024-06-09 00:43

- Ramallah-Hospital_2_Medicare-Lab:

<https://localhost:8443> - Mirth Connect Administrator - (4.5.0)

Edit Channel - Ramallah-Hospital_2_Medicare-Lab

Channel Properties

- Name: Ramallah-Hospital_2_Medicare-Lab Enabled
- Data Types: [Set Data Types](#) (1)
- Dependencies: [Set Dependencies](#)
- Initial State: Started
- Attachment: None Store At Destination
- Tags: Enter channel tag

Message Storage

- Development
 - Content: All
 - Metadata: All
 - Durable Message Delivery: On
 - Performance
 - Encrypt message content
 - Attachments
 - Custom metadata
 - Remove content on completion
 - Filtered only
 - Remove attachments on completion

Custom Metadata

SOURCE	TYPE
--------	------

Channel Description

Connected to: <https://localhost:8443> as admin (admin/admin) | 8:26 PM EST (UTC +10)

8:26 PM 6/9/2024

<https://localhost:8443> - Mirth Connect Administrator - (4.5.0)

Edit Channel - Ramallah-Hospital_2_Medicare-Lab

Connector Type: [Database Reader](#)

Polling Settings

- Schedule Type: [Interval](#) Next poll at: Monday, Jun 10, 12:00:00 AM
- Poll Once on Start: Yes No
- Interval: 12 [hours]

Source Settings

- Source Queue: OFF (Respond after processing)
- Queue Buffer Size: 1000
- Response: Name
- Process Batch: Yes No
- Batch Response: First Last
- Max Processing Threads: 1

Database Reader Settings

- Driver: MySQL com.mysql.cj.jdbc.Driver
- URL: jdbc:mysql://localhost:3306/DB_Ramallah_hospital
- Username: root
- Password: *****
- Use Javascript: Yes No
- Keep Connection Open: Yes No
- Aggregate Results: Yes No
- Cache Results: Yes No
- Fetch Size: 1000
- # of Retries on Error: 3
- Retry Interval (ms): 10000
- Encoding: Default

```
SQL:
1: SELECT ramallah_hospital.ID AS ramallah_hospital_ID, ramallah_hospital.Name AS ramallah_hospital_Name, ramallah_hospital.Tel AS ramallah_hospital_Tel, ramallah_hospital.Gender AS ramallah_hospital_Gender, ramallah_hospital.Date_of_Birth, ramallah_hospital.Report
2: FROM ramallah_hospital
```

Run Post-Process SQL: Never After each message Once after all messages

SQL:

Generated: [Connection](#) [Select](#)

Variables:

- ramallah_hospital.ID
- ramallah_hospital.name
- ramallah_hospital.tel
- ramallah_hospital.gender
- ramallah_hospital.address
- date_of_birth
- ramallah_hospital.report
- ramallah_hospital.hospital

Connected to: <https://localhost:8443> as admin (admin/admin) | 8:28 PM EST (UTC +10)

8:28 PM 6/9/2024

https://localhost:8443 - Mirth Connect Administrator - (4.5.0)

Edit Channel - Ramallah-Hospital_2_Medicare-Lab - Source Transformer

Enabled	#	Name	Type
<input checked="" type="checkbox"/>	0	ramallah_hospital_id	Mapper
<input checked="" type="checkbox"/>	1	ramallah_hospital_name	Mapper
<input checked="" type="checkbox"/>	2	ramallah_hospital_tel	Mapper
<input checked="" type="checkbox"/>	3	ramallah_hospital_gender	Mapper
<input checked="" type="checkbox"/>	4	ramallah_hospital_address	Mapper
<input checked="" type="checkbox"/>	5	date_of_birth	Mapper
<input checked="" type="checkbox"/>	6	ramallah_hospital_report	Mapper
<input checked="" type="checkbox"/>	7	ramallah_hospital_type	Mapper
<input checked="" type="checkbox"/>	8	ramallah_hospital_value	Mapper

Step | Generated Script |

Variable: ramallah_hospital_id
Mapping: msg[ramallah_hospital_id].toString()

Default Value:

String Replacement:

Regular Expression	Replace With
"100"	"medLab"

Reference | Message Trees | Message Templates |

Category: All
Filter:

- All
- Get Serializer
- Convert XML to JSON
- Convert JSON to XML
- Convert Delimited Text to XML (default parameters)
- Convert Delimited Text to XML (custom parameters)
- Convert XML to Delimited Text (custom parameters)
- Convert XML to Delimited Text (default parameters)
- Convert HLT v2.x to XML (default parameters)
- Convert HLT v2.x to XML (custom parameters)
- Convert XML to HLT v2.x (default parameters)
- Convert XML to HLT v2.x (custom parameters)
- Convert DICOM to XML (default parameters)
- Convert XML to DICOM (default parameters)
- Convert HLT v3.x to XML (default parameters)
- Convert HLT v3.x to XML (custom parameters)
- Convert XML to HLT v3.x (default parameters)
- Convert NDPOP to XML (default parameters)
- Convert NDPOP to XML (Custom parameters)
- Convert XML to NDPOP (default parameters)

Available Variables

https://localhost:8443 - Mirth Connect Administrator - (4.5.0)

Edit Channel - Ramallah-Hospital_2_Medicare-Lab - Source Transformer

Enabled	#	Name	Type
<input checked="" type="checkbox"/>	0	ramallah_hospital_id	Mapper
<input checked="" type="checkbox"/>	1	ramallah_hospital_name	Mapper
<input checked="" type="checkbox"/>	2	ramallah_hospital_tel	Mapper
<input checked="" type="checkbox"/>	3	ramallah_hospital_gender	Mapper
<input checked="" type="checkbox"/>	4	ramallah_hospital_address	Mapper
<input checked="" type="checkbox"/>	5	date_of_birth	Mapper
<input checked="" type="checkbox"/>	6	ramallah_hospital_report	Mapper
<input checked="" type="checkbox"/>	7	ramallah_hospital_type	Mapper
<input checked="" type="checkbox"/>	8	ramallah_hospital_value	Mapper

Step | Generated Script |

Variable: ramallah_hospital_tel
Mapping: msg[ramallah_hospital_tel].toString()

Default Value:

String Replacement:

Regular Expression	Replace With
"1234567890"	"1234567890"

Reference | Message Trees | Message Templates |

Category: All
Filter:

- All
- Get Serializer
- Convert XML to JSON
- Convert JSON to XML
- Convert Delimited Text to XML (default parameters)
- Convert Delimited Text to XML (custom parameters)
- Convert XML to Delimited Text (custom parameters)
- Convert XML to Delimited Text (default parameters)
- Convert HLT v2.x to XML (default parameters)
- Convert HLT v2.x to XML (custom parameters)
- Convert XML to HLT v2.x (default parameters)
- Convert XML to HLT v2.x (custom parameters)
- Convert DICOM to XML (default parameters)
- Convert XML to DICOM (default parameters)
- Convert HLT v3.x to XML (default parameters)
- Convert HLT v3.x to XML (custom parameters)
- Convert XML to HLT v3.x (default parameters)
- Convert NDPOP to XML (default parameters)
- Convert NDPOP to XML (Custom parameters)
- Convert XML to NDPOP (default parameters)

Available Variables

ramallah_hospital_id
ramallah_hospital_name

https://localhost:8443 - Mirth Connect Administrator - (4.5.0)

Edit Channel - Ramallah-Hospital_2_Medicare-Lab - Source Transformer

Enabled	#	Name	Type
<input checked="" type="checkbox"/>	0	ramallah_hospital_id	Mapper
<input checked="" type="checkbox"/>	1	ramallah_hospital_name	Mapper
<input checked="" type="checkbox"/>	2	ramallah_hospital_tel	Mapper
<input checked="" type="checkbox"/>	3	ramallah_hospital_gender	Mapper
<input checked="" type="checkbox"/>	4	ramallah_hospital_address	Mapper
<input checked="" type="checkbox"/>	5	date_of_birth	Mapper
<input checked="" type="checkbox"/>	6	ramallah_hospital_report	Mapper
<input checked="" type="checkbox"/>	7	ramallah_hospital_type	Mapper
<input checked="" type="checkbox"/>	8	ramallah_hospital_value	Mapper

Step Generated Script

Variable: date_of_birth
Mapping: msg['date_of_birth'].toString()
Default Value:

String Replacement:

Regular Expression	Replace With
/"/	"

Reference | Message Trees | Message Templates

Category: All

Get Serializer
Convert XML to JSON
Convert JSON to XML
Convert Delimited Text to XML (default parameters)
Convert Delimited Text to XML (custom parameters)
Convert XML to Delimited Text (default parameters)
Convert HLT v2.x to XML (default parameters)
Convert HLT v2.x to XML (custom parameters)
Convert XML to HLT v3.x (default parameters)
Convert XML to HLT v3.x (custom parameters)
Convert DICOM to XML (default parameters)
Convert XML to DICOM (default parameters)
Convert HLT v3.x to XML (default parameters)
Convert HLT v3.x to XML (custom parameters)
Convert XML to HLT v3.x (default parameters)
Convert NDOP to XML (default parameters)
Convert NDOP to XML (custom parameters)
Convert XML to NDOP (default parameters)

Available Variables

- ramallah_hospital_id
- ramallah_hospital_name
- ramallah_hospital_tel
- ramallah_hospital_gender
- ramallah_hospital_address

Connected to: https://localhost:8443 as admin (admin/admin) | 8:30 PM EEST (UTC +3)

8:30 PM ENG 6/9/2024

https://localhost:8443 - Mirth Connect Administrator - (4.5.0)

Edit Channel - Ramallah-Hospital_2_Medicare-Lab

Summary | Source | Destinations | Scripts

Status Destination 1 Connector Type: Database Writer Chain: 1

Destination Settings

Queue Messages: Never On Failure Always

Advanced Queue Settings: 0 Retries

Validate Response: Yes No

Reattach Attachments: Yes No

Database Writer Settings

Driver: MySQL com.mysql.cj.jdbc.Driver

URL: jdbc:mysql://localhost:3306/DB_Medicare_Lab Insert URL Template

Username: root

Password: *****

Use JavaScript: Yes No

SQL:

```
INSERT INTO medicare_lab (P_ID, P_NAME, Address, PhoneNo, Birth_Date, Gender, Report, Type, Value) VALUE
(${ramallah_hospital_id}, ${ramallah_hospital_name}, ${ramallah_hospital_address}, ${ramallah_hospital_tel}, ${date_of_birth}, ${ramallah_hospital_gender}, ${ramallah_hospital_report}, ${ramallah_hospital_type}, ${ramallah_hospital_value})
```

Destination Mappings

- Channel ID
- Channel Name
- Message ID
- Raw Data
- Transformed Data
- Encoded Data
- Message Source
- Message Type
- Message Version
- Message Hash
- Date
- Formatted Date
- Timestamp
- Unique ID
- Original File Name
- Count
- XML Entity Encoder
- XML Entity Decoder
- Escape JSON String
- JSON Pretty Printer
- CDATA Tag
- DECORATE message Raw Data
- ramallah_hospital_id
- ramallah_hospital_name
- ramallah_hospital_tel
- ramallah_hospital_gender
- ramallah_hospital_address
- date_of_birth
- ramallah_hospital_report
- ramallah_hospital_type
- ramallah_hospital_value

Connected to: https://localhost:8443 as admin (admin/admin) | 8:27 PM EEST (UTC +3)

8:27 PM ENG 6/9/2024

● Ramallah-hospital_2_Dr-Ahmad-Clinic:

<https://localhost:8443> - Mirth Connect Administrator - (4.5.0)

Connected to: https://localhost:8443 as admin (admin/admin) | 7:50 PM EST (UTC +3)

Mirth Connect by nextGen Healthcare

Id: 333d6e85-f7c2-492c-a1a-09261d9e92e
Revision: 7
Last Modified: 2024-06-09 00:56:09

<https://localhost:8443> - Mirth Connect Administrator - (4.5.0)

Connected to: https://localhost:8443 as admin (admin/admin) | 7:52 PM EST (UTC +3)

Mirth Connect by nextGen Healthcare

Generated: Connection Select

Generated: Connection Update

Connected to: https://localhost:8443 as admin (admin admin) | 7:53 PM EEST (UTC +2)

https://localhost:8443 - Mirth Connect Administrator - (4.5.0)

Edt Channel - Ramallah-hospital_2_Dr-Ahmad-Clinic - Source Transformer

Mirth Connect Views

Transformer Tasks

- Add New Step
- Delete Step
- Assign To Listener
- Stop Transformer
- Export Transformer
- Validate Transformer
- Validate Step
- Move Step Down

Other

- Notifications
- View User API
- View Client API
- Help
- About Mirth Connect
- NextGen HealthCare
- Report Issue
- Logout

Enabled # Name Type Reference Message Trees Message Templates

Enabled	#	Name	Type	Reference	Message Trees	Message Templates
<input checked="" type="checkbox"/>	0	ramallah_hospital_id	Mapper			
<input checked="" type="checkbox"/>	1	ramallah_hospital_name	Mapper			
<input checked="" type="checkbox"/>	2	ramallah_hospital_isl	Mapper			
<input checked="" type="checkbox"/>	3	ramallah_hospital_gender	Mapper			
<input checked="" type="checkbox"/>	4	ramallah_hospital_address	Mapper			
<input checked="" type="checkbox"/>	5	date_of_birth	Mapper			
<input checked="" type="checkbox"/>	6	ramallah_hospital_report	Mapper			
<input checked="" type="checkbox"/>	7	ramallah_hospital_type	Mapper			
<input checked="" type="checkbox"/>	8	ramallah_hospital_value	Mapper			

Steps Generated Script

Variable: ramallah_hospital_id Add to: Channel Map

Mapping: msg[ramallah_hospital_id].toString()

Default Value:

String Replacements

Regular Expression	Replace With
"100"	"AHC"

Category: All Filter: All

- Get Serializer
- Convert XML to JSON
- Convert JSON to XML
- Convert Delimited Text to XML (default parameters)
- Convert Delimited Text to XML (custom parameters)
- Convert XML to Delimited Text (default parameters)
- Convert XML to Delimited Text (custom parameters)
- Convert H.2.2.x to XML (default parameters)
- Convert H.2.2.x to XML (custom parameters)
- Convert H.7.7.2.x (default parameters)
- Convert H.7.7.2.x (Custom parameters)
- Convert DICOM to XML (default parameters)
- Convert DICOM to XML (custom parameters)
- Convert XML to DICOM (default parameters)
- Convert H.7.3.x to XML (default parameters)
- Convert H.7.3.x to XML (Custom parameters)
- Convert XML to H.7.3.x (default parameters)
- Convert XML to H.7.3.x (Custom parameters)
- Convert HOPD to XML (default parameters)
- Convert HOPD to XML (custom parameters)
- Convert XML to HOPD (default parameters)

Available Variables

7:53 PM ENG 6/9/2024

Connected to: https://localhost:8443 as admin (admin admin) | 7:53 PM EEST (UTC +2)

https://localhost:8443 - Mirth Connect Administrator - (4.5.0)

Edit Channel - Ramallah-hospital_2_Dr-Ahmad-Clinic - Source Transformer

Transformer Tasks

- Add New Step
- Delete Step
- Assign To Monitor
- Run Transformer
- Export Transformer
- Validate Transformer
- Validate Step
- Move Step Up
- Move Step Down

Other

- Notifications
- View User API
- View Client API
- Help
- About Mirth Connect
- Visit nextgen.com
- Report Issue
- Logout

Reference | Message Trees | Message Templates

Category: All

Filter: All

Enabled	#	Name	Type
<input checked="" type="checkbox"/>	0	ramallah_hospital_id	Mapper
<input checked="" type="checkbox"/>	1	ramallah_hospital_name	Mapper
<input checked="" type="checkbox"/>	2	ramallah_hospital_tel	Mapper
<input checked="" type="checkbox"/>	3	ramallah_hospital_gender	Mapper
<input checked="" type="checkbox"/>	4	ramallah_hospital_address	Mapper
<input checked="" type="checkbox"/>	5	date_of_birth	Mapper
<input checked="" type="checkbox"/>	6	ramallah_hospital_report	Mapper
<input checked="" type="checkbox"/>	7	ramallah_hospital_type	Mapper
<input checked="" type="checkbox"/>	8	ramallah_hospital_value	Mapper

Steps | Generated Script

Variable: ramallah_hospital_tel
Mapping: msg[ramallah_hospital_tel].toString()

Add to: Channel Map

Default value:

String Replacement:

Regular Expression

Replace With

New

Delete

Available Variables

ramallah_hospital_id
ramallah_hospital_name

7:53 PM 6/9/2024 ENG 23

https://localhost:8443 - Mirth Connect Administrator - (4.5.0)

Edit Channel - Ramallah-hospital_2_Dr-Ahmad-Clinic - Source Transformer

Enabled	#	Name	Type
<input checked="" type="checkbox"/>	0	ramallah_hospital_id	Mapper
<input checked="" type="checkbox"/>	1	ramallah_hospital_name	Mapper
<input checked="" type="checkbox"/>	2	ramallah_hospital_tel	Mapper
<input checked="" type="checkbox"/>	3	ramallah_hospital_gender	Mapper
<input checked="" type="checkbox"/>	4	ramallah_hospital_address	Mapper
<input checked="" type="checkbox"/>	5	date_of_birth	Mapper
<input checked="" type="checkbox"/>	6	ramallah_hospital_report	Mapper
<input checked="" type="checkbox"/>	7	ramallah_hospital_type	Mapper
<input checked="" type="checkbox"/>	8	ramallah_hospital_value	Mapper

Step | Generated Script | Reference | Message Trees | Message Templates |

Transformer Tasks: Add New Step, Delete Step, Assign To Router, Import Transformer, Export Transformer, Validate Transformer, Validate Step, Move Step Up, Move Step Down

Other: Notifications, View User API, View Client API, Help, About Mirth Connect, Visit nextgen.com, Report Issue, Logout

Connected to: https://localhost:8443 as admin (admin/admin) | 8:23 PM EST (UTC +0) | 6/9/2024 | 8:24 PM | ENG | 23

Step | Generated Script | Reference | Message Trees | Message Templates |

Variable: ramallah_hospital_gender

Mapping: msg['ramallah_hospital_gender'].toString()

Default Value:

String Replacement	Regular Expression	Replace With
'Male'	'M'	
'Female'	'F'	

Available Variables: ramallah_hospital_id, ramallah_hospital_name, ramallah_hospital_tel

https://localhost:8443 - Mirth Connect Administrator - (4.5.0)

Edit Channel - Ramallah-hospital_2_Dr-Ahmad-Clinic - Source Transformer

Enabled	#	Name	Type
<input checked="" type="checkbox"/>	0	ramallah_hospital_id	Mapper
<input checked="" type="checkbox"/>	1	ramallah_hospital_name	Mapper
<input checked="" type="checkbox"/>	2	ramallah_hospital_tel	Mapper
<input checked="" type="checkbox"/>	3	ramallah_hospital_gender	Mapper
<input checked="" type="checkbox"/>	4	ramallah_hospital_address	Mapper
<input checked="" type="checkbox"/>	5	date_of_birth	Mapper
<input checked="" type="checkbox"/>	6	ramallah_hospital_report	Mapper
<input checked="" type="checkbox"/>	7	ramallah_hospital_type	Mapper
<input checked="" type="checkbox"/>	8	ramallah_hospital_value	Mapper

Step | Generated Script | Reference | Message Trees | Message Templates |

Transformer Tasks: Add New Step, Delete Step, Assign To Router, Import Transformer, Export Transformer, Validate Transformer, Validate Step, Move Step Up, Move Step Down

Other: Notifications, View User API, View Client API, Help, About Mirth Connect, Visit nextgen.com, Report Issue, Logout

Connected to: https://localhost:8443 as admin (admin/admin) | 8:24 PM EST (UTC +0) | 6/9/2024 | 8:24 PM | ENG | 23

Step | Generated Script | Reference | Message Trees | Message Templates |

Variable: date_of_birth

Mapping: msg['date_of_birth'].toString()

Default Value: --

String Replacement	Regular Expression	Replace With
'01'	'1'	
'02'	'2'	
'03'	'3'	
'04'	'4'	
'05'	'5'	
'06'	'6'	
'07'	'7'	
'08'	'8'	
'09'	'9'	
'01/'	'Jan'	
'02/'	'Feb'	
'03/'	'Mar'	
'04/'	'Apr'	
'05/'	'May'	
'06/'	'Jun'	
'07/'	'Jul'	
'08/'	'Aug'	
'09/'	'Sep'	
'10/'	'Oct'	
'11/'	'Nov'	
'12/'	'Dec'	
'01/'	'Jan'	
'02/'	'Feb'	
'03/'	'Mar'	
'04/'	'Apr'	
'05/'	'May'	
'06/'	'Jun'	
'07/'	'Jul'	
'08/'	'Aug'	

Available Variables: ramallah_hospital_id, ramallah_hospital_name, ramallah_hospital_tel, ramallah_hospital_gender, ramallah_hospital_address

https://localhost:8443 - Mirth Connect Administrator - (4.5.0)

Edit Channel - Ramallah-hospital_2_Dr-Ahmad-Clinic

Channel Tasks

- Validate Connector
- New Destination
- Double Destination
- Clone Destination
- Double Destination
- Edit Filter
- Edit Transformer
- Edit Response
- Edit Scripted
- Export Connector
- Export Channel
- Debug Channel
- Deploy Channel

Other

- Notifications
- View User API
- Help
- About Mirth Connect
- Visit nextgen.com
- Report Issue
- Logout

Destinations

Status	Destination	Id	Connector Type	Chan
Enabled	Destination 1	1	Database Writer	1

Connector Type: Database Writer Wait for previous destination

Destination Settings

Queue Messages: Never On Failure Always

Advanced Queue Settings: 0 Retries

Validate Response: Yes No

Retain Attachments: Yes No

Database Writer Settings

Driver: MySQL com.mysql.jdbc.Driver

URL: jdbc:mysql://localhost:3306/DB_Dr_Ahmad_Clinic

Username: root

Password: *****

Use JavaScript: Yes No

SQL:

```
1: INSERT INTO dr_ahmed_clinic (ID, Name, Gender, Address, DOB, Telephone, Finding, Action, Value) VALUE
2: (${-ramallah_hospital_id}, ${-ramallah_hospital_name}, ${-ramallah_hospital_gender}, ${-ramallah_hospital_address}, ${date_of_birth}, CONCAT('+97', ${-ramallah_hospital_tel}), ${-ramallah_hospital_report})
```

Generate:

Destination Mappings

- Channel ID
- Message ID
- Raw Data
- Transformed Data
- Encoded Data
- Message Source
- Message Type
- Message Version
- Message Hash
- Date
- Timestamp
- Unique ID
- Original File Name
- XML Entity Encoder
- XML Pretty Printer
- Escape JSON String
- JSON Entity Printer
- CDATA Tag
- DICOM Message Raw Data
- ramallah_hospital_id
- ramallah_hospital_name
- ramallah_hospital_tel
- ramallah_hospital_gender
- ramallah_hospital_address
- date_of_birth
- ramallah_hospital_report
- ramallah_hospital_type
- ramallah_hospital_value

Connected to: https://localhost:8443 as admin (admin.admin) | 8:25 PM EEST (UTC +3)

Type here to search



8:25 PM ENG 6/9/2024

- Medicare-Lab_2_Dr-Ahmad-Clinic:

<https://localhost:8443> - Mirth Connect Administrator - (4.5.0)

Edit Channel - Medicare-Lab_2_Dr-Ahmad-Clinic

Summary | **Source** | **Destinations** | **Scripts**

Channel Properties

- Name: Medicare-Lab_2_Dr-Ahmad-Clinic
- Enabled:
- Data Types: Set Data Types
- Dependencies: Set Dependencies
- Initial State: Started
- Attachment: None
- Tags: Enter channel tag

Message Storage

- Content: All
- Metadata: All
- Durable Message Delivery: On
- Performance:
 - Encrypt message content
 - Attachments
 - Custom metadata
 - Remove content on completion
 - Filtered only
 - Remove attachments on completion

Custom Metadata

SOURCE	TYPE
--------	------

Channel Description

Inbound Properties

Outbound Properties

Serialization

Deserialization

Template Serialization

Variable Mapping

Connector: HL7 v2.x

Inbound: HL7 v2.x

Outbound: HL7 v2.x

Attachment: HL7 v2.x

Revision: 3

Last Modified: 2024-06-09 00:43:01

Id: f6bf99ce-4645-4eca-9fffc-754a0765fb

Connected to: https://localhost:8443 as admin (admin/admin) | 8:32 PM EST (UTC +10)

Type here to search

8:32 PM 6/9/2024 ENG

<https://localhost:8443> - Mirth Connect Administrator - (4.5.0)

Edit Channel - Medicare-Lab_2_Dr-Ahmad-Clinic

Summary | **Source** | **Destinations** | **Scripts**

Source Settings

Connector Type: Database Reader

Polling Settings

- Schedule Type: Interval | Next poll at: Monday, Jun 10, 12:00:00 AM
- Poll Once on Start: Yes No
- Interval: 12 hours

Source Queue: OFF (Respond after processing)

Queue Buffer Size: 1000

Response: None

Process Batch: Yes No

Batch Response: First Last

Max Processing Threads: 1

Database Reader Settings

Driver: MySQL com.mysql.cj.jdbc.Driver

URL: jdbc:mysql://localhost:3306/DB_Medicare_Lab

Username: root

Password: ****

Use JavaScript: Yes No

Keep Connection Open: Yes No

Aggregate Results: Yes No

Cache Results: Yes No

Fetch Size: 1000

a of Retries on Error: 3

Retry Interval (ms): 10000

Encoding: Default

SQL:

```
1. SELECT medicare_lab_P_ID AS medicare_lab_P_ID, medicare_lab_P_NAME AS medicare_lab_P_NAME, medicare_lab.Address AS medicare_lab_Address, medicare_lab.PhoneNo AS medicare_lab_PhoneNo, medicare_lab.Birth_Date AS medicare_lab_BirthDate
2. FROM medicare_lab
3.
4.
```

Run Post-Process SQL: Never After each message Once after all messages

SQL:

```
1.
```

Generated: [Connection](#) [Select](#)

Generated: [Connection](#) [Update](#)

medicare_lab_P_ID
medicare_lab_P_name
medicare_lab_address
medicare_lab_phone
medicare_lab_birth_date
medicare_lab_gender
medicare_lab_report
medicare_lab_type

Connected to: https://localhost:8443 as admin (admin/admin) | 8:32 PM EST (UTC +10)

Type here to search

8:32 PM 6/9/2024 ENG

https://localhost:8443 - Mirth Connect Administrator - (4.5.0)

Edit Channel - Medicare-Lab_2_Dr-Ahmad-Clinic - Source Transformer

Enabled	#	Name	Type
<input checked="" type="checkbox"/>	0	medicare_lab_p_id	Mapper
<input checked="" type="checkbox"/>	1	medicare_lab_p_name	Mapper
<input checked="" type="checkbox"/>	2	medicare_lab_address	Mapper
<input checked="" type="checkbox"/>	3	medicare_lab_phoneno	Mapper
<input checked="" type="checkbox"/>	4	medicare_lab_birth_date	Mapper
<input checked="" type="checkbox"/>	5	medicare_lab_gender	Mapper
<input checked="" type="checkbox"/>	6	medicare_lab_report	Mapper
<input checked="" type="checkbox"/>	7	medicare_lab_type	Mapper
<input checked="" type="checkbox"/>	8	medicare_lab_value	Mapper

Step | Generated Script |

Variable: medicare_lab_p_id
Mapping: msg[medicare_lab_p_id].toString()

Default Value:

String Replacement:

Regular Expression	Replace With
mdLab	"ANC"

Reference | Message Trees | Message Templates |

Category: All
Filter:

- All
- Get Serializer
- Convert XML to JSON
- Convert JSON to XML
- Convert Delimited Text to XML (default parameters)
- Convert Delimited Text to XML (custom parameters)
- Convert XML to Delimited Text (custom parameters)
- Convert HLT v2.x to XML (default parameters)
- Convert HLT v2.x to XML (custom parameters)
- Convert XML to HLT v2.x (default parameters)
- Convert XML to HLT v2.x (custom parameters)
- Convert DICOM to XML (default parameters)
- Convert XML to DICOM (default parameters)
- Convert HLT v3.x to XML (default parameters)
- Convert HLT v3.x to XML (custom parameters)
- Convert XML to HLT v3.x (default parameters)
- Convert NDPOP to XML (default parameters)
- Convert NDPOP to XML (Custom parameters)
- Convert XML to NDPOP (default parameters)

Available Variables

https://localhost:8443 - Mirth Connect Administrator - (4.5.0)

Edit Channel - Medicare-Lab_2_Dr-Ahmad-Clinic - Source Transformer

Enabled	#	Name	Type
<input checked="" type="checkbox"/>	0	medicare_lab_p_id	Mapper
<input checked="" type="checkbox"/>	1	medicare_lab_p_name	Mapper
<input checked="" type="checkbox"/>	2	medicare_lab_address	Mapper
<input checked="" type="checkbox"/>	3	medicare_lab_phoneno	Mapper
<input checked="" type="checkbox"/>	4	medicare_lab_birth_date	Mapper
<input checked="" type="checkbox"/>	5	medicare_lab_gender	Mapper
<input checked="" type="checkbox"/>	6	medicare_lab_report	Mapper
<input checked="" type="checkbox"/>	7	medicare_lab_type	Mapper
<input checked="" type="checkbox"/>	8	medicare_lab_value	Mapper

Step | Generated Script |

Variable: medicare_lab_phoneno
Mapping: msg[medicare_lab_phoneno].toString()

Default Value:

String Replacement:

Regular Expression	Replace With
xx	

Reference | Message Trees | Message Templates |

Category: All
Filter:

- All
- Get Serializer
- Convert XML to JSON
- Convert JSON to XML
- Convert Delimited Text to XML (default parameters)
- Convert Delimited Text to XML (custom parameters)
- Convert XML to Delimited Text (custom parameters)
- Convert HLT v2.x to XML (default parameters)
- Convert HLT v2.x to XML (custom parameters)
- Convert XML to HLT v2.x (default parameters)
- Convert XML to HLT v2.x (custom parameters)
- Convert DICOM to XML (default parameters)
- Convert XML to DICOM (default parameters)
- Convert HLT v3.x to XML (default parameters)
- Convert HLT v3.x to XML (custom parameters)
- Convert XML to HLT v3.x (default parameters)
- Convert NDPOP to XML (default parameters)
- Convert NDPOP to XML (Custom parameters)
- Convert XML to NDPOP (default parameters)

Available Variables

medicare_lab_p_id
medicare_lab_p_name
medicare_lab_address

https://localhost:8443 - Mirth Connect Administrator - (4.5.0)

Edit Channel - Medicare-Lab_2_Dr-Ahmad-Clinic - Source Transformer

Enabled	#	Name	Type
<input checked="" type="checkbox"/>	0	medicare_lab_p_id	Mapper
<input checked="" type="checkbox"/>	1	medicare_lab_p_name	Mapper
<input checked="" type="checkbox"/>	2	medicare_lab_address	Mapper
<input checked="" type="checkbox"/>	3	medicare_lab_phoneno	Mapper
<input checked="" type="checkbox"/>	4	medicare_lab_birth_date	Mapper
<input checked="" type="checkbox"/>	5	medicare_lab_gender	Mapper
<input checked="" type="checkbox"/>	6	medicare_lab_report	Mapper
<input checked="" type="checkbox"/>	7	medicare_lab_type	Mapper
<input checked="" type="checkbox"/>	8	medicare_lab_value	Mapper

Step | Generated Script |

Variable: medicare_lab_birth_date
Mapping: msg["medicare_lab_birth_date"].toString()
Default Value: ""

String Replacement:

Regular Expression	Replace With
"01"	"1"
"02"	"2"
"03"	"3"
"04"	"4"
"05"	"5"
"06"	"6"
"07"	"7"
"08"	"8"
"09"	"9"
"-01"	" Jan "
"-02"	" Feb "
"-03"	" Mar "
"-04"	" Apr "
"-05"	" May "
"-06"	" Jun "
"-07"	" Jul "
"-08"	" Aug "
"-09"	" Sep "
"-10"	" Oct "
"-11"	" Nov "
"-12"	" Dec "
"-1"	" Jan "
"-2"	" Feb "
"-3"	" Mar "
"-4"	" Apr "
"-5"	" May "
"-6"	" Jun "
"-7"	" Jul "
"-8"	" Aug "
"-9"	" Sep "

Add to: Channel Map

Reference | Message Trees | Message Templates |
Category: All
Filter:
All

- Get Serializer
- Convert XML to JSON
- Convert JSON to XML
- Convert Delimited Text to XML, (default parameters)
- Convert Delimited Text to XML, (custom parameters)
- Convert XML to Delimited Text, (default parameters)
- Convert XML to Delimited Text, (custom parameters)
- Convert HLT v2.x to XML, (default parameters)
- Convert HLT v2.x to XML, (custom parameters)
- Convert XML to HLT v2.x, (default parameters)
- Convert XML to HLT v2.x, (custom parameters)
- Convert DICOM to XML, (default parameters)
- Convert XML to DICOM, (default parameters)
- Convert HLT v3.x to XML, (default parameters)
- Convert HLT v3.x to XML, (custom parameters)
- Convert XML to HLT v3.x, (default parameters)
- Convert NDOP to XML, (default parameters)
- Convert NDOP to XML, (custom parameters)
- Convert XML to NDOP, (default parameters)

Available Variables

- medicare_lab_p_id
- medicare_lab_p_name
- medicare_lab_address
- medicare_lab_phoneno

Connected to: https://localhost:8443 as admin (admin/admin) | 8:33 PM EST (UTC +0)
Type here to search

https://localhost:8443 - Mirth Connect Administrator - (4.5.0)

Edit Channel - Medicare-Lab_2_Dr-Ahmad-Clinic - Source Transformer

Enabled	#	Name	Type
<input checked="" type="checkbox"/>	0	medicare_lab_p_id	Mapper
<input checked="" type="checkbox"/>	1	medicare_lab_p_name	Mapper
<input checked="" type="checkbox"/>	2	medicare_lab_address	Mapper
<input checked="" type="checkbox"/>	3	medicare_lab_phoneno	Mapper
<input checked="" type="checkbox"/>	4	medicare_lab_birth_date	Mapper
<input checked="" type="checkbox"/>	5	medicare_lab_gender	Mapper
<input checked="" type="checkbox"/>	6	medicare_lab_report	Mapper
<input checked="" type="checkbox"/>	7	medicare_lab_type	Mapper
<input checked="" type="checkbox"/>	8	medicare_lab_value	Mapper

Step | Generated Script |

Variable: medicare_lab_gender
Mapping: msg["medicare_lab_gender"].toString()
Default Value: ""

String Replacement:

Regular Expression	Replace With
"Male"	"M"
"Female"	"F"

Add to: Channel Map

Reference | Message Trees | Message Templates |
Category: All
Filter:
All

- Get Serializer
- Convert XML to JSON
- Convert JSON to XML
- Convert Delimited Text to XML, (default parameters)
- Convert Delimited Text to XML, (custom parameters)
- Convert XML to Delimited Text, (default parameters)
- Convert XML to Delimited Text, (custom parameters)
- Convert DICOM to XML, (default parameters)
- Convert XML to DICOM, (default parameters)
- Convert HLT v3.x to XML, (default parameters)
- Convert HLT v3.x to XML, (custom parameters)
- Convert XML to HLT v2.x, (default parameters)
- Convert XML to HLT v2.x, (custom parameters)
- Convert NDOP to XML, (default parameters)
- Convert NDOP to XML, (custom parameters)
- Convert XML to NDOP, (default parameters)

Available Variables

- medicare_lab_p_id
- medicare_lab_p_name
- medicare_lab_address
- medicare_lab_phoneno
- medicare_lab_birth_date

Connected to: https://localhost:8443 as admin (admin/admin) | 8:34 PM EST (UTC +0)
Type here to search

https://localhost:8443 - Mirth Connect Administrator - (4.5.0)

Edit Channel - Medicare-Lab_2_Dr-Ahmad-Clinic

Destinations

Status	Destination	Id	Connector Type	Chan
Enabled	Destination 1	1	Database Writer	1

Connector Type: Database Writer Wait for previous destination

Destination Settings

- Queue Messages: Never On Failure Always
- Advanced Queue Settings: 0 Retries
- Validate Response: Yes No
- Retain Attachments: Yes No

Database Writer Settings

Driver: MySQL com.mysql.jdbc.Driver

URL: jdbc:mysql://localhost:3306/DB_Dr_Ahmad_Clinic

Username: root

Password:

Use JavaScript: Yes No

SQL:

```
1 INSERT INTO dr_ahmed_clinic (ID, Name, Gender, Address, DOB, Telephone, Finding, Action, Value) VALUE
2 (${medicare_lab_p_id}, ${medicare_lab_p_name}, ${medicare_lab_gender}, ${medicare_lab_address}, ${medicare_lab_birth_date}, CONCAT('+97', ${medicare_lab_phoneno}), ${medicare_lab_report}, ${medicare_lab_value})
```

Destination Mappings

- Channel ID
- Channel Name
- Message ID
- Raw Data
- Translated Data
- Encoded Data
- Message Source
- Message Type
- Message Version
- Message Hash
- Date
- FormattedMessage
- Timestamp
- Unique ID
- Original File Name
- XML Entity Encoder
- XML Pretty Printer
- Escape JSON String
- JSON Entity Printer
- CDATA Tag
- DICOM Message Raw Data
- medicare_lab_p_id
- medicare_lab_p_name
- medicare_lab_address
- medicare_lab_phoneno
- medicare_lab_birth_date
- medicare_lab_report
- medicare_lab_type
- medicare_lab_value

Connected to: https://localhost:8443 (https://localhost:8443) | 8:34 PM EST (UTC +0) |  Type here to search                         

After that we deploy the channels:

[https://localhost:8443 - Mirth Connect Administrator - \(4.5.0\)](https://localhost:8443)

Status	Data Type	Name	Id	Local Id	Description	Rev Δ	Last Deployed	Last Modified
Enabled	XML	[Default Group]	333d6e85-f712-492c-a41a-0926105a92e	2	Channels not part of a group will appear here.	--	--	2024-06-09 00:56
Enabled	XML	Ramallah-hc	f019b3eb-bd10-4612-bd70-e030edff6d8e	1	--	--	2024-06-08 23:09	
Enabled	XML	Medicare-Lab	fb6f90ce-4645-4eca-9ffc-764a70763fbc	3	--	--	2024-06-09 00:49	

Connected to: <https://localhost:8443> as admin (admin/admin) | 8:36 PM EEST (UTC +2)

Type here to search X 8:36 PM ENG 6/9/2024

[https://localhost:8443 - Mirth Connect Administrator - \(4.5.0\)](https://localhost:8443)

Status	Name	Rev Δ	Last Deployed	Received	Filtered	Queued	Sent	Errored	Connection
Started	[Default Group]	--	--	1,040	0	0	720	220	Idle
Started	Ramallah-hospital_2_Dr-Ahmad-Clinic	0	2024-06-09 20:16	92	0	0	92	0	Idle
Started	Destination 1	--	--	92	0	0	92	0	Idle
Started	Ramallah-Hospital_2_Medicare-Lab	0	2024-06-09 20:16	936	0	0	636	320	Idle
Started	Source	--	--	936	0	0	0	124	Idle
Started	Destination 1	--	--	812	0	0	616	196	Idle
Started	Medicare-Lab_2_Dr-Ahmad-Clinic	0	2024-06-09 20:16	12	0	0	12	0	Reading
Started	Source	--	--	12	0	0	0	0	Reading
Started	Destination 1	--	--	12	0	0	12	0	Idle

Connected to: <https://localhost:8443> as admin (admin/admin) | 8:37 PM EEST (UTC +2)

Type here to search X 8:37 PM ENG 6/9/2024

And the data on database:

MySQL Workbench

DB_Ramallah_hospital x DB_Medicare_Lab x DB_Dr_Ahmad_Clinic x

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SCHEMAS

Tables

Information

No object selected

DB_Medicare_Lab*

```

15     Type VARCHAR(255),
16     Value VARCHAR(255)
17   );
18
19 • drop table medicare_lab;
20
21 • INSERT INTO medicare_lab (P_ID, P_NAME, Address, PhoneNo, Birth_Date, Gender, Report, Type, Value) VALUES
('mcLab-0011', 'Abdallah', 'Ramallah', '+97059298111', '04-07-1994', 'Male', 'Blood glucose test', 'Lab test', '200 mg/dL'),
('mcLab-0011', 'Abdallah', 'Ramallah', '+97059298111', '04-07-1994', 'Male', 'HbA1c', 'Lab test', '8.5 %'),
('mcLab-0012', 'Fatima', 'Jenin', '+97056784561', '25-10-1980', 'Female', 'Cholesterol Panel', 'Lab test', 'XXXX'),
('mcLab-0013', 'Omar', 'Nablus', '+9705681234567', '12-01-1975', 'Male', 'Appendicitis', 'Ultrasound', 'XXXX'),
('mcLab-0001', 'Abdallah', 'Ramallah', '+97059298111', '04-07-1994', 'Male', 'Diagnosis', 'Diagnosis'),
('mcLab-0002', 'Mohammad', 'Al-Bireh', '+9705611234', '01-05-2010', 'Male', 'flu', 'Diagnosis'),
('mcLab-0003', 'Lama', 'Birzeit', '+970561400975', '19-11-2000', 'Female', 'Acamol', 'Drug', '400 mg'),
('mcLab-0004', 'Ali', 'Ramallah', '+970568415', '31-08-1998', 'Male', 'Fraction in hand bone', 'X-Ray')

```

Result Grid | Filter Rows | Export | Wrap Cell Content | Read Only

P_ID	P_NAME	Address	PhoneNo	Birth_Date	Gender	Report	Type	Value
mcLab-0011	Abdallah	Ramallah	+97059298111	04-07-1994	Male	Blood glucose test	Lab test	200 mg/dL
mcLab-0011	Abdallah	Ramallah	+97059298111	04-07-1994	Male	HbA1c	Lab test	8.5 %
mcLab-0012	Fatima	Jenin	+97056784561	25-10-1980	Female	Cholesterol Panel	Lab test	XXXX
mcLab-0013	Omar	Nablus	+9705681234567	12-01-1975	Male	Appendicitis	Ultrasound	XXXX
mcLab-0001	Abdallah	Ramallah	+97059298111	04-07-1994	Male	Diagnosis	Diagnosis	
mcLab-0002	Mohammad	Al-Bireh	+9705611234	01-05-2010	Male	flu	Diagnosis	
mcLab-0003	Lama	Birzeit	+970561400975	19-11-2000	Female	Acamol	Drug	400 mg
mcLab-0004	Ali	Ramallah	+970568415	31-08-1998	Male	Fraction in hand bone	X-Ray	

medicare_lab 3 x

Action Output

#	Time	Action	Message	Duration / Fetch
4	19:44:17	CREATE TABLE medicare_lab (P_ID VARCHAR(255), P_NAME VARCHAR(255), Address VARCHAR(255), PhoneNo VARCHAR(255), Birth_Date DATE, Gender ENUM('Male', 'Female'), Report VARCHAR(255), Type ENUM('Lab test', 'Diagnosis', 'Drug'), Value VARCHAR(255))	0 rows affected	0.032 sec
5	19:44:19	INSERT INTO medicare_lab (P_ID, P_NAME, Address, PhoneNo, Birth_Date, Gender, Report, Type, Value) VALUES ('mcLab-0011', 'Abdallah', 'Ramallah', '+97059298111', '04-07-1994', 'Male', 'Blood glucose test', 'Lab test', '200 mg/dL')	4 rows affected Records: 4 Duplicates: 0 Warnings: 0	0.015 sec
6	19:44:21	select * from medicare_lab LIMIT 0, 400	4 row(s) returned	0.000 sec / 0.000 sec
7	19:47:25	select * from medicare_lab LIMIT 0, 400	4 row(s) returned	0.000 sec / 0.000 sec
8	20:37:53	select * from medicare_lab LIMIT 0, 400	8 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

Query Completed

8:38 PM 6/9/2024

MySQL Workbench

DB_Ramallah_hospital x DB_Medicare_Lab x DB_Dr_Ahmad_Clinic x

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Navigator

SCHEMAS

Tables

Information

No object selected

DB_Dr_Ahmad_Clinic*

```

20
21 • INSERT INTO dr_ahmad_clinic (ID, Name, Gender, Address, DOB, Telephone, Finding, Action, Value)
VALUES ('AHC-001', 'Abdallah', 'M', 'Ramallah', '4 Jun 1994', '+97059298111', 'Diabetes_type2', 'Diagnosis', NULL),
       ('AHC-002', 'Salma', 'F', 'Al-Bireh', '12 Mar 1988', '+970569876543', 'Hypertension', 'Diagnosis', NULL),
       ('AHC-003', 'Khaled', 'M', 'Birzeit', '22 Aug 1992', '+970568123456', 'High Cholesterol', 'Diagnosis', NULL),
       ('AHC-0001', 'Abdallah', 'M', 'Ramallah', '4 Jul 1994', '+97059298111', 'flu', 'Diagnosis', NULL),
       ('AHC-0002', 'Mohammad', 'M', 'Al-Bireh', '1 May 210', '+970560611234', 'flu', 'Diagnosis', NULL),
       ('AHC-0003', 'Lama', 'F', 'Birzeit', '19 Nov 2000', '+970561400975', 'Acamol', 'Drug', '400 mg'),
       ('AHC-0004', 'Ali', 'M', 'Ramallah', '31 Aug 1998', '+970562588415', 'Fraction in hand bone', 'X-Ray', 'XXXX'),
       ('AHC-0011', 'Abdallah', 'M', 'Ramallah', '4 Jul 1994', '+97059298111', 'Blood glucose test', 'Lab test', '200 mg/dL'),
       ('AHC-011', 'Abdallah', 'M', 'Ramallah', '4 Jul 1994', '+97059298111', 'HbA1c', 'Lab test', '8.5 %'),
       ('AHC-0012', 'Fatima', 'F', 'Jenin', '25 Oct 1980', '+97056784561', 'Cholesterol Panel', 'Lab test', 'XXXX'),
       ('AHC-0013', 'Omar', 'M', 'Nablus', '12 Jan 1975', '+9705681234567', 'Appendicitis', 'Ultrasound')

```

Result Grid | Filter Rows | Export | Wrap Cell Content | Read Only

ID	Name	Gender	Address	DOB	Telephone	Finding	Action	Value
AHC-001	Abdallah	M	Ramallah	4 Jun 1994	+97059298111	Diabetes_type2	Diagnosis	XXXX
AHC-002	Salma	F	Al-Bireh	12 Mar 1988	+970569876543	Hypertension	Diagnosis	XXXX
AHC-003	Khaled	M	Birzeit	22 Aug 1992	+970568123456	High Cholesterol	Diagnosis	XXXX
AHC-0001	Abdallah	M	Ramallah	4 Jul 1994	+97059298111	flu	Diagnosis	
AHC-0002	Mohammad	M	Al-Bireh	1 May 210	+970560611234	flu	Diagnosis	
AHC-0003	Lama	F	Birzeit	19 Nov 2000	+970561400975	Acamol	Drug	400 mg
AHC-0004	Ali	M	Ramallah	31 Aug 1998	+970562588415	Fraction in hand bone	X-Ray	XXXX
AHC-0011	Abdallah	M	Ramallah	4 Jul 1994	+97059298111	Blood glucose test	Lab test	200 mg/dL
AHC-011	Abdallah	M	Ramallah	4 Jul 1994	+97059298111	HbA1c	Lab test	8.5 %
AHC-0012	Fatima	F	Jenin	25 Oct 1980	+97056784561	Cholesterol Panel	Lab test	XXXX
AHC-0013	Omar	M	Nablus	12 Jan 1975	+9705681234567	Appendicitis	Ultrasound	

dr_ahmad_clinic 3 x

Action Output

#	Time	Action	Message	Duration / Fetch
2	19:45:13	drop table dr_ahmad_clinic	0 rows affected	0.031 sec
3	19:45:15	CREATE TABLE dr_ahmad_clinic (ID VARCHAR(255), Name VARCHAR(255), Gender VARCHAR(255), Address VARCHAR(255), DOB DATE, Telephone VARCHAR(255), Finding VARCHAR(255), Action ENUM('Diagnosis', 'HbA1c', 'Cholesterol Panel', 'Ultrasound'), Value VARCHAR(255))	0 rows affected	0.016 sec
4	19:45:17	INSERT INTO dr_ahmad_clinic (ID, Name, Gender, Address, DOB, Telephone, Finding, Action, Value) VALUES ('AHC-001', 'Abdallah', 'M', 'Ramallah', '4 Jun 1994', '+97059298111', 'Diabetes_type2', 'Diagnosis', NULL)	3 rows affected Records: 3 Duplicates: 0 Warnings: 0	0.000 sec
5	19:45:35	select * from dr_ahmad_clinic LIMIT 0, 400	3 row(s) returned	0.000 sec / 0.000 sec
6	19:47:32	select * from dr_ahmad_clinic LIMIT 0, 400	3 row(s) returned	0.000 sec / 0.000 sec
7	20:38:57	select * from dr_ahmad_clinic LIMIT 0, 400	11 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

Query Completed

8:39 PM 6/9/2024