

| Local Reference Field

Transact Extensibility for Java (English)

2020 Q1



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| Lesson Overview



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I am going to describe
Local Ref Field
Local Ref Group
Workshops

| Local Application in Java Framework

- T24 Application allow the entry of additional local customized input fields without any program modifications
- Addition of Local fields is only valid on applications, which have already reserved a field called LOCAL.REF
 - LOCAL.TABLE - This table allows to specify details of local fields to be defined.
 - LOCAL.REF.TABLE – this table is to attach the local field created to the specific application

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T24 Application allow the entry of additional local customized input fields without any program modifications

Addition of Local fields is only valid on applications, which have already reserved a field called LOCAL.REF

LOCAL.TABLE - This table allows to specify details of local fields to be defined.

LOCAL.REF.TABLE – this table is to attach the local field created to the specific application

| Java Methods

- Method of T24 Record
 - `getLocalRefField`
 - `getLocalRefGroups`
 - `getLocalRefNames`
- All record classes have the above methods to access local reference fields

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Method of T24 Record
`getLocalRefField`
`getLocalRefGroups`
`getLocalRefNames`

| getLocalRefField(FieldName)

- This interface is used to read the single field in Local Reference
- Parameters
 - Input: FieldName – Name of the Local Ref Field
 - Returns: value in TField

```
@Override
public void updateCoreRecord(String application, String currentRecordId, TStructure currentRecord,
    TStructure unauthorisedRecord, TStructure liveRecord, List<String> versionNames, TBoolean isZeroAuth,
    List<String> currentRecordIds, List<TStructure> currentRecords, TransactionContext transactionContext) {

    DataAccess dataAccess = new DataAccess(this);

    CustomerRecord customerRec = new CustomerRecord(dataAccess.getRecord("BNK", "CUSTOMER", "", currentRecordId));

    CustomerEducationRecord cusEduRec = new CustomerEducationRecord(currentRecord);

    TField segment = customerRec.getLocalRefField("CUSTOMER.SEGMENT");

    System.out.println("Segment of the Customer :"+segment.toString());
}
```

This interface is used to read the single field in Local Reference
Parameters

Input: FieldName – Name of the Local Ref Field

Returns: value in TField

| getLocalRefGroups(FieldName)

- This interface is to read the Multi Value Group
- Parameters
 - Input: FieldName – Name of the Multi Value Group
 - Returns: List of LocaRefGroup

```
@Override
public void updateCoreRecord(String application, String currentRecordId, TStructure currentRecord,
    TStructure unauthorisedRecord, TStructure liveRecord, List<String> versionNames, TBoolean isZeroAuth,
    List<String> currentRecordIds, List<TStructure> currentRecords, TransactionContext transactionContext) {

    DataAccess dataAccess = new DataAccess(this);

    CustomerRecord customerRec = new CustomerRecord(dataAccess.getRecord("BNK", "CUSTOMER", "", currentRecordId));

    CustomerEducationRecord cusEduRec = new CustomerEducationRecord(currentRecord);

    TField segment = customerRec.getLocalRefField("CUSTOMER.SEGMENT");

    System.out.println("Segment of the Customer :"+segment.toString());

    List<EducationClass> eduList = cusEduRec.getEducation();
    List<LocalRefGroup> localRef = customerRec.getLocalRefGroups("CUS.EDUCATION");
    localRef.clear();
}
```

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This interface is to read the Multi Value Group

Parameters

Input: FieldName – Name of the Multi Value Group

Returns: List of LocaRefGroup

getLocalRefNames()

- This interface returns the names of the local reference field in the Record Object
- Parameters
 - Input: Null

```
Vector<String> localRefNames = customerRec.getLocRefNames();

List<EducationClass> eduList = cusEduRec.getEducation();
List<LocalRefGroup> localRef = customerRec.getLocalRefGroups("CUS_EDUCATION");
localRef.clear();
for(int i=0;i<eduList.size();i++)
{
    String education = eduList.get(i).getEducationClass();
    String university = eduList.get(i).getUniversity();
    String course = eduList.get(i).getCourse();

    localRef.add(i, new LocalRefGroup(education, university, course,
    CUSTOMER.SEGMENT, CU.EFF.DATE, USREGS.US.STATE, USREGS.APPLIED.CERTIFIED, USREGS.W
```

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This interface returns the names of the local reference field in the Record Object

Parameters

Input: Null

Returns: Vector<String>

| Lesson Summary



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I described

Local Ref Field

Local Ref Group

Workshops

Practice 11.1

- Create below Local Ref Group

Field Name	Char Type	Max Char
CUS.EDUCATION	A	35
UNIVERSITY	A	35
COURSE	A	10

- Attach the above fields as Local Ref Group to CUSTOMER Application
- Write a Input Routine to display the Local Reference Group Values in Log file.

```
JavaFramework.log
1 May 15, 2020 12:17:12 PM com.temenos.training.PrintLocalRef validateRecord
2 INFO: Education: 0 Bachelor Degree
3 May 15, 2020 12:17:13 PM com.temenos.training.PrintLocalRef validateRecord
4 INFO: University: 0 Oxford
5 May 15, 2020 12:17:14 PM com.temenos.training.PrintLocalRef validateRecord
6 INFO: Course: 0 Computer Science
7 May 15, 2020 12:17:15 PM com.temenos.training.PrintLocalRef validateRecord
8 INFO: Education: 1 Masters Degree
9 May 15, 2020 12:17:16 PM com.temenos.training.PrintLocalRef validateRecord
10 INFO: University: 1 Cambridge
11 May 15, 2020 12:17:17 PM com.temenos.training.PrintLocalRef validateRecord
12 INFO: Course: 1 Information Technology
13
```

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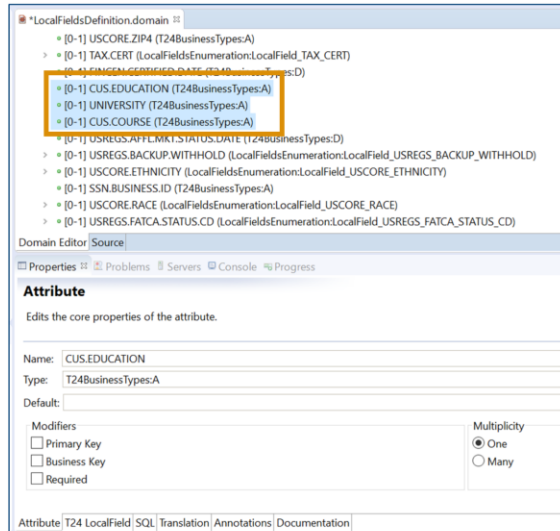


Create below Local Ref Group

Attach the above fields as Local Ref Group to CUSTOMER Application
Write a Input Routine to display the Local Reference Group Values in Log file.

Solution 11.1 – LocalFieldsDefinition

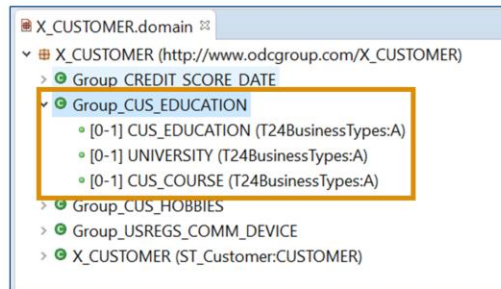
- Add the 3 fields with the Char type A and Max Char as 35



Add the 3 fields with the Char type A and Max Char as 35

Solution 11.1 – LocalRefApplication

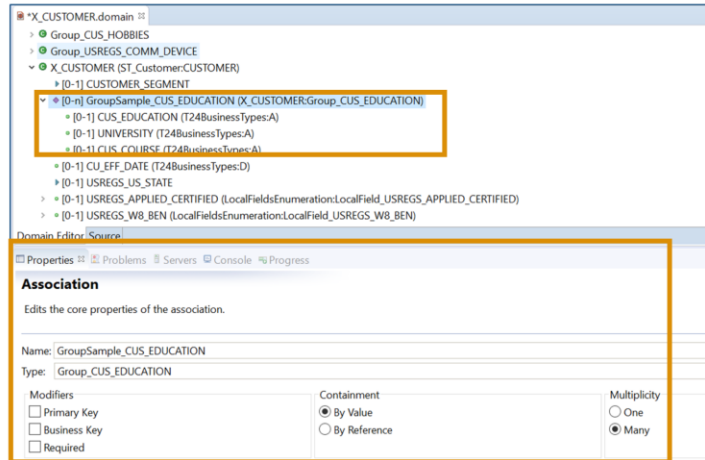
- Create a Group called Group_CUS_EDUCATION and add the 3 local reference field as attributes



Create a Group called Group_CUS_EDUCATION and add the 3 local reference field as attributes

Solution 11.1 – LocalRefApplication

- Add the Group Created to the CUSTOEMR Application as ASSOCIATION



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Add the Group Created to the CUSTOEMR Application as ASSOCIATION

Solution 11.1 - validateRecord

```
@Override
public TValidationResponse validateRecord(String application, String currentRecordId, TStructure currentRecord,
TStructure unauthorisedRecord, TStructure liveRecord, TransactionContext transactionContext) {
    Logger logger = Logger.getLogger("JAVAT24");
    try {
        //Create a log file under any dir
        FileHandler fileHandler = new FileHandler(
            "C:/Temenos/UTP-REL-2020.02.13-01-132-saf-retailsuite-developer-s08/Temenos/TAFJ/log/JavaFramework.log");
        logger.addHandler(fileHandler);
        SimpleFormatter formatter = new SimpleFormatter();
        fileHandler.setFormatter(formatter);
    } catch (SecurityException e) {
    } catch (IOException e) {
    }
    //Cast the TStructure to Customer Record
    CustomerRecord customerRec = new CustomerRecord(currentRecord);
    //Read the Local Ref Group using getLocalRefGroups
    List<LocalRefGroup> educationList = customerRec.getLocalRefGroups("CUS.EDUCATION");

    for (int i = 0; i < educationList.size(); i++) { //Loop through the list and read the Local Ref Fields
        String edu = educationList.get(i).getLocalRefField("CUS.EDUCATION").toString();
        String univ = educationList.get(i).getLocalRefField("UNIVERSITY").toString();
        String cour = educationList.get(i).getLocalRefField("CUS.COURSE").toString();
        logger.info("Education: " + i + " " + edu);
        logger.info("University: " + i + " " + univ);
        logger.info("Course: " + i + " " + cour);
    }
    return customerRec.getValidationResponse();
}
```

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Create the Above Program and attach it as INPUT Routine to any CUSTOMER version

Solution 11.1 - Output

The screenshot shows a web application interface for 'Customer Java' with ID '190278'. The form contains several input fields: 'Issue Country', 'Id Issue Place', 'Addr Lookuptext', 'Hobbies.1', 'Education.1' (with a dropdown menu), 'University.1', 'Course.1', 'Education.2', 'University.2', and 'Course.2'. An orange box highlights the 'Education.1' section, which includes a dropdown menu with 'Bachelor Degree' selected, and the 'University.1' and 'Course.1' fields with values 'Oxford' and 'Computer Science' respectively. Below the form, a log window titled 'JavaFramework.log' displays the following log entries:

```
1 May 15, 2020 12:17:17 AM com.temenos.training.PrintLocalRef validateRecord
2 INFO: Education: 0 Bachelor Degree
3 May 15, 2020 12:17:18 AM com.temenos.training.PrintLocalRef validateRecord
4 INFO: University: 0 Oxford
5 May 15, 2020 12:17:18 AM com.temenos.training.PrintLocalRef validateRecord
6 INFO: Course: 0 Computer Science
7 May 15, 2020 12:17:19 AM com.temenos.training.PrintLocalRef validateRecord
8 INFO: Education: 1 Masters Degree
9 May 15, 2020 12:17:19 AM com.temenos.training.PrintLocalRef validateRecord
10 INFO: University: 1 Cambridge
11 May 15, 2020 12:17:19 AM com.temenos.training.PrintLocalRef validateRecord
12 INFO: Course: 1 Information Technology
13
```

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The log file should have the Education Local Ref Group printed

Practice 11.2

- Create a local application called CUSTOMER.EDUCATION with below fields

Field Name	Data Type	Max Char
CUS.EDUCATION	A	35
UNIVERSITY	A	35
COURSE	A	10

TABLE.NAME	CUSTOMER.EDUCATION
PRODUCT	ST
FILE.TYPE	H
CLASSIFICATION	CUS

- Write a updateRecord method that should update the CUSTOMER table with Education Details given in the CUSTOMER.EDUCATION local table

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Create a local application called CUSTOMER.EDUCATION with below fields

Field Name

Data Type

Max Char

CUS.EDUCATION

A

35

UNIVERSITY

A

35

COURSE

A

10

Write a `updateCoreRecord` method that should update the CUSTOMER table with Education Details given in the CUSTOMER.EDUCATION local table

Field Name

Data Type

Max Char

CUS.EDUCATION

A

35

UNIVERSITY

A

35

COURSE

A

10

Solution 11.2 – EB.TABLE.DEFINITION

- Create EB.TABLE.DEFINITION with below fields,
 - NAME
 - CUS.EDUCATION
 - UNIVERSITY
 - CUS.COURSE

EB.TABLE.DEFINITION		CUSTOMER.EDUCATION
Description	EN Customer Education	
Product	ST	System Tables
Field Name.1	NAME	
Description.1	NAME	
Max Char.1	35	
Data Type.1	ALPHANUMERIC	Alpha Numeric Characters
Field Name.2	EDUCATION	
Description.2	EDUCATION	
Data Type.2	ALPHANUMERIC	Alpha Numeric Characters
Type.2	Xx=	
Field Name.3	UNIVERSITY	
Description.3	UNIVERSITY	
Data Type.3	ALPHANUMERIC	Alpha Numeric Characters
Type.3	Xx=	
Field Name.4	COURSE	
Description.4	COURSE	
Data Type.4	ALPHANUMERIC	Alpha Numeric Characters
Type.4	Xx=	
Prefix	ST CUS	
File Type	Cus	
Link To Wf	No	
Add Special Fields.1	Xx Local Ref	

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Create EB.TABLE.DEFINITION
with below fields,
NAME
CUS.EDUCATION
UNIVERSITY
CUS.COURSE

Solution 11.2 - updateRecord

```
public void updateRecord(String application, String currentRecordId, TStructure currentRecord,
    TStructure unauthorisedRecord, TStructure liveRecord, TransactionContext transactionContext,
    List<TransactionData> transactionData, List<TStructure> currentRecords) {
    DataAccess dataAccess = new DataAccess(this);

    CustomerRecord customerRec = new CustomerRecord(dataAccess.getRecord("BNK", "CUSTOMER", "", currentRecordId));
    CustomerEducationRecord cusEduRec = new CustomerEducationRecord(currentRecord);

    TField segment = customerRec.getLocalRefField("CUSTOMER_SEGMENT");
    System.out.println("Segment of the Customer :"+segment.toString());

    Vector<String> localRefNames = customerRec.getLocRefNames();

    List<EducationClass> eduList = cusEduRec.getEducation();
    List<LocalRefGroup> localRef = customerRec.getLocalRefGroups("CUS_EDUCATION");
    int len = localRef.size();
    for(int j=len-1;j>0;j--)
    {
        localRef.remove(j);
    }

    for(int i=0;i<eduList.size();i++)
    {
        String education = eduList.get(i).getEducation().toString();
        String university = eduList.get(i).getUniversity().toString();
        String course = eduList.get(i).getCourse().toString();

        localRef.add(i,new LocalRefGroup(education,university,course));
    }

    TransactionData txnData = new TransactionData();
    txnData.setFunction("I");
    txnData.setNumberOfAuthoriser("0");
    txnData.setVersionId("CUSTOMER_JAVADEMO");

    transactionData.add(txnData);
    currentRecords.add(customerRec.toStructure());
}

currentRecords.add(customerRec.toStructure());
}
```

Solution 11.2 – EB.API

EB API, UPDATE.EDUCATION	
Description	EN Update Education in Customer
Protection Level *	<input checked="" type="radio"/> Full <input type="radio"/> Partial <input type="radio"/> None
Source Type *	<input type="radio"/> Basic <input type="radio"/> Java <input type="radio"/> Hook <input checked="" type="radio"/> Method
Java Method	updateRecord
Java Class	UpdateEducation
Java Package	com.temenos.training

Create EB.API for the updateRecord Method

Solution 11.2 – Version

Version	ST.CUSTOMER.EDUCATION,DEMO	
Records Per Page	1	
Fields Per Line	1	
No Of Auth	0	
Val Assoc	EDUCATION	
Local Ref Field	LOCAL REF	
Report Locks	Yes	
Before Auth Rtn.1	UPDATE.EDUCATION	Update Education in Customer
Curr No	4	
Inputter.1	29_INPUTTER__OFS_BROWSERTC	
Date time.1	15 MAY 20 13:55	
Authoriser	29_INPUTTER_OFS_BROWSERTC	
Company	GB0010001	Model Bank
Dept Code	1	Implementation

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Attach the EB.API as Before Auth Routine in VERSION created for ST.CUSTOMER.EDUCATION Application

Solution 11.2 – Create Education Details

St Customer Education Demo		190278
Name		Max Chuard
-		
Education.1	Bachelor Degree	
University.1	Oxford	
Course.1	Computer Science	
-		
Education.2	Masters Degree	
University.2	Cambridge	
Course.2	Information Technology	

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Create an entry in CUSTOMER.EDUCATION application with Customer Number

Solution 11.2 – CUSTOMER Record Updated

- Customer Updated

Customer Java 190278	
Residence	US United States of America
Language	1 English
Branch Name	GB0010001 Model Bank
Clis Cparty	No
Description	MR
Given Names	Max Chuard
Gender	MALE
AML Check	Null
AML Result	Null
Internet Banking?	Null
Mobile Banking?	Null
Education.1	Bachelor Degree
University.1	Oxford
Course.1	Computer Science
Education.2	Masters Degree
University.2	Cambridge
Course.2	Information Technology
Curr No	29
Inputter.1	23405_AUTHORISER_OFS_IRISPA_190278
Date time.1	15 MAY 20 14:06
Authoriser	23405_AUTHORISER_OFS_IRISPA_190278
Company	GB0010001 Model Bank
Dept Code	1 Implementation

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Customer Table Updated with the education details entered in CUSTOMER.EDUCATION Application



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