

Flow + Apex + LWC

A Perfect Combination!

EXERCISE WORKBOOK

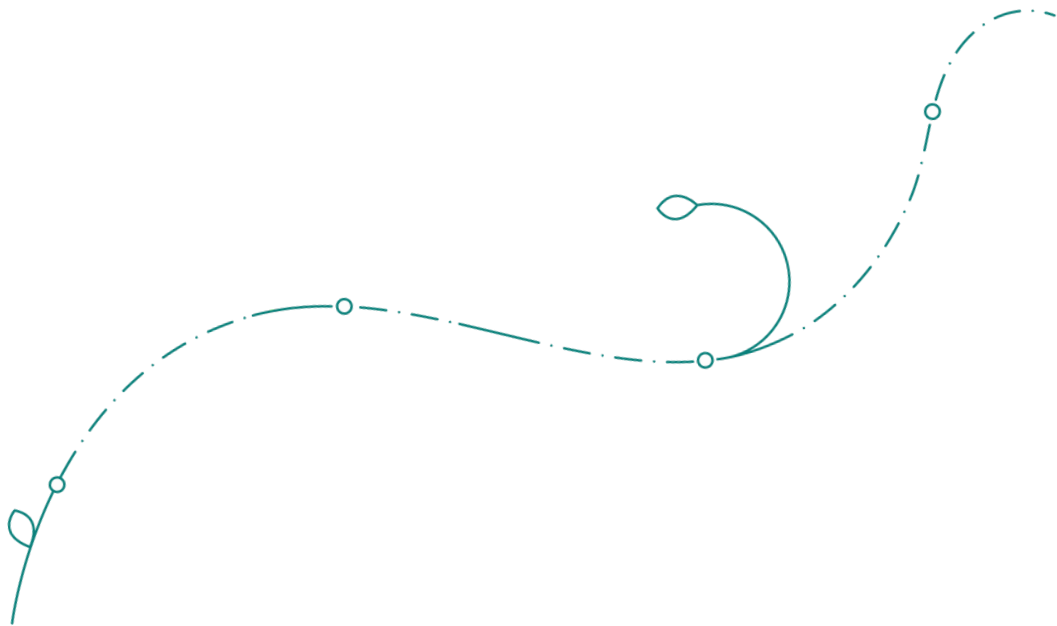


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Exercise 1: Populate family lookup field

Goal: Attempt to populate the Family__c lookup up field on the Contact record based on the last name

What does the flow do?

1. Open the **EX01 - Link family** flow
 - a. What type of flow is this?
 - ☐ French fries flow
 - ☐ Pirate flow
 - ☐ Screen flow
 - Click **Debug**
 - Select **Skip start condition requirements**
 - Select **Updated**
 - Type: **Perez**
 - Select any contact
 - Change Last Name to **Smith**
 - Click **Run**
 - b. Which path did the flow go through?
 - ☐ Family Found
 - ☐ Family must be created
 - Click **Edit Flow**
 - **Activate the flow**

How was the solution built?

2. Go back to the **EX01 - Link family** flow
 - Review the **Start** element
 - a. What object is this record-trigger flow firing on?
 - ☐ Account
 - ☐ Contact
 - ☐ Family__c

3. Review the **Get010** element

- a. What is the equivalent SOQL query?

SELECT _____
FROM _____
WHERE _____
ORDER BY _____
LIMIT _____

- b. What is the API name of the variable that holds the results? (Hint: Is the same name as the flow element)

4. Review the **IF020** element

- a. What is this condition validating?

- ☐ If the contact has a last name
☐ If there is a family with this last name

5. Review the **Insert030** element

- a. Which record does it create?

- ☐ Account
☐ Contact
☐ Family__c

6. Review the **Update40** element

- a. Which record does it update?

- ☐ Account
☐ Contact
☐ Family__c

7. Does it **really** work?

- Open **HOW/main/default/classes/EX01_LinkFamily_Test.cls**
- Test methods create contacts with different last name scenarios
- In line #1.5 click **Run All Tests**
- a. Did all the tests succeed?
 - ☐ Yes
 - ☐ No

- In line #25, remove the **comment**
- **Save and deploy**
- In line #23.5 click **Run Test**
- b. Did the tests succeed?
 - ☐ Yes
 - ☐ No

- c. What error did we get?
 - ☐ Governor limit exception
 - ☐ Required field missing
 - ☐ Duplicate values
 - ☐ Other

8. Deactivate flow

- Go back to the flow
- **Deactivate the flow**

Exercise 2: Populate family lookup field (Fixed)

Goal: Use an @invocable Apex method to fix the issue

What does the flow do?

1. Open the **EX02 - Link family (Apex)** flow
 - a. What type of flow is this?
 - ☐ French fries flow
 - ☐ Pirate flow
 - ☐ Screen flow
 - Activate this flow
 - Open **HOW/main/default/classes/EX01_LinkFamily_Test.cls**
 - In line #23.5 click **Run Test** (*newContacts_WithDuplicate_NewLastNames*)
 - b. Did the tests succeed?
 - ☐ Yes
 - ☐ No

How was the solution built?

2. Go back to the **EX02 - Link family (Apex)** flow
 - Review the **Apex010** element
 - a. What is the name of the global variable we are sending to Apex?
 - ☐ \$Record
 - ☐ \$Record__prior
 - ☐ Family__c
 - b. How many Contact records does **\$Record** hold?
 - ☐ One
 - ☐ Many

- Expand the **Advanced** section
 - c. What is the name of the variable receiving the results from the Apex call?
 - ☐ contactWithFamily
 - ☐ \$Record__prior
 - ☐ Family__c
 - d. What's the **contactWithFamily** data type?
 - ☐ Contact
 - ☐ List<Contact>
3. Review the **Update020** element
- a. What is the variable name that holds the information we are updating?
 - ☐ contactWithFamily
 - ☐ \$Record__prior
 - ☐ \$Record
4. Review the **EX02_LinkFamily.cls** Apex class
- Open **HOW/main/default/classes/EX02_LinkFamily.cls**
 - a. In line #5, which annotation are we using?
 - ☐ @IsTest
 - ☐ @Future
 - ☐ @InvocableMethod
 - ☐ @InvocableVariable
 - b. How many methods annotated with **@InvocableMethod** are in this class?
 - ☐ 1
 - ☐ 2
 - c. In line #6, how many parameters take the method?
 - ☐ 1
 - ☐ 2
 - d. What's the data type of the parameter **contacts**?
 - ☐ Contact
 - ☐ List<Contact>

e. How many Contact records can this variable hold?

- ☐ One
- ☐ Many

f. What's the return type?

- ☐ Contact
- ☐ List<Contact>

g. How many Contact records could be returned?

- ☐ One
- ☐ Many

h. From the flow, we are passing and receiving only one record, but here we are receiving and returning many! **Why?**

i. In line #44, which DML operation are we performing?

- ☐ Insert missing families
- ☐ Update all families
- ☐ Delete old contacts

j. Which line is doing the DML of the contacts? (*tricky*)

- ☐ 17
- ☐ 44
- ☐ None, the DML is performed by the flow

5. Review the permission set

- Open **HOW/main/default/permissionsets/HOW.permissionset-meta.xml**

a. In line #8, which class are we enabling?

- ☐ EX01_LinkFamily_Test
- ☐ EX02_LinkFamily
- ☐ EX03_QueryFamilies

Exercise 3: @invocableMethods with Complex data structures

Goal: Review how complex data structures work with @invocableMethods

What does the flow do?

1. Open the **EX03 - DataStructures** flow
 - a. What type of flow is this?
 - ☐ French fries flow
 - ☐ Pirate flow
 - ☐ Screen flow
 - Open the **Screen030** element
 - b. What is the expression displayed in the display text element?
 - ☐ {!response.theQuestion}
 - ☐ {!response.theAnswer}
 - Click **Cancel**
 - Click **Run** to test this screen flow
 - c. What value is being displayed for **The answer**?
 - ☐ 42
 - d. Is that the right answer? (Geeky joke)
 - ☐ Yes

Note:

If you did not understand question 1d, **after class** you must check this [Wikipedia article](#) and this [YouTube video](#)

How was the solution built?

2. Go back to the **EX03_DataStructures** flow

- Go back to the **EX03_DataStructures** flow
- Review the **Get010** element
- a. What is the equivalent SOQL query?

SELECT _____
FROM _____
WHERE _____
ORDER BY _____
LIMIT _____

b. What is the API name of the variable that holds the results?

- ☐ Get010
- ☐ Apex020
- ☐ Screen030

3. Review the **Apex020** element

a. How many input values are we sending?

- ☐ 0
- ☐ 2
- ☐ 4

b. What value are we sending for **Family Inputs**?

- ☐ Only one family
- ☐ All the families retrieved by {!Get010}

c. Since **Max Families** value is not required, how can we indicate we are not passing a value?

- ☐ Value is required
- ☐ Leave the textbox empty
- ☐ Just toggle the switch

- Expand the **Advanced** section
 - d. What is the variable name receiving the result from the Apex call?
 - ☐ response
 - ☐ Get010
 - ☐ Apex020
 - e. What is the data type of **response**?
 - ☐ List<EX03AE_Response>
 - ☐ EX03AE_Response
 - ☐ List<Family__c>
4. Review the **EX03_QueryFamilies** Apex class
- Open **HOW/main/default/classes/EX03_QueryFamilies.cls**
 - a. In line #2, which annotation are we using?
 - ☐ @IsTest
 - ☐ @Future
 - ☐ @InvocableMethod
 - ☐ @InvocableVariable
 - b. What's the data type of the parameter **familyRequests**?
 - ☐ List<FamilyRequest>
 - ☐ FamilyRequest
 - c. In line #12, what does the **familyRequests[0]** mean?
 - ☐ The first Family__c record
 - ☐ The first Flow Interview
 - ☐ The first Flow Transaction
 - d. In line #11, we have an assertion. Will this ever fail? (*tricky*)
 - ☐ Yes, if we have zero Flow Interviews
 - ☐ Yes, pirate flows create Flow Interviews for each record DML
 - ☐ No, this is a screen flow (one and only one Flow Interview)

- e. Where (which line number) are we defining the **FamilyRequest** class?
- ☐ 3
 - ☐ 26
 - ☐ 33
- f. How many variables are defined in the **FamilyRequest** class?
- ☐ 1
 - ☐ 2
 - ☐ 3
- g. Which annotation are we using for them?
- ☐ @IsTest
 - ☐ @Future
 - ☐ @InvocableMethod
 - ☐ @InvocableVariable
- h. What's the **label** for the first variable?
- ☐ Families input
 - ☐ Families output
 - ☐ maxFamilies
- i. What's the **families** data type?
- ☐ Family__c
 - ☐ List<Family__c>
 - ☐ Integer
- j. In line #3, what's the return type for the @invocableMethod?
- ☐ Family__c
 - ☐ List<Family__c>
 - ☐ List<FamilyResponse>
- k. How many elements, and in which order, should that list contain?
- ☐ Must correspond (number, order) to the elements in the parameter
 - ☐ The number and order are not relevant
 - ☐ Any number and order is fine

- l. Which line number is the **FamilyResponse** defined?
 - ☐ 3
 - ☐ 26
 - ☐ 33

- m. Which annotation are we using for **response**?
 - ☐ @IsTest
 - ☐ @Future
 - ☐ @InvocableMethod
 - ☐ @InvocableVariable

- n. What's the data type of **response**?
 - ☐ FamilyResponse
 - ☐ EX03AE_Response
 - ☐ EX03_QueryFamilies

- 5. Review the **EX03AE_Response.cls** Apex class
 - Open **HOW/main/default/classes/EX03AE_Response.cls**
 - a. How many properties are in the **EX03AE_Response** class?
 - ☐ 1
 - ☐ 2
 - ☐ 3

 - b. Which annotation are we using for them?
 - ☐ @IsTest
 - ☐ @AuraEnabled
 - ☐ @InvocableMethod
 - ☐ @InvocableVariable

 - In question 1a, We saw the flow used **{!response.theAnswer}**
 - Thanks, @AuraEnabled!

Exercise 4: Display contacts grouped by families

Goal: Using a LWC display the Family__c records grouped by last name and show their related Contact records

What does the flow do?

1. Navigate the **Families** application
 - Open the **home** tab
 - Click on the **Finish** button
 - a. What happened?
 - ☐ Error: "You can't go past this screen!"
 - ☐ Navigated to the next screen
 - ☐ Flow completed successfully
 - Find the **Pérez** family
 - Expand the **Pérez** family
 - Click on **Andrés**
 - b. What happened?
 - ☐ Error: "You can't navigate!"
 - ☐ Navigated to the Andrés Pérez contact record
 - ☐ Nothing!

How was the solution built?

2. Open the **EX04 - TreeGrid** flow
 - a. What type of flow is this?
 - ☐ French fries flow
 - ☐ Pirate flow
 - ☐ Screen flow
 - **NOTE:** This flow is very similar to the previous one, except for the **Screen030** element. So let's review just that.

- Review the **Screen030** element
 - b. What is the name of the custom component?
 - ☐ Display Text
 - ☐ Family Tree Grid
 - ☐ There is none!
 - Select the **Family Tree Grid** component
 - c. What is the label for the textbox containing the expression **{!response}**?
 - ☐ Family Data
 - ☐ API Name
3. Review the **ex04TreeGrid** LWC component
- Find the **HOW/main/default/lwc/ex04TreeGrid** folder
 - Open the **ex04TreeGrid.html** file
 - a. Which standard component are we using?
 - ☐ <lightning-tree-grid />
 - ☐ <lightning-button />
 - ☐ <lightning-card />
 - Open the **ex04TreeGrid.js-meta.xml** file
 - b. In line #5, what is the **masterLabel**?
 - ☐ ex04TreeGrid.js
 - ☐ Undefined
 - ☐ Family Tree Grid
 - c. In line #7, what is the **target**?
 - ☐ lightning__FlowScreen
 - ☐ lightning__HomePage
 - ☐ lightning__RecordPage
 - d. In line #13, what does **name="familyData"** represent?
 - ☐ The JavaScript variable
 - ☐ The label for the property in the screen component
 - ☐ The expected data type that flow should pass

- e. In line #13, what does **label="Family Data"** represent?
 - ☐ The JavaScript variable
 - ☐ The label for the property in the screen component
 - ☐ The expected data type that flow should pass

- f. In line #13, what does **type="apex://EX03AE_Response"** represent?
 - ☐ The JavaScript variable
 - ☐ The label for the property in the screen component
 - ☐ The expected data type that flow should pass

- Open the **ex04TreeGrid.js** file
- g. How do we get the families' data?
 - ☐ @wire (data from Apex)
 - ☐ @api familyData (data from the flow)
 - ☐ Imperative Apex (data from Apex)

- h. In line #59, what's the error message?
 - ☐ You can't go past this screen!
 - ☐ You can't view contacts

- i. In line #77, what are we doing?
 - ☐ Navigating to the Contact record
 - ☐ Displaying an error message