
salesforce
Troubleshooting
Recursive Triggers
Understand & fix them!
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Overview

Our game plan

1. Introduction
2. **Scenario 1:** *Spouse Situation*
3. **Scenario 2:** *Declarative Side Effects*
4. Lessons Learned
5. Next Steps
6. Q&A

Introduction

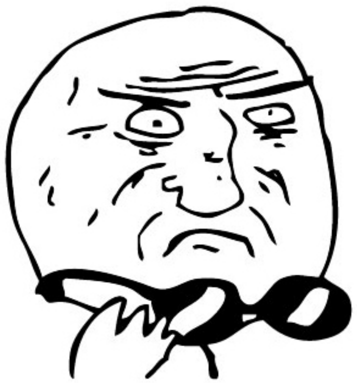
Learn the lingo

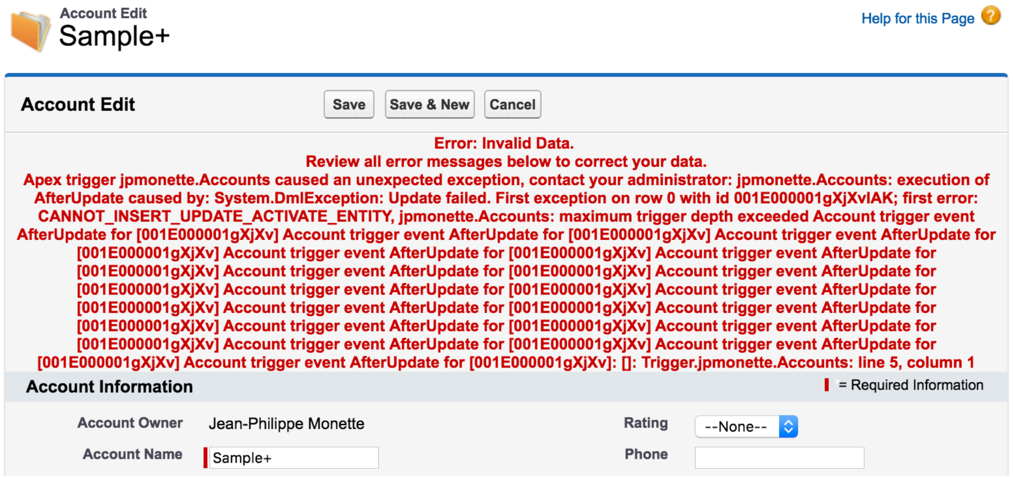
What are **Apex Triggers?**

- Apex Triggers enable you to perform custom actions before and after changes to Salesforce records, such as insertions, updates, or deletions.

What is a **Recursive Trigger**?

- A recursive trigger is one calling itself multiple times in the same transaction.





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Spouse Situation

Scenario #1

Scenario #1: Spouse Situation

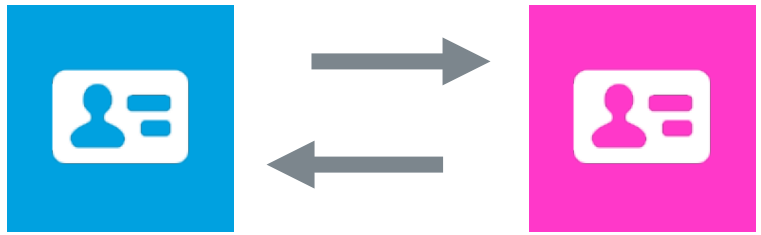
Logic implemented on the Contact Object

Business Logic

- When a **Contact** record is associated to its **Spouse** (another Contact record) using a lookup field, the system must create the reciprocal relationship on the **Spouse** record
  - Implemented in a trigger named `ContactTrigger`

Symptom of recursivity

- A *DmlException* is displayed on the User Interface, preventing User from updating record



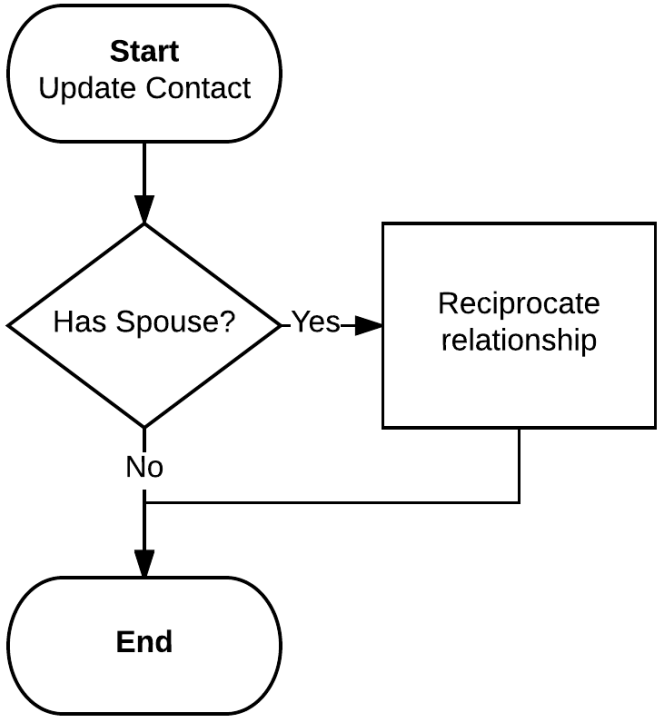
Let’s troubleshoot!

Scenario #1

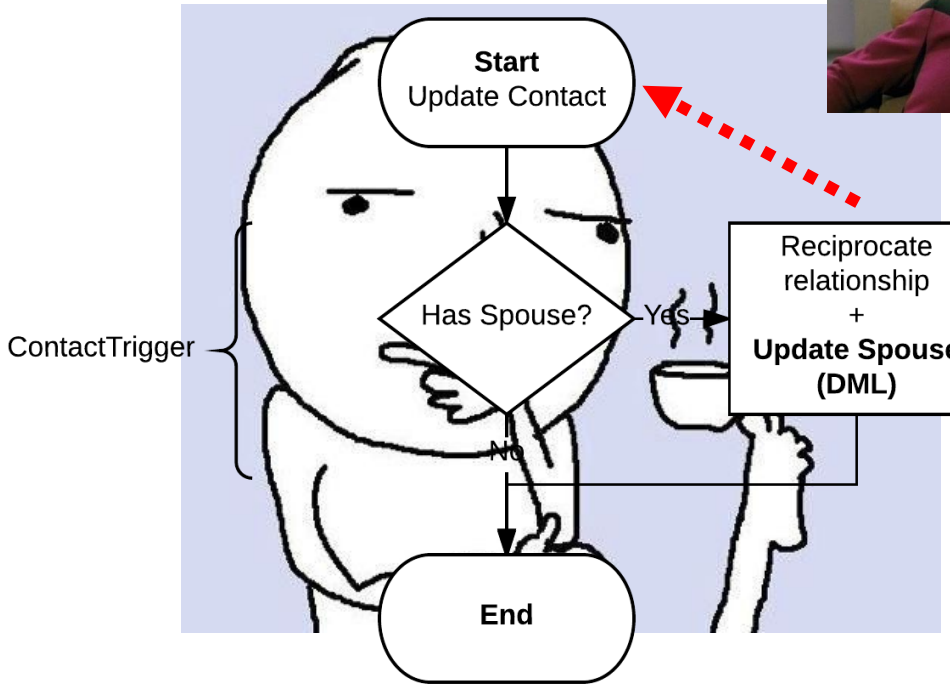
Scenario #1: Process Mapping

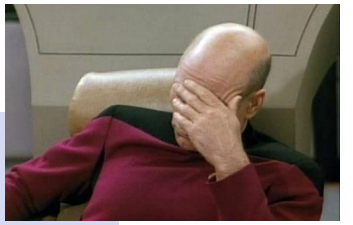
What is going on?

Expected behavior



Actual behavior





Let’s fix that bug

Scenario #1

Declarative Side Effects

Scenario #2

Scenario #2: Declarative Side Effects

Logic implemented on the Lead Object

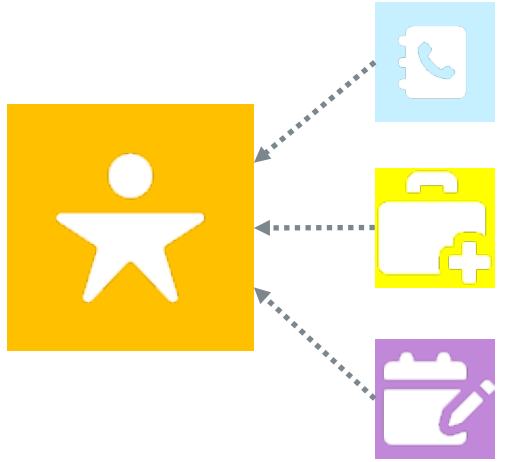
Business Logic

- When a **Lead** is updated, the custom field named **Number of Updates** is incremented by 1 to keep track of track **Lead** activity.
  - Implemented in a trigger named `UpdateCountTrigger`

- When the standard field **Number of Employees** is changed, the custom field **Company Size** is automatically populated.
  - Implemented in 3 Workflow Rules & 3 Field Updates

Symptom of recursivity

- The field **Number of Updates** is incremented by 2 when the field **Company Size** is modified.



Change Contact details:

No. of Updates + 1

Change Business info. :

No. of Updates + 1

Change No. of employee :

No. of Updates + 1

No. of Employees	Company Size
0 to 49	Small
50 to 245	Medium
250 and more	Large

Let’s troubleshoot

Scenario #2

Scenario #2: Order of Execution

What is that all about?

Triggers and Order of Execution

When you save a record with an `insert`, `update`, or `upsert` statement, Salesforce performs the following events in order.

1. Loads the original record from the database or initializes the record for an `upsert` statement.
2. Loads the new record field values from the request and overwrites the old values.
7. Executes all `after` triggers.
8. Executes assignment rules.
9. Executes auto-response rules.
10. Executes workflow rules.
11. If there are workflow field updates, updates the record again.
12. If the record was updated with workflow field updates, fires `before update` triggers and `after update` triggers one more time (and only one more time), in addition to standard validations. Custom validation rules, duplicate rules, and escalation rules are not run again.

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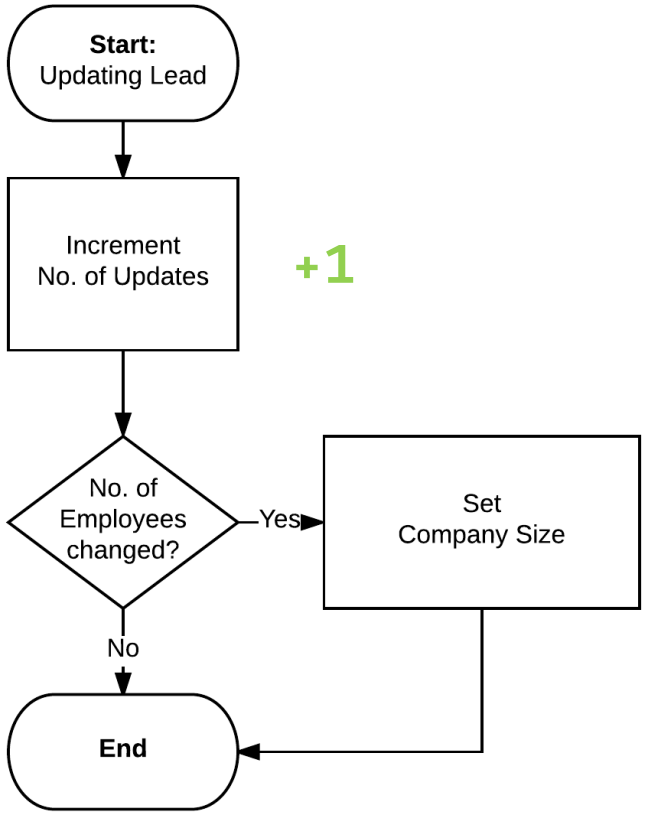
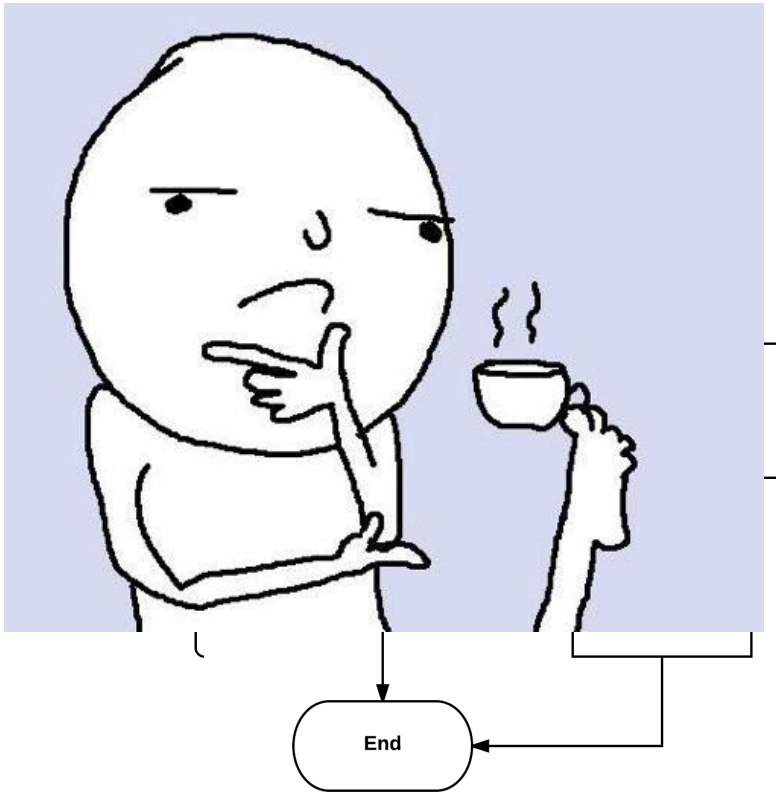
Scenario #2: Process Mapping

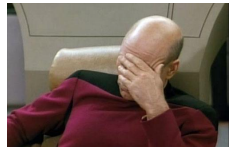
Are you sure you know what is really going on?

Expected behavior



Actual behavior





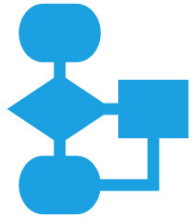
Let’s fix the bug

Scenario #2

Lessons Learned

Make sure you understand the business logic

- Document your processes and architecture



Use Static variables: they are your friend

- Use them to track state during a transaction
- Implement trigger logic in Apex classes

Do regression testing when adding features

- Validate that Programmatic & Declarative features play nice together
- Use the Developer Console to assist you when troubleshooting

Next Steps

Be proactive – learn more!

Familiarise yourself with the Developer Console

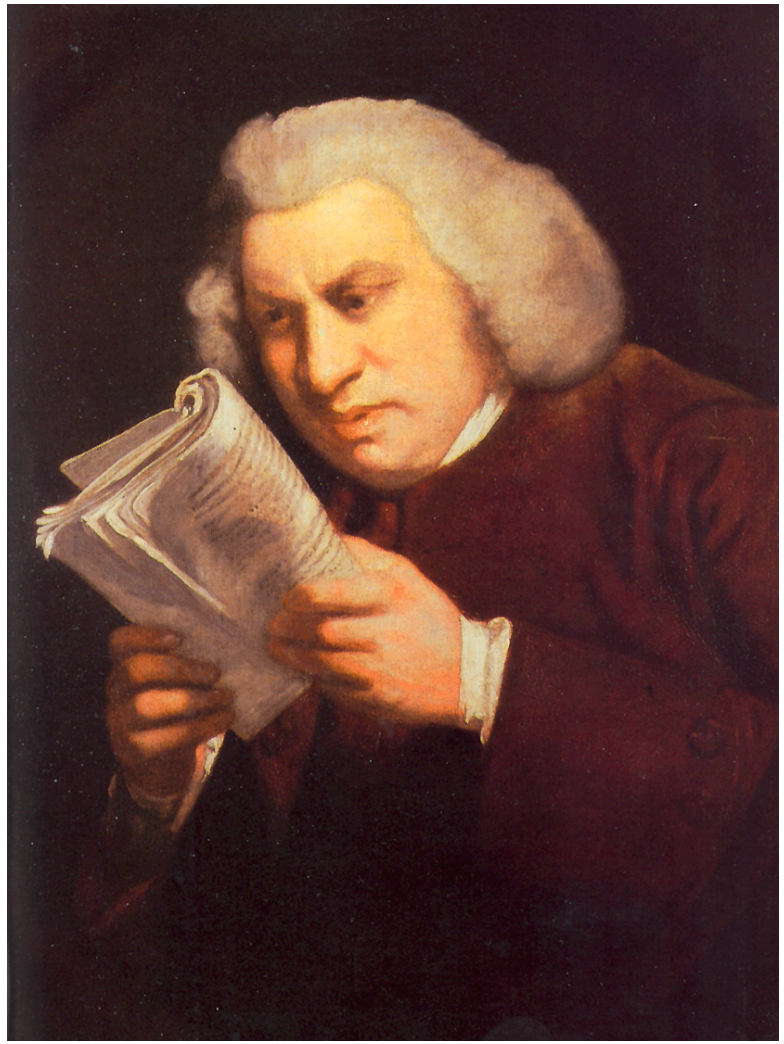
- Developer Console User Interface Overview

Learn more about Order of Execution

- Triggers and Order of Execution

Use Trigger Templates to streamline Trigger logic

- The “One Trigger per Object” design pattern
- Trigger Pattern for Tidy, Streamlined, Bulkified Triggers



* Slides and Code available on Chatter

Thank You