Why Baker?

Our Challenge

Interact with 12 Different Systems

A Flow of 27 Steps

From 2 minutes to 6 hours

Requirements

TIBCO is contained

Java developers

State in two data-centres

Systems fail all the time

Current Account	Savings Account	Customer Onboarding
Verify Identity	Verify Identity	Verify Identity
Register Individual	Register Individual	Register Individual
Open *Current* Account	Open *Savings* Account	n/a
Issue Debit Card	n/a	n/a
Send Message	Send Message	Send Message
Register Ownership	Register Ownership	n/a

Baker is a Scala Library

Declare the Logic Like a Recipe

Visualize the Logic

Don't Worry About Retries and State

Re-use What's Already There

Recipes

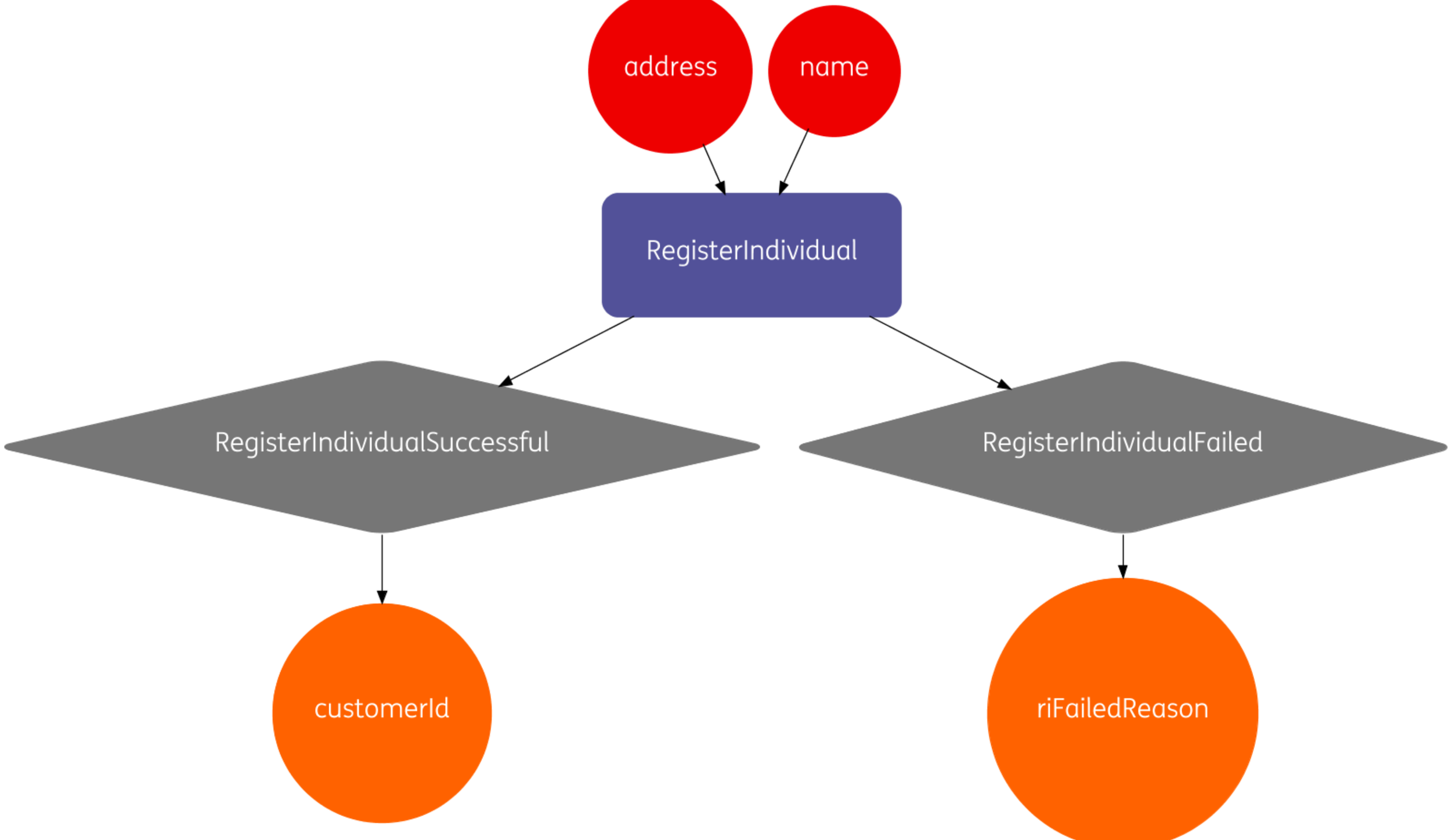
Interactions

Ingredients

Events

Design-time

```
val registerIndividual = Interaction(
  name = "RegisterIndividual",
  inputIngredients = Seq(name, address),
  output = FiresOneOfEvents(registerIndividualSuccessful, registerIndividualFailed)
)
```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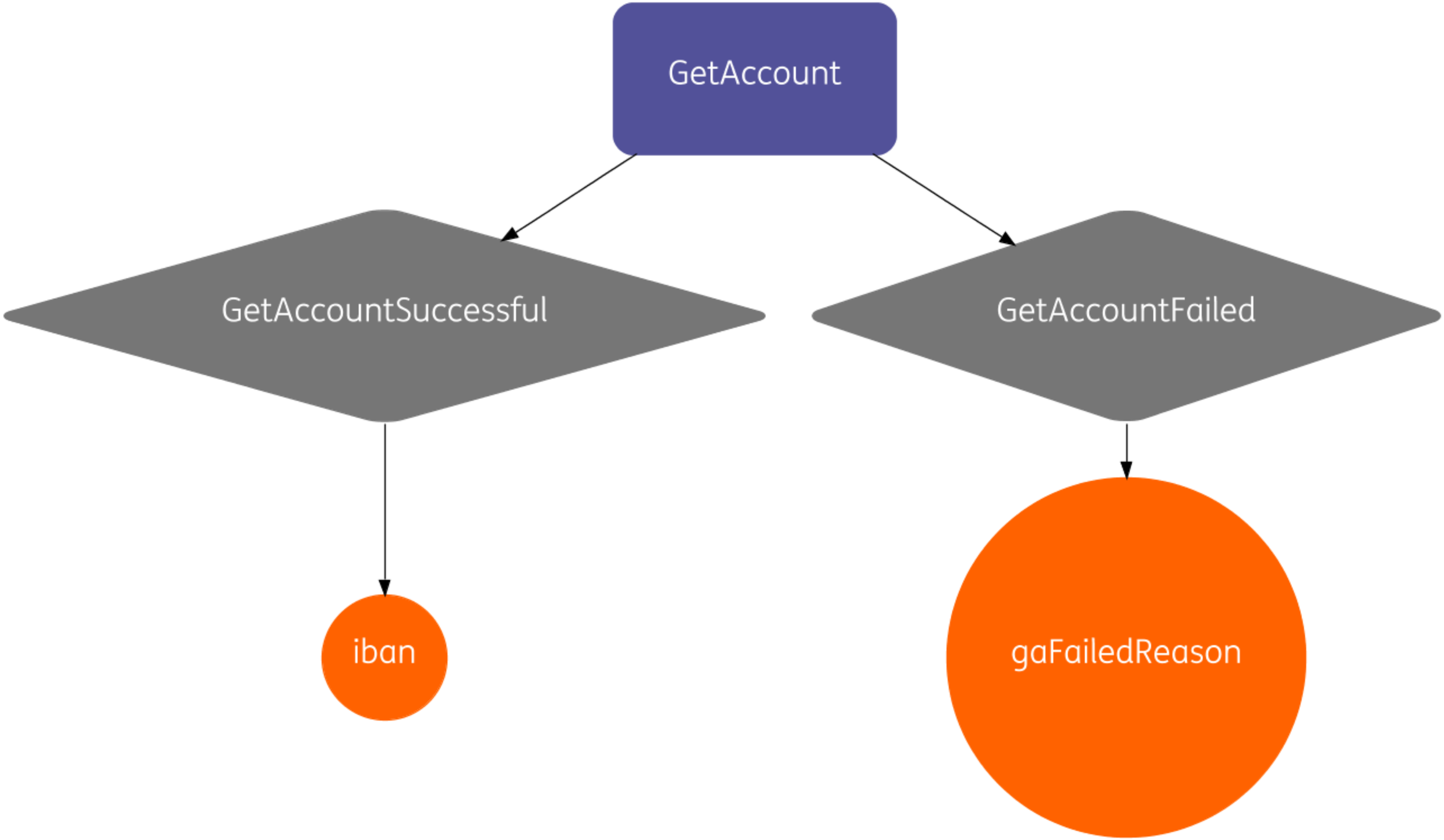
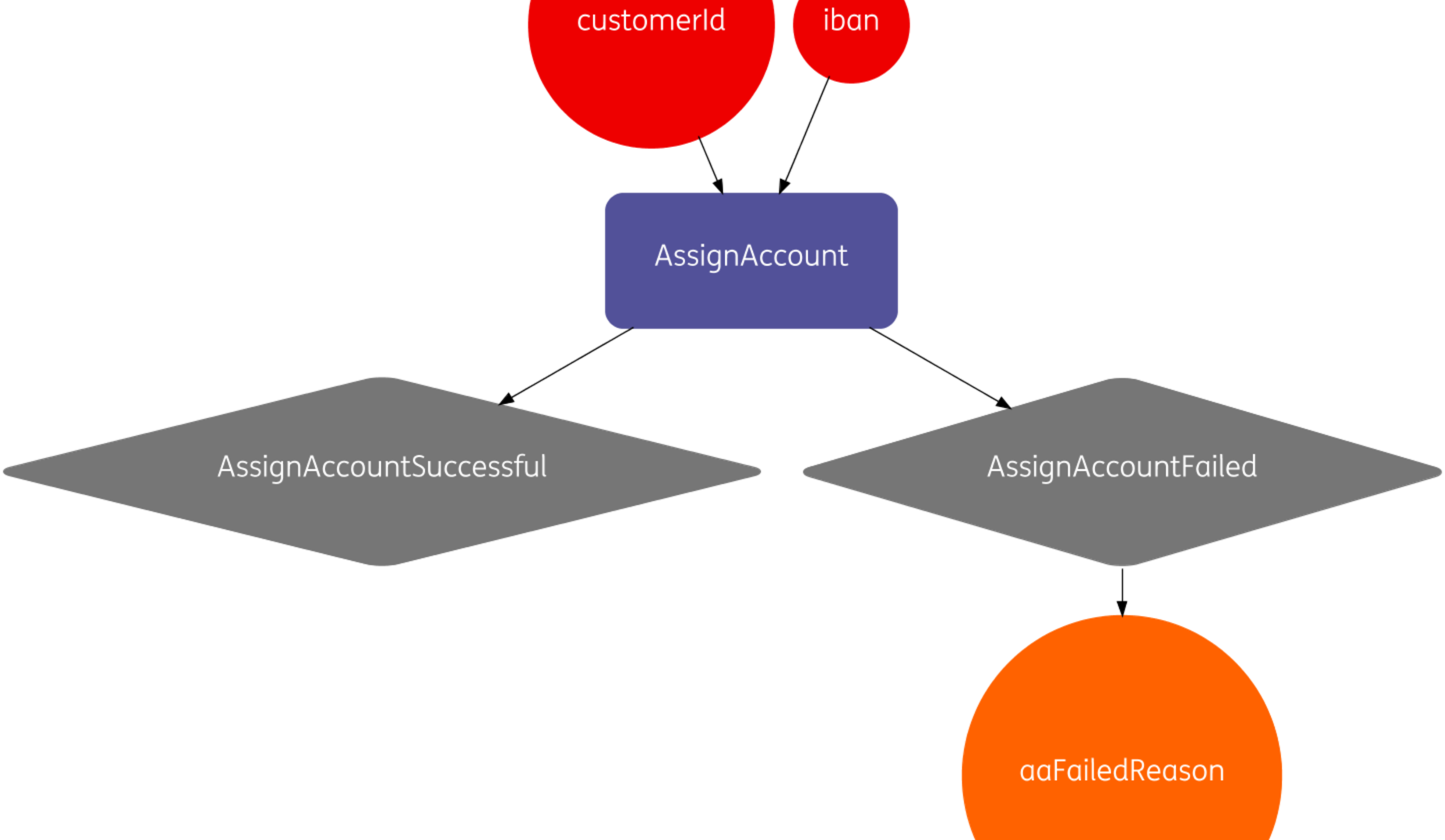
RegisterIndividualSuccessful
RegisterIndividualFailed
customerId
riFailedReason


GetAccount
GetAccountSuccessful
GetAccountFailed
iban
gaFailedReason


customerId
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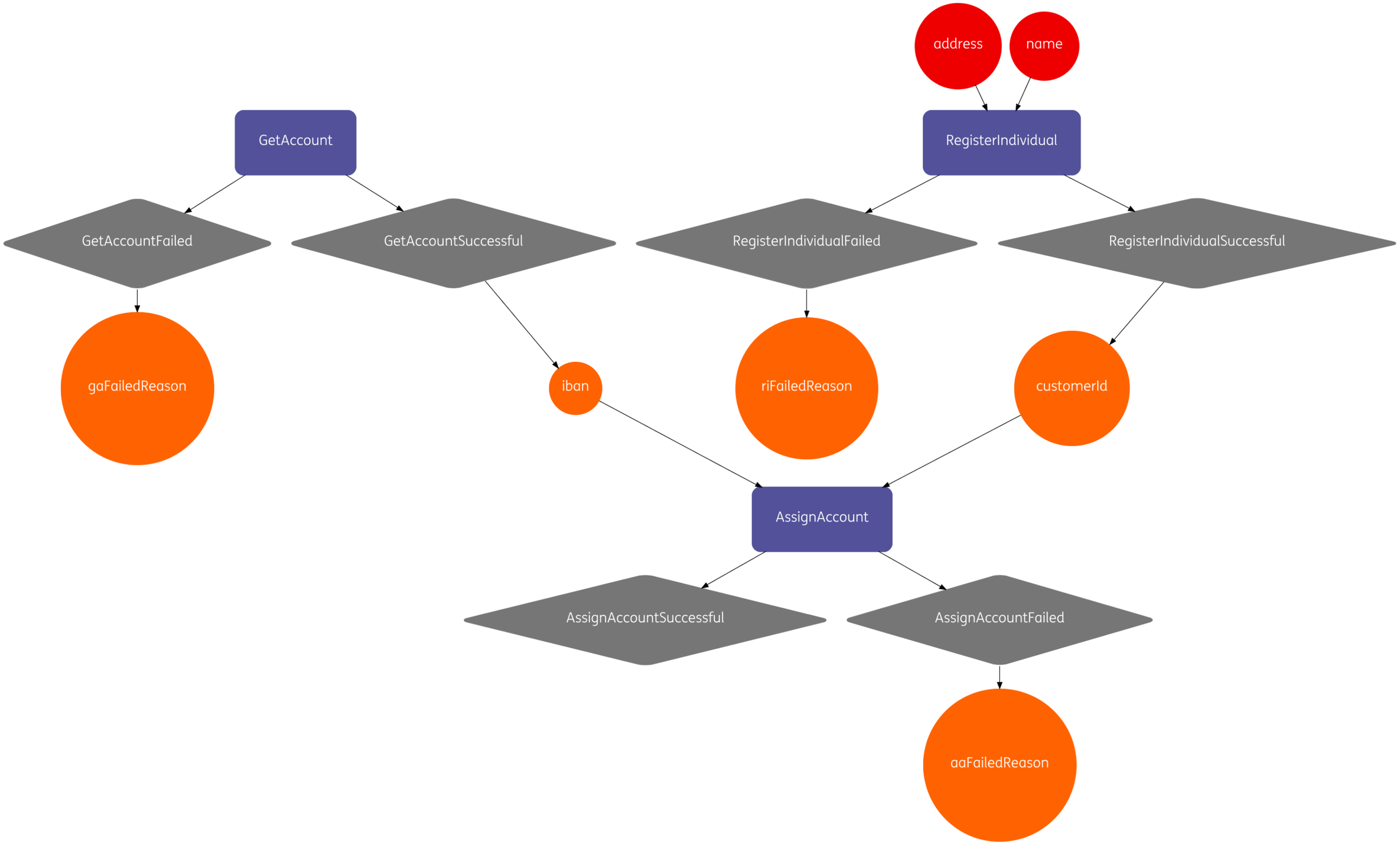
AssignAccount
AssignAccountSuccessful
AssignAccountFailed
aaFailedReason

```
val recipe = Recipe("OpenAccountRecipe")
  .withInteractions(
    assignAccount,
    getAccount,
    registerIndividual)
```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RegisterIndividualFailed
RegisterIndividualSuccessful
gaFailedReason
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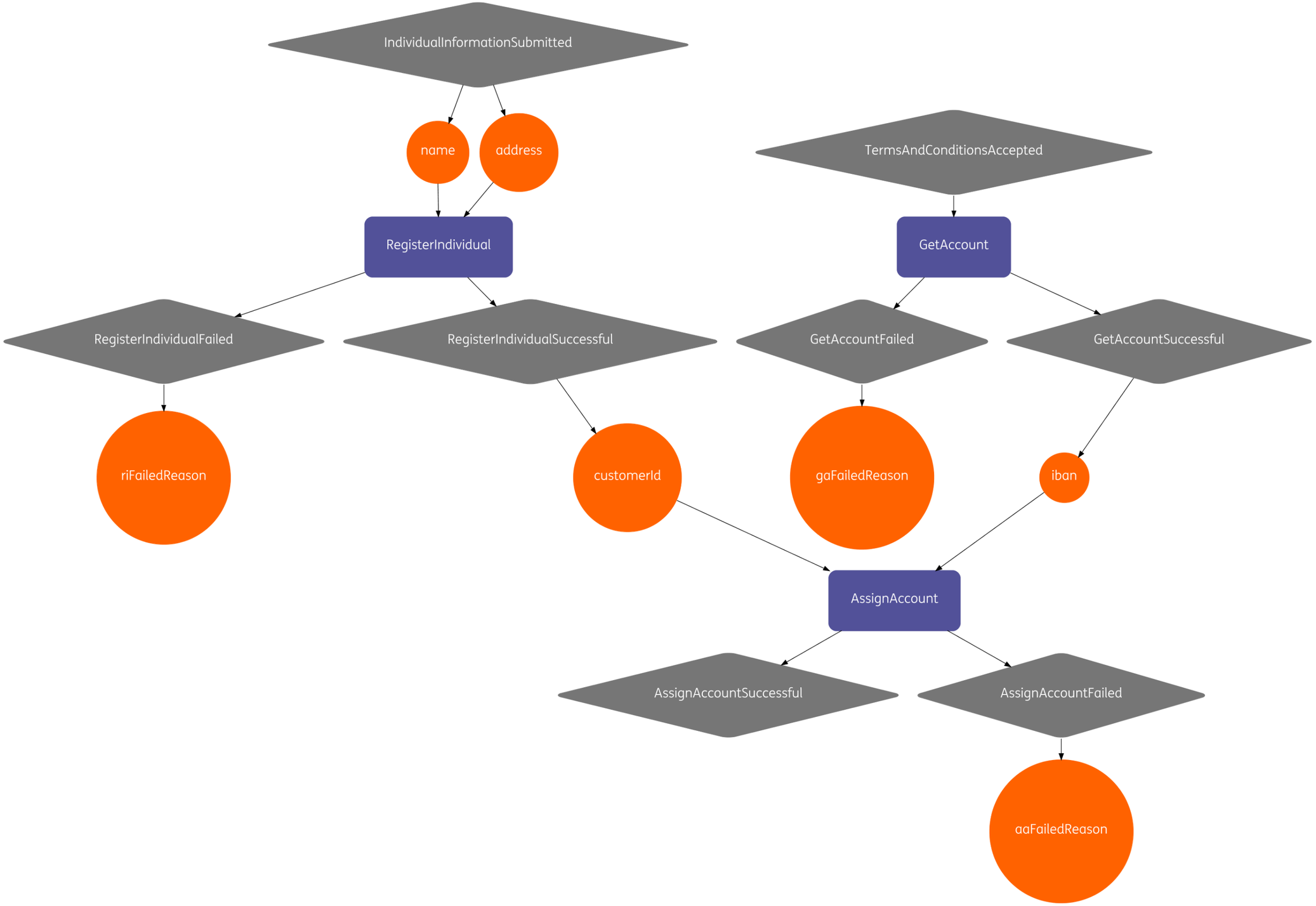
riFailedReason
customerId
AssignAccount
AssignAccountSuccessful
AssignAccountFailed
aaFailedReason

```
val recipe = Recipe("OpenAccountRecipe")
  .withInteractions(
    assignAccount,
    getAccount.withRequiredEvent(termsAndConditionsAccepted),
    registerIndividual)
  .withSensoryEvents(
    termsAndConditionsAccepted,
    individualInformationSubmitted)
```


IndividualInformationSubmitted
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riFailedReason
customerId
TermsAndConditionsAccepted
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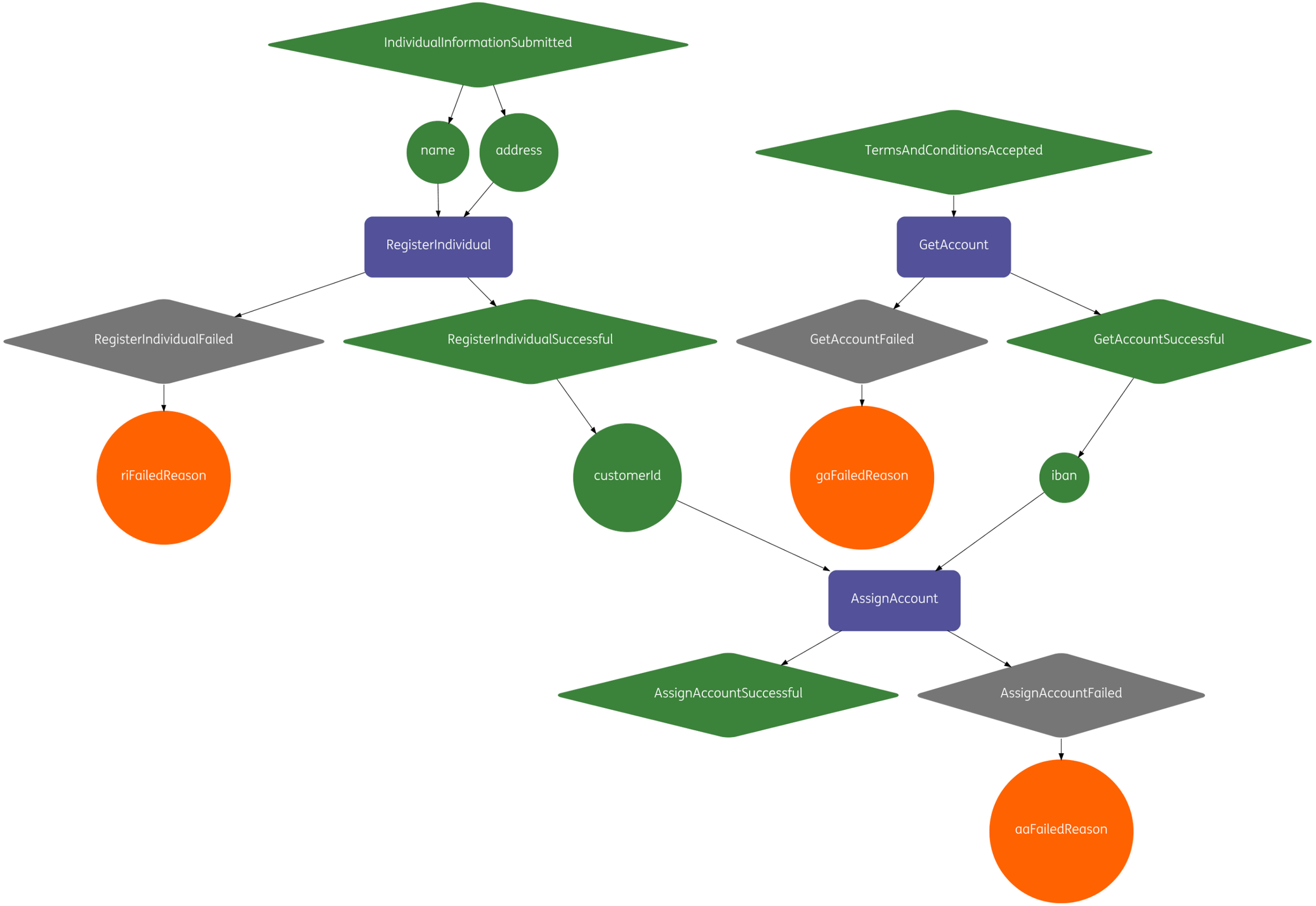
GetAccountFailed
GetAccountSuccessful
gaFailedReason
iban
AssignAccount
AssignAccountSuccessful
AssignAccountFailed
aaFailedReason

Run-time

```
//for each process instance, bake the recipe
baker.bake(processId);
//notify Baker when events occur
baker.processEvent(processId, individualInformationSubmitted.instance(name, address));
baker.processEvent(processId, termsAndConditionsAccepted.instance());

//retrieve ingredients stored in the accumulated state
assert(baker.getIngredients(processId).get("customerId").equals(customerId));
assert(baker.getIngredients(processId).get("iban").equals(iban));

//retrieve all events that have occurred
baker.events(processId)
```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Good to Know

Short-lived vs. long-running flows

State is taken care of:

- Cassandra for persistent storage
- Ingredients encrypted by default
- State recovered automatically
- Configurable Time-to-live

When failure occurs:

- Baker retries technical failures with exponential backoff
- Works well with **idempotent** services
- Deal with functional failure in your recipe

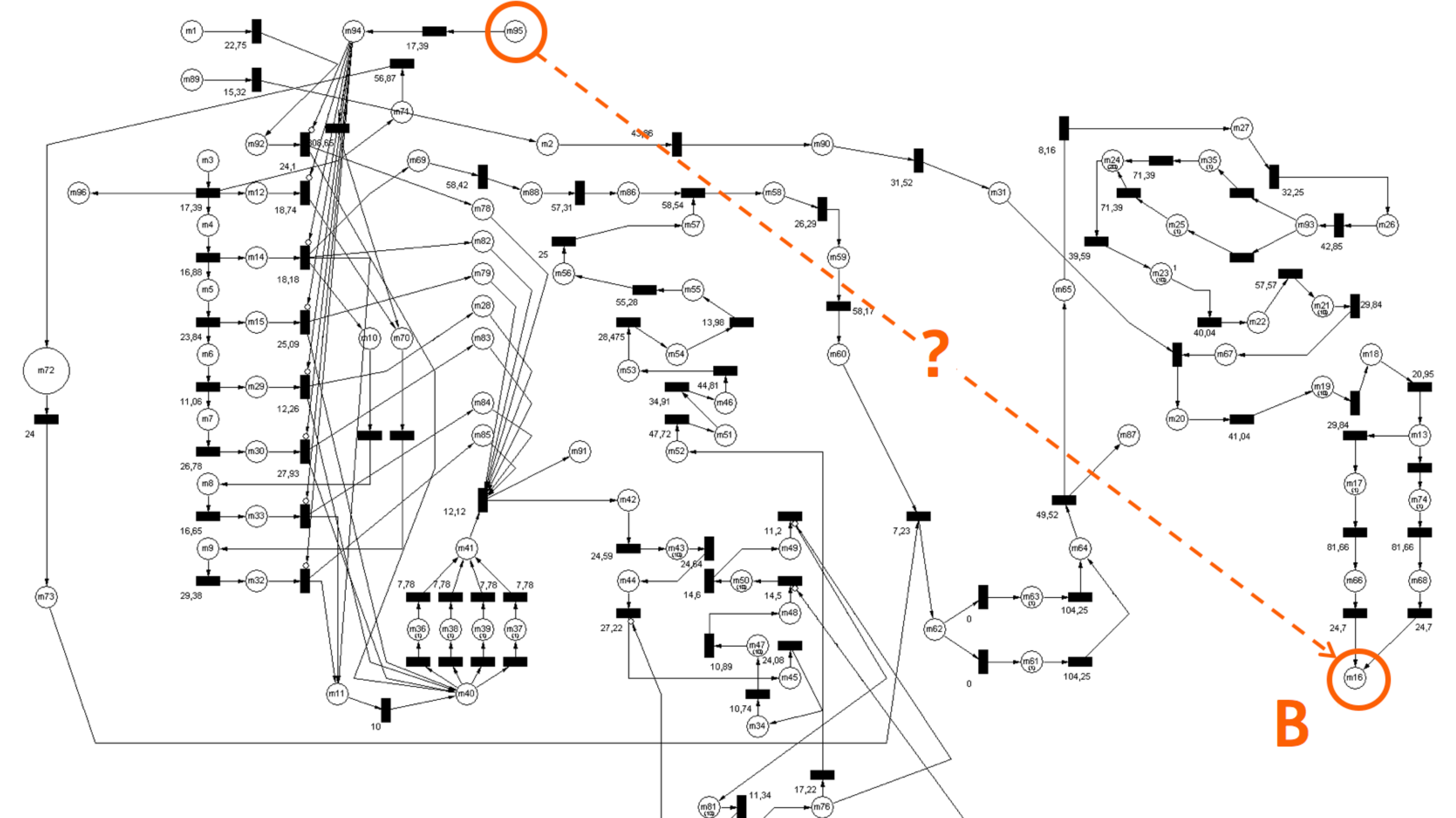
Baker Catalogue: Some Stats

Internal ING library

80+ Re-usable Interactions

10+ Teams Using Baker

What Questions Do You Have?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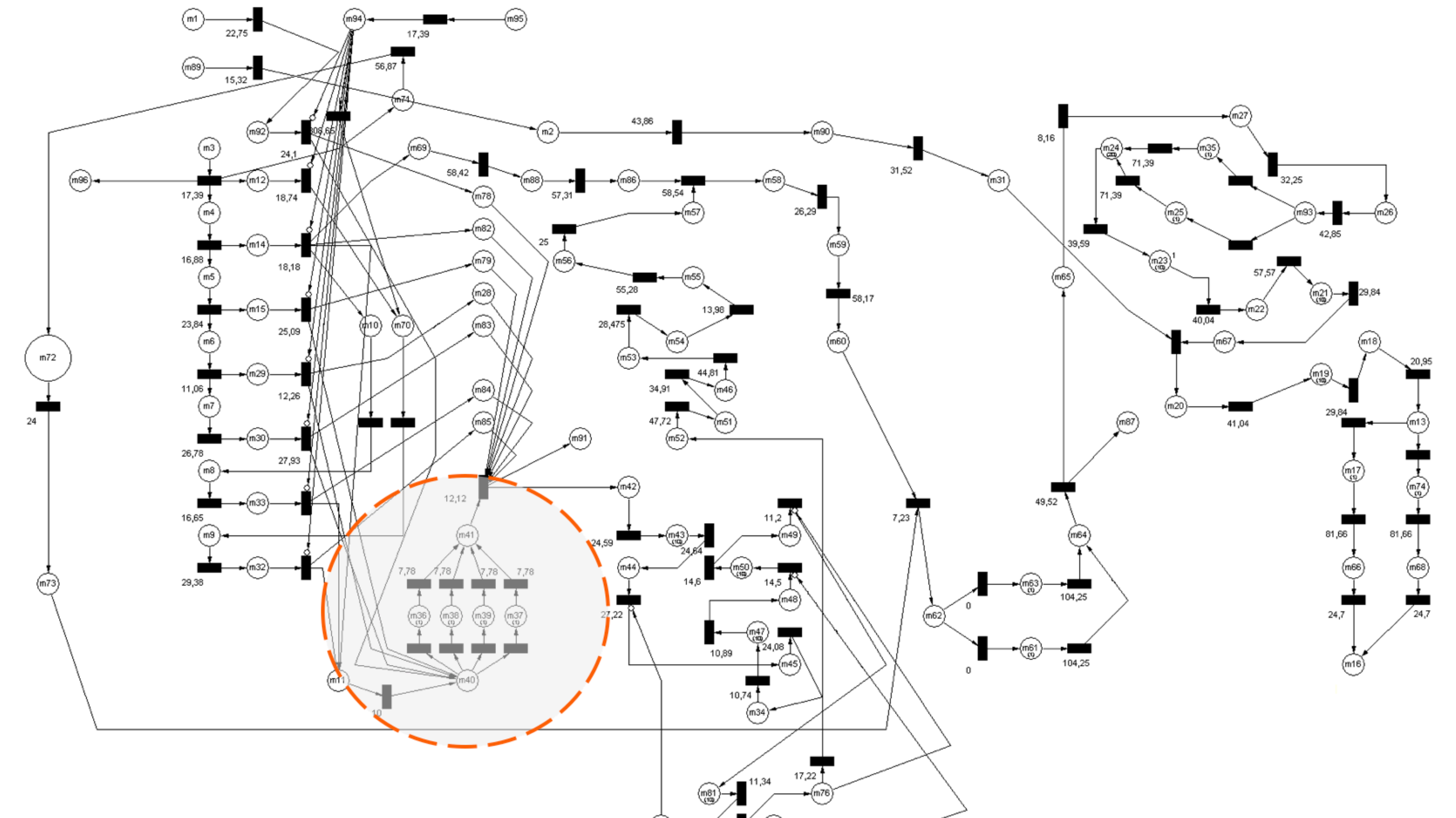
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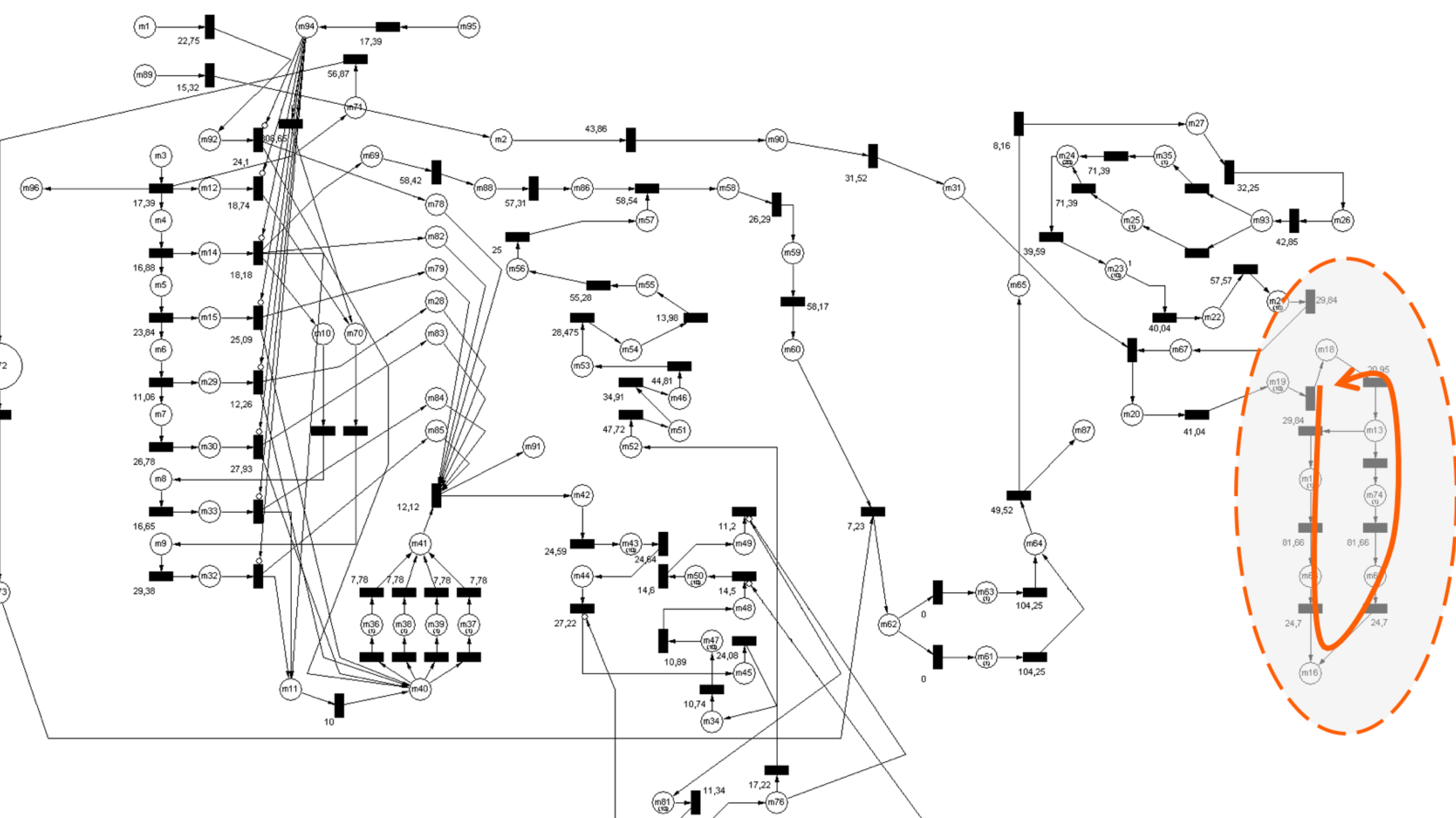
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Baker vs. PEGA

Baker	PEGA
Computer	Computer + Human
Focused on APIs	Focused on processes
No License Costs	License Costs
No Usage Costs	Pay per Case Costs
For Java Developers	For PEGA Specialists
From ING	From PEGA