

**ORACLE®**

# Oracle Digital Assistant

## The Complete Training

Skills and Digital Assistant insights



Image courtesy of pixabay.com

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# Topic agenda

- 1 ➤ Overview
- 2 ➤ High level analysis
- 3 ➤ Complete & incomplete paths
- 4 ➤ Drill down to conversations
- 5 ➤ Find root cause of failures
- 6 ➤ Insights Data Management & Export API

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# Overview

- What are the problems and how do I fix them?
  - Is my skill performing well?
  - In which cases can't the skill continue?
  - How do I find root cause of why my skill fails?
- Developer oriented analytics
  - Track conversation trends, intent resolution accuracy
  - Identify most/least popular execution paths
  - Conversation debugger with transcripts
- Moderated self learning
  - Augment intent resolution using insights data

# Overview

- Disabled by default
- Available at instance level, digital assistant & skill level
- No instrumentation required
- Conversation completion status
  - Incomplete conversation : one that resulted into an error or abandoned by the user
  - A complete conversation : typically represented by execution of a state that has a return transition

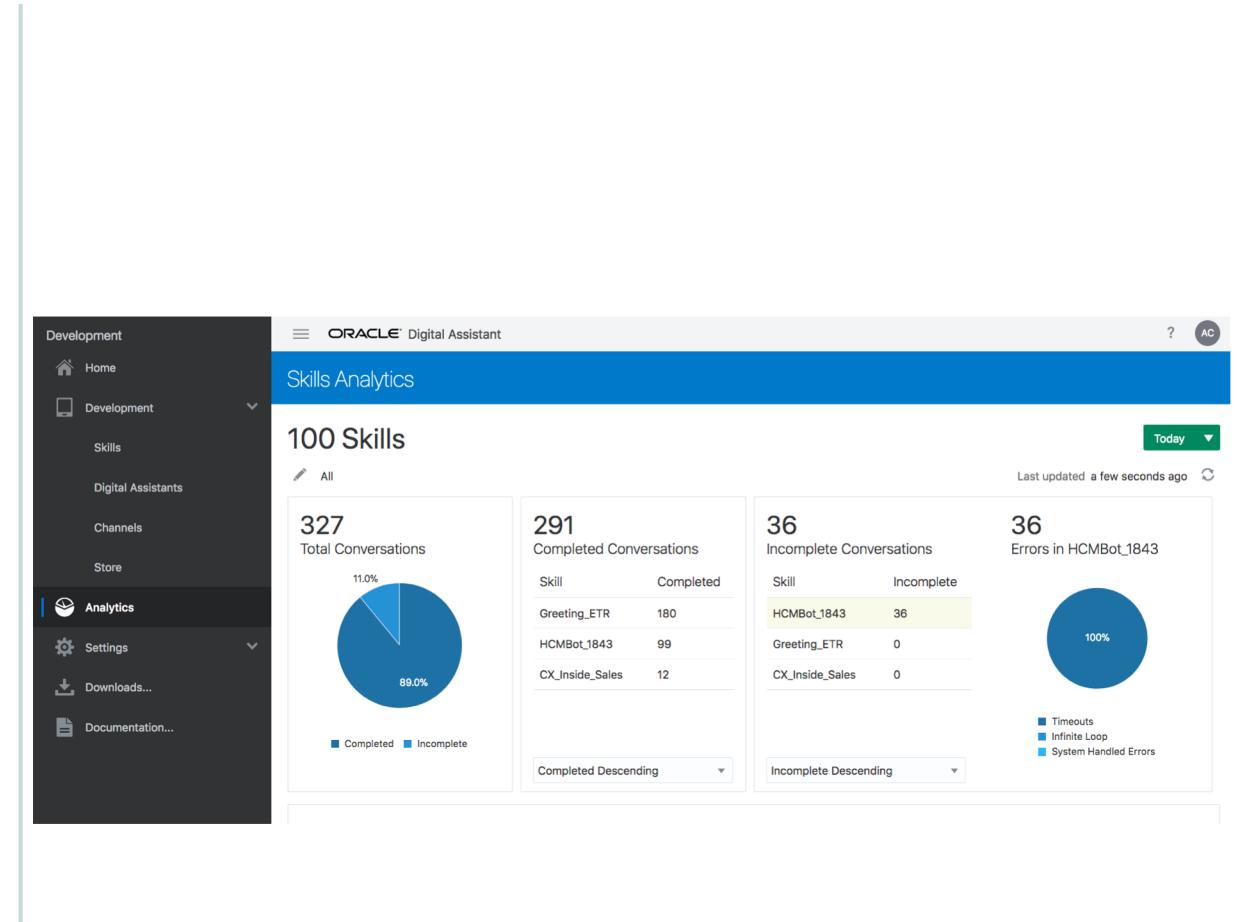
The screenshot shows the Oracle Digital Assistant interface for managing skills. The top navigation bar includes the Oracle logo and the title "Skills • FinancialBot". A blue header bar indicates the skill is in "DRAFT • 1.0" status. The main area is divided into tabs: General (selected), Configuration, Digital Assistant, Events, and Q&A Routing Config. On the left, there's a vertical sidebar with icons for different skill components. The General tab displays the following configuration details:

Setting	Value
Display Name	FinancialBot
Name	FinancialBot
Version	1.0
Category	Category your Skill bot falls under
One-Sentence Description	PLEASE DO NOT TOUCH THIS _ USED FOR DEMOS & TIED TO BIGO
Detailed Description	This description appears on the skill's Details page in the skills catalog
Training Model	Trainer Ht
Translation Service	None

A red box highlights the "Enable Insights" toggle switch at the bottom right of the General tab.

# LOB level insights

- Developer analytics are in the context of a single skill,
- LOB-oriented analytics provide an operational view across all the skills in an ODA.
- Goals: Identify usage patterns/popular channels, key problems, common reasons for failures
- Reference Documentation



☰ ORACLE® Digital Assistant ? AC

## Skills Analytics

# 100 Skills

Last updated a few seconds ago

Today ▾

All

**327** Total Conversations

Total conversations at the Oracle Digital Assistant Level

Completed: 89.0%  
Incomplete: 11.0%

Completed   Incomplete

**291** Completed Conversations

Skill	Completed
Greeting_ETR	180
HCMBot_1843	99
CX_Inside_Sales	12

Completed Descending

**36** Incomplete Conversations

Skill	Incomplete
HCMBot_1843	36
Greeting_ETR	0
CX_Inside_Sales	0

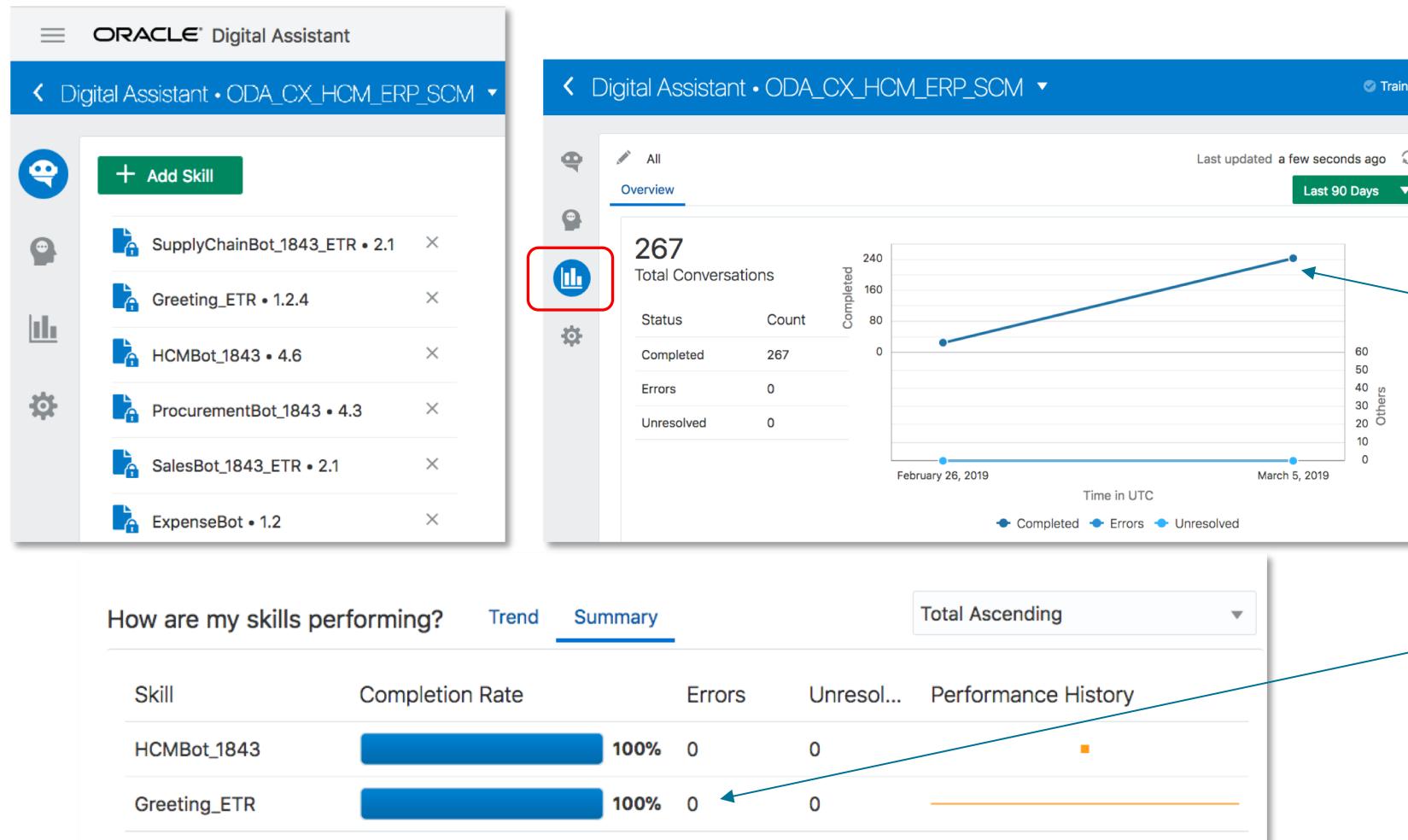
Incomplete Descending

**36** Errors in HCMBot\_1843

100%

- Timeouts
- Infinite Loop
- System Handled Errors

# Digital Assistant insights



Top level routing analytics (conversation metrics, completion/error rates for constituent skills), popular skills by invocation

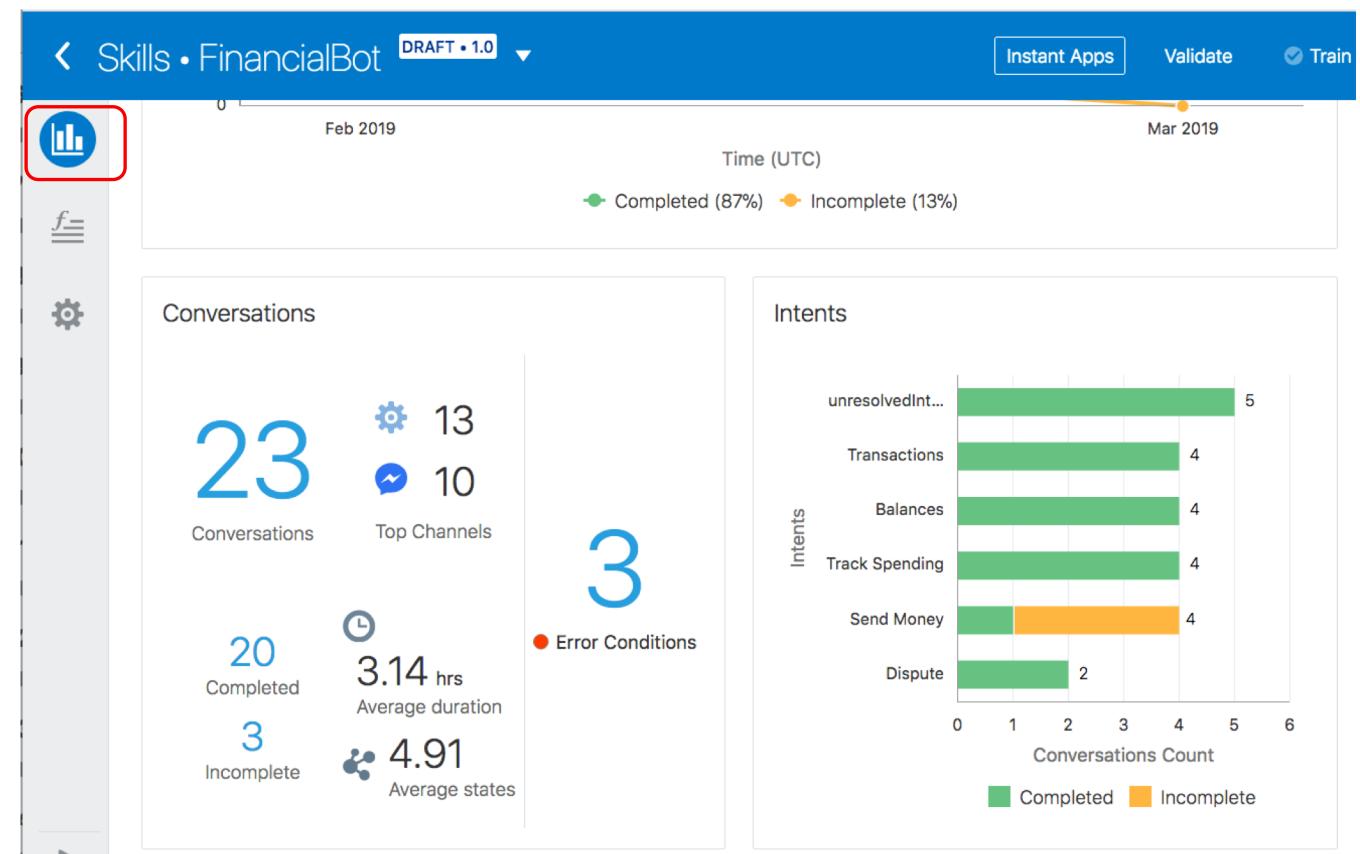
The graph shows total completed conversations across all the skills and also shows conversations that were marked as unresolved.

The indicated skills have a 100% completion rate showing very well designed skills.

[Reference Documentation](#)

# Skill insights

- Skill insights give detailed analysis of a skill in its operational state.
- You can see
  - Number of total conversations
  - Number of completed and incomplete conversations
  - Error conditions
  - Completed and incomplete conversations across intents
- Reference Documentation

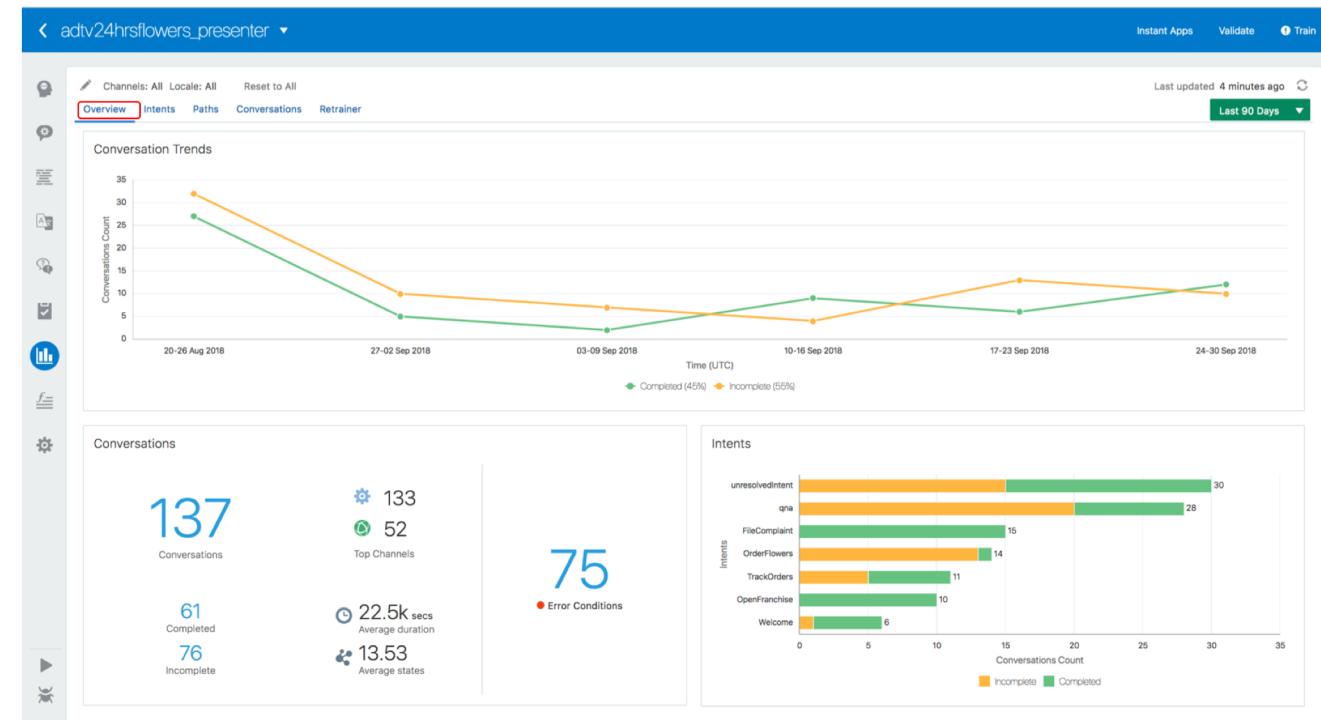


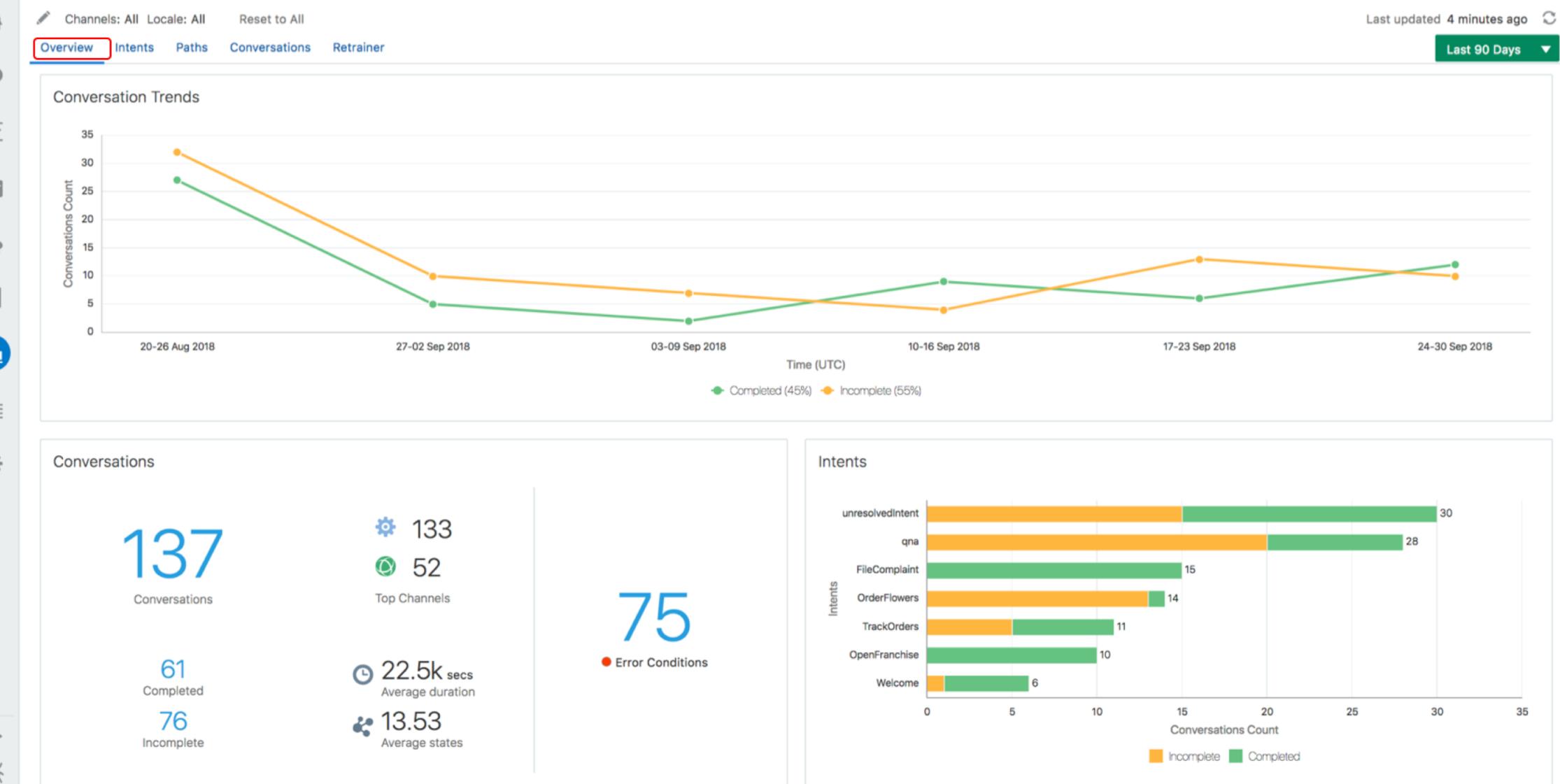
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# Conversation trends, success indicators

- Overview of number of conversation
  - 61 completed
  - 76 incomplete
- Number of error conditions
  - Could indicate user or system failure
- Completion based on intents
  - High number of unresolved
  - File complaint 100% successful
  - Order flowers high incomplete



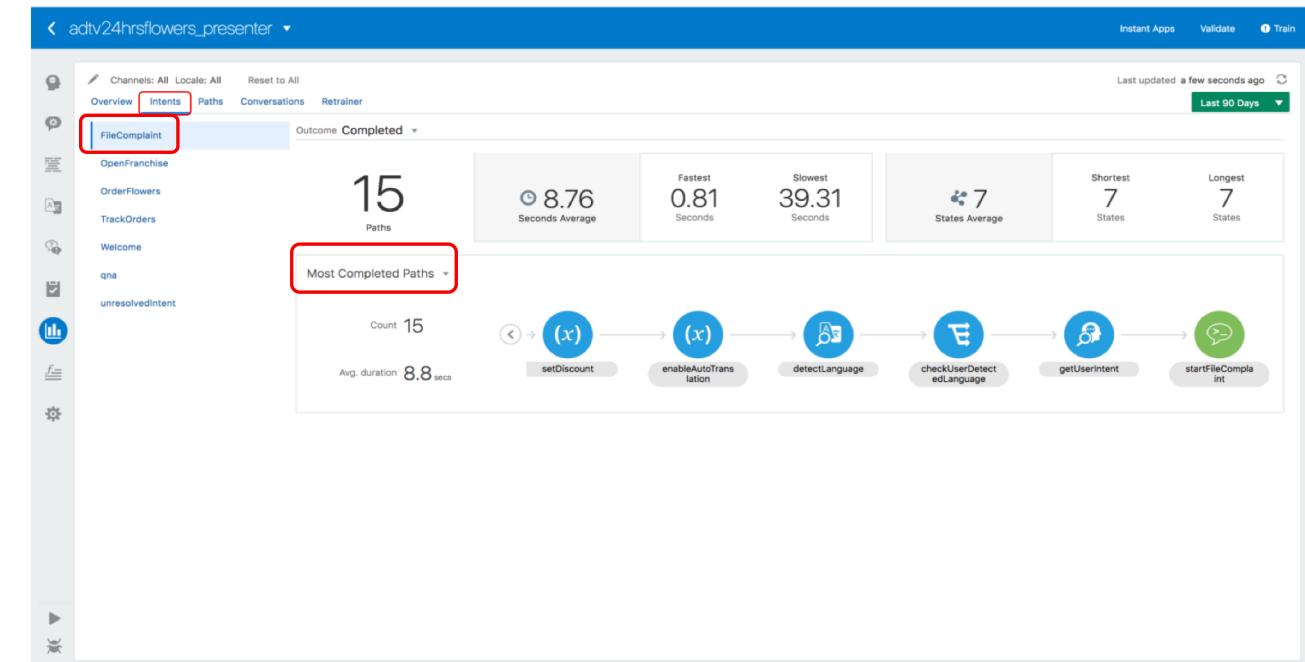


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# Completed paths – tune intents for shorter, faster paths

- For each intent, view the completed path
  - States conversation passed through
  - Completed path defined by a return transition
- You might be interested why some conversations for the same intent are longer than others
  - Either numbers of steps
  - Average time to complete



Channels: All Locale: All Reset to All

Last updated a few seconds ago ↻

Intents Last 90 Days ▾

FileComplaint Completed

Paths

15 Paths

8.76 Seconds Average

Fastest 0.81 Seconds

Slowest 39.31 Seconds

States Average 7 States

Shortest 7 States

Longest 7 States

Most Completed Paths

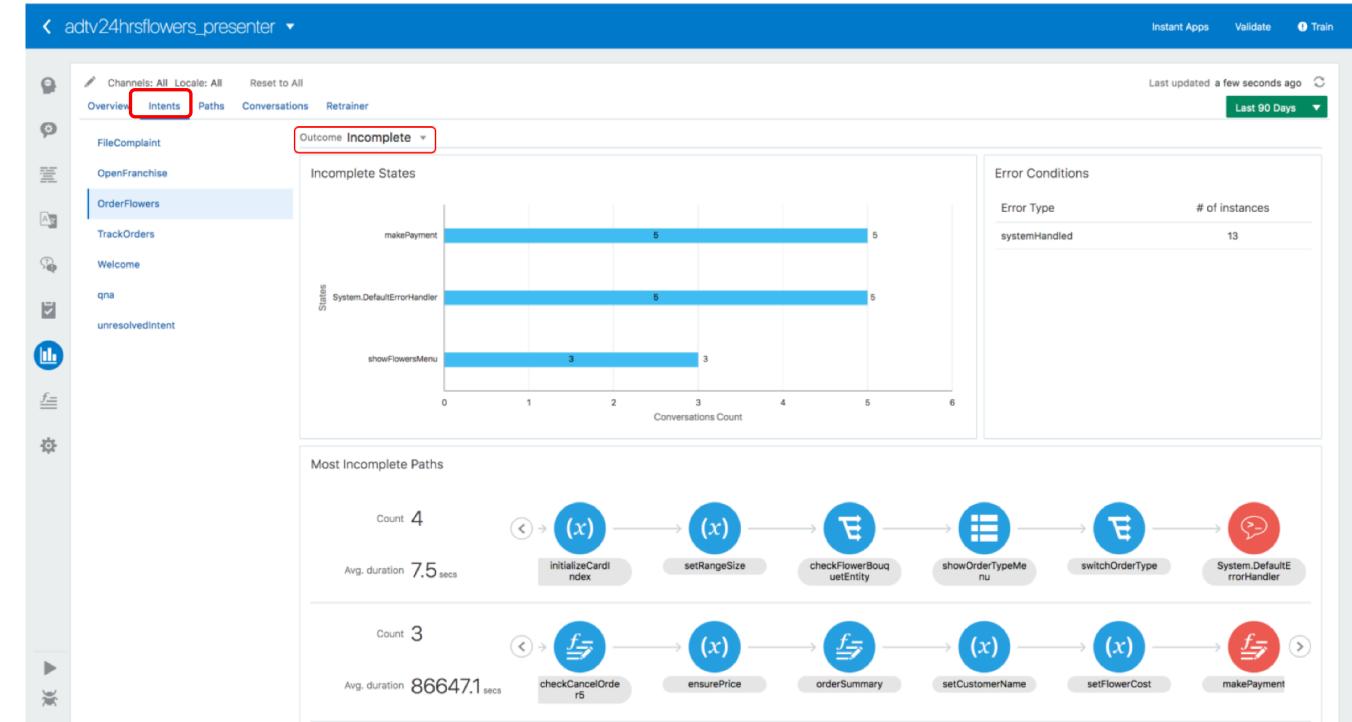
Count 15 Avg. duration 8.8 secs

setDiscount → (x) → enableAutoTranslation → detectLanguage → checkUserDetectedLanguage → getUserIntent → startFileComplaint

```
graph LR; setDiscount --> (x1); (x1) --> enableAutoTranslation; enableAutoTranslation --> detectLanguage; detectLanguage --> checkUserDetectedLanguage; checkUserDetectedLanguage --> getUserIntent; getUserIntent --> startFileComplaint;
```

# Incomplete paths – why didn't the conversation complete?

- For each intent, view the incomplete path
  - Incomplete is a timeout or error
- Understand at what state the conversation fails
  - For OrderFlowers intent
    - makePayment
      - Timeout?
    - switchOrderType
      - User error??



Channels: All Locale: All Reset to All

Last updated a few seconds ago Last 90 Days ▾

Overview **Intents** Paths Conversations Retrainer

FileComplaint

OpenFranchise

**OrderFlowers**

TrackOrders

Welcome

qna

unresolvedIntent

Outcome Incomplete ▾

Incomplete States

States	Conversations Count
makePayment	5
System.DefaultErrorHandler	5
showFlowersMenu	3

Error Conditions

Error Type	# of instances
systemHandled	13

Most Incomplete Paths

Count 4 Avg. duration 7.5 secs

```
graph LR; Start(( )) --> A((x)); A --> B((x)); B --> C(( )); C --> D(( )); D --> E(( )); E --> F(( )); F --> End(( ));
```

initializeCardIndex  
setRangeSize  
checkFlowerBouquetEntity  
showOrderTypeMenu  
switchOrderType  
System.DefaultErrorHandler

Count 3 Avg. duration 86647.1 secs

```
graph LR; Start(( )) --> A(( )); A --> B((x)); B --> C(( )); C --> D(( )); D --> E(( )); E --> F(( )); F --> End(( ));
```

checkCancelOrder5  
ensurePrice  
orderSummary  
setCustomerName  
setFlowerCost  
makePayment

# Root Cause - SwitchOrderType

adtv24hrsflowers\_presenter ▾

Instant Apps Validate Train

Last updated a few seconds ago

Last 90 Days

Channels: All Locale: All Reset to All

Overview Intents Paths Conversations Retrainer

Intent Outcome Sort By Errors

Intent Flowers Outcome Incomplete Sort By Latest Errors

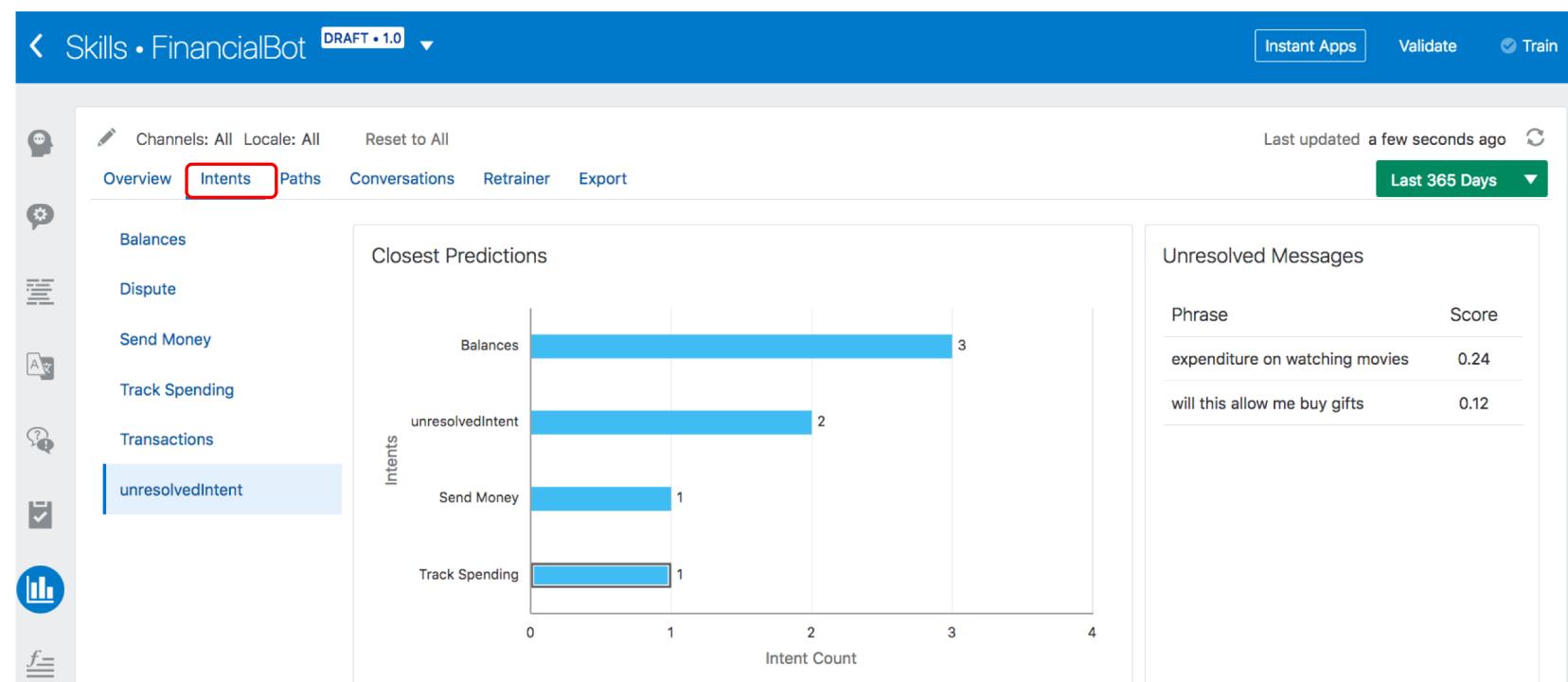
Selected state path setImageHost, setDiscount, enableAutoTranslation, detectLanguage, checkUserDetectedLanguage, getUserIntent, startOrderFlowers, initializeCardIndex, setRangeSize, checkFlowerBouquetEntity, showOrderTypeMenu, switchOrderType, System.DefaultErrorHandler Remove

Intent	Outcome	Time	User	Bot
OrderFlowers	Incomplete	a month ago	orderflowers orderType: Flowers	Do you want to send flowers or a bouquet? Oops I'm encountering a spot of trouble. Please try again I... <a href="#">View Conversation</a>
OrderFlowers	Incomplete	a month ago	orderflowers orderType: Bouquet	Do you want to send flowers or a bouquet? Oops I'm encountering a spot of trouble. Please try again I... <a href="#">View Conversation</a>
OrderFlowers	Incomplete	a month ago	orderflowers orderType: Flowers	Do you want to send flowers or a bouquet? Oops I'm encountering a spot of trouble. Please try again I... <a href="#">View Conversation</a>
OrderFlowers	Incomplete	a month ago	Orderflowers orderType: Bouquet	Do you want to send flowers or a bouquet? Oops I'm encountering a spot of trouble. Please try again I... <a href="#">View Conversation</a>

Select a conversation

# Unresolved intents

- What phrases were unresolved
  - Where the skill has not understood
- Shows the closest possible intent





Channels: All Locale: All

Reset to All

Last updated a few seconds ago

 Overview Intents

Paths

Conversations

Retrainer

Export

Last 365 Days



Balances

Dispute

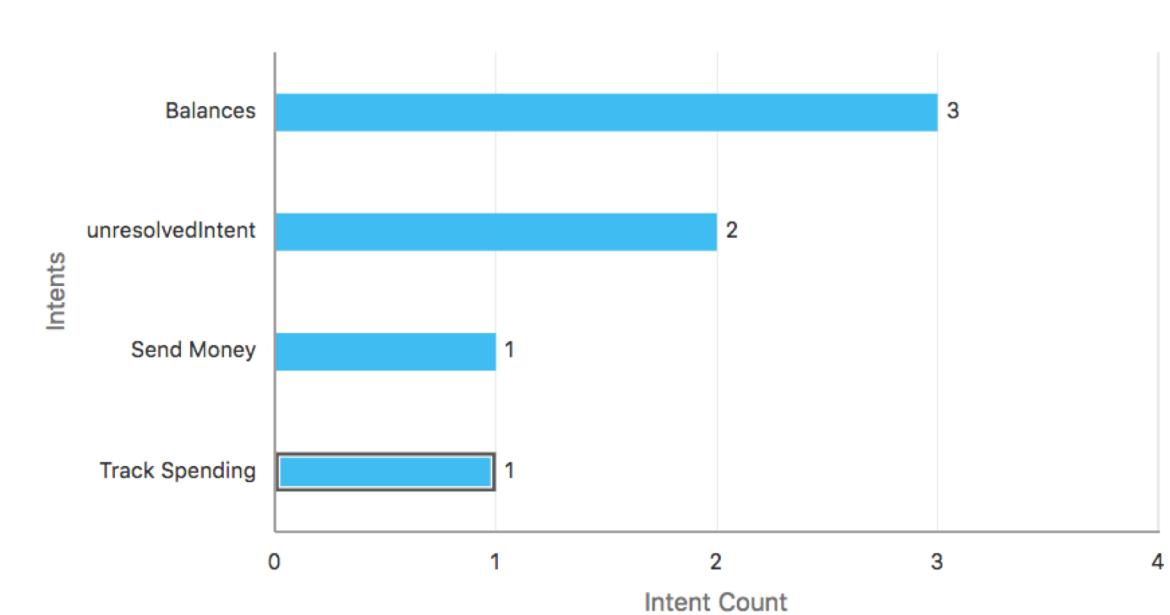
Send Money

Track Spending

Transactions

unresolvedIntent

## Closest Predictions



## Unresolved Messages

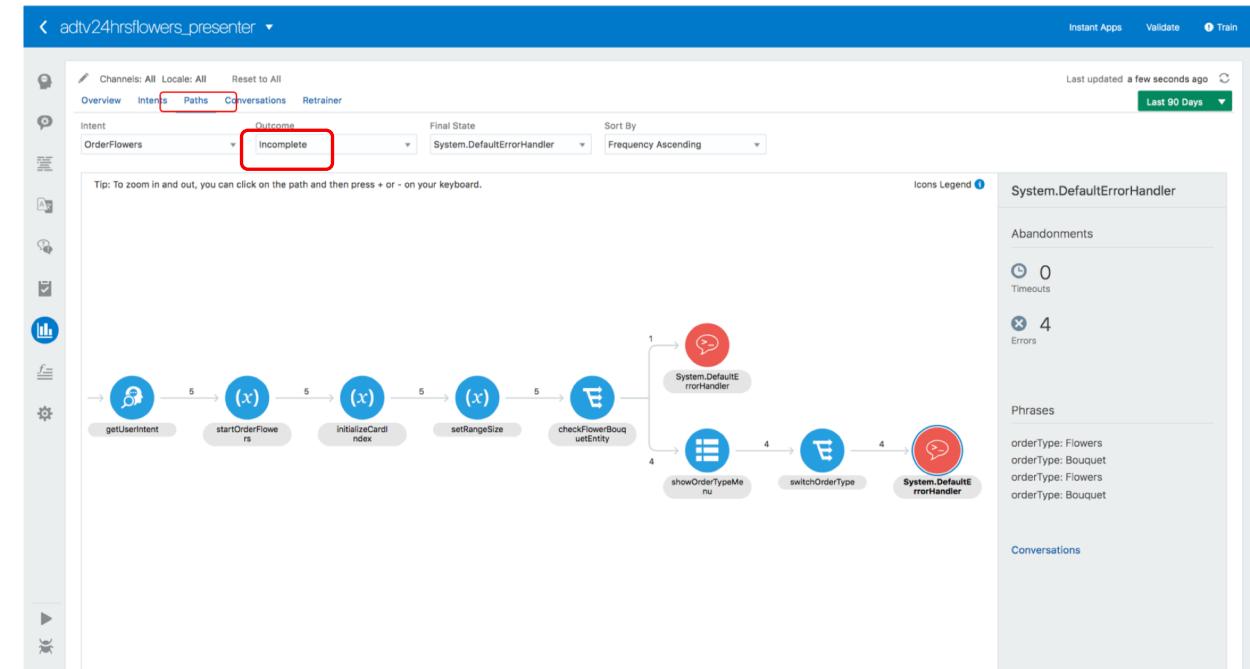
Phrase	Score
expenditure on watching movies	0.24
will this allow me buy gifts	0.12

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# Review paths – Why users are not able to complete

- Insights into conversation path based on
  - Intent
  - Outcome
  - Final state
- View all or focus on specific intents
  - View conversation information
    - Average states
    - Average time
    - Conversations





Channels: All Locale: All Reset to All



Overview Intents Paths Conversations Retrainer

Last updated a few seconds ago

Last 90 Days ▾

Intent

OrderFlowers

Outcome

Incomplete

Final State

System.DefaultErrorHandler

Sort By

Frequency Ascending

Tip: To zoom in and out, you can click on the path and then press + or - on your keyboard.

Icons Legend ⓘ

System.DefaultErrorHandler

## Abandonments

0

Timeouts

4

Errors

## Phrases

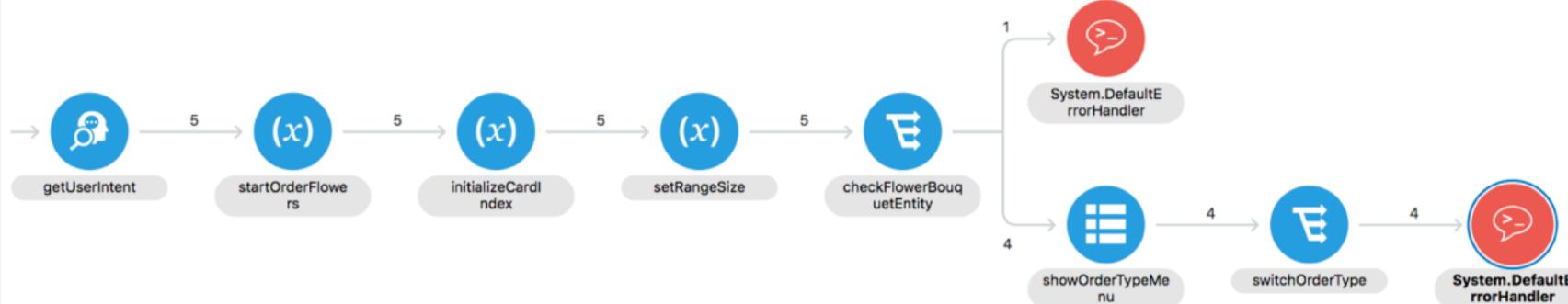
orderType: Flowers

orderType: Bouquet

orderType: Flowers

orderType: Bouquet

## Conversations



# Root Cause - SwitchOrderType

adtv24hrsflowers\_presenter ▾

Instant Apps Validate Train

Last updated a few seconds ago

Last 90 Days

Channels: All Locale: All Reset to All

Overview Intents Paths Conversations Retrainer

Intent Outcome Sort By Errors

Intent Flowers Outcome Incomplete Sort By Latest Errors

Selected state path setImageHost, setDiscount, enableAutoTranslation, detectLanguage, checkUserDetectedLanguage, getUserIntent, startOrderFlowers, initializeCardIndex, setRangeSize, checkFlowerBouquetEntity, showOrderTypeMenu, switchOrderType, System.DefaultErrorHandler Remove

Intent	Outcome	Time	User	Bot
OrderFlowers	Incomplete	a month ago	orderflowers orderType: Flowers	Do you want to send flowers or a bouquet? Oops I'm encountering a spot of trouble. Please try again I... <a href="#">View Conversation</a>
OrderFlowers	Incomplete	a month ago	orderflowers orderType: Bouquet	Do you want to send flowers or a bouquet? Oops I'm encountering a spot of trouble. Please try again I... <a href="#">View Conversation</a>
OrderFlowers	Incomplete	a month ago	orderflowers orderType: Flowers	Do you want to send flowers or a bouquet? Oops I'm encountering a spot of trouble. Please try again I... <a href="#">View Conversation</a>
OrderFlowers	Incomplete	a month ago	Orderflowers orderType: Bouquet	Do you want to send flowers or a bouquet? Oops I'm encountering a spot of trouble. Please try again I... <a href="#">View Conversation</a>

Select a conversation

Page 1 (0 of 0 items) 1

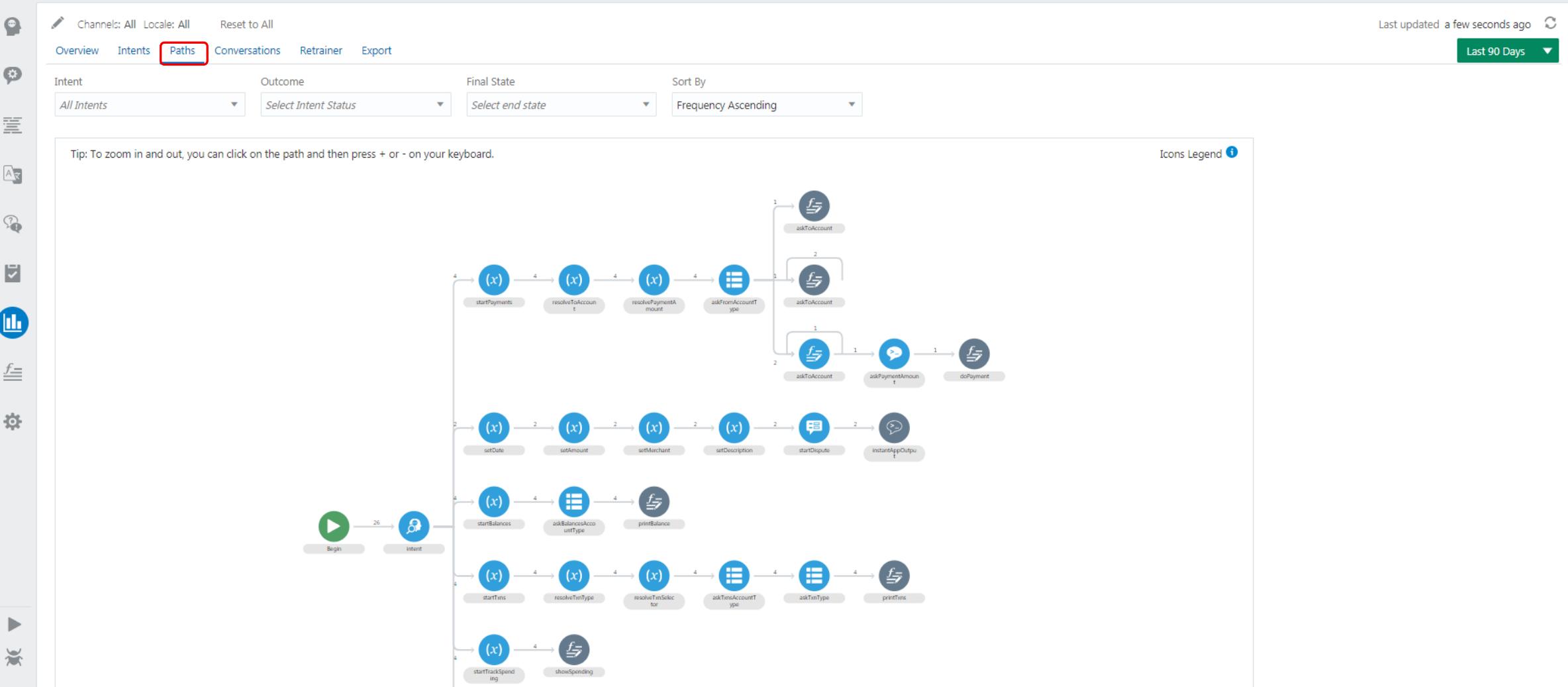
Skills • FinancialBot

DRAFT • 1.0

## Instant Apps

Validate

Train



# Conversations summary view

- Skill designer or business can query a conversation
  - Intent
  - Outcome
  - Date
  - Error condition
- Enables the business user or developer to locate conversation reported by an end user
  - Can view the conversation states
  - Can view the full conversation

The screenshot shows the 'Skills' section of the Oracle Conversations interface for a skill named 'FinancialBot'. The 'Conversations' tab is selected, highlighted with a red box. The table below lists four completed conversations for the 'Balances' intent. Each row includes the intent, outcome (Completed), time (2 days ago or 23 days ago), user information, and the skill's response message. A 'View Conversation' link is provided for each row. Below the table, a 'Details for selected conversation' section shows a sequence of four states: 'intent', 'startBalances', 'askBalancesAccounType', and 'printBalance', connected by arrows.

Intent	Outcome	Time	User	Skill
Balances	Completed	2 days ago	prey tell me my bank balance accountType: checking	For which account do you want your balance? The balance in your checking account (**-**-**) is \$**.** <a href="#">View Conversation</a>
Balances	Completed	23 days ago	What's my balance accountType: checking	For which account do you want your balance? The balance in your checking account (**-**-**) is \$**.** <a href="#">View Conversation</a>
Balances	Completed	23 days ago	What's my balance? accountType: credit card	For which account do you want your balance? The balance in your credit card account (**-**-**) is \$**.** Your remaining credit is \$**.** <a href="#">View Conversation</a>
Balances	Completed	23 days ago	what's my balance? accountType: credit card	For which account do you want your balance? The balance in your credit card account (**-**-**) is \$**.** Your remaining credit is \$**.** <a href="#">View Conversation</a>

Overview Intents Paths **Conversations** Retrainer Export

Last 30 Days ▾

Intent

Outcome

Sort By

Errors

Balances

Select Intent Status

Latest



Intent	Outcome	Time	User	Skill	
Balances	Completed	2 days ago	prey tell me my bank balance accountType: checking	For which account do you want your balance? The balance in your checking account (**-**-**) is \$**.**	<a href="#">View Conversation</a>
Balances	Completed	23 days ago	What's my balance accountType: checking	For which account do you want your balance? The balance in your checking account (**-**-**) is \$**.**	<a href="#">View Conversation</a>
Balances	Completed	23 days ago	What's my balance? accountType: credit card	For which account do you want your balance? The balance in your credit card account (**-**-**) is \$-**.** Your remaining credit is \$**.**	<a href="#">View Conversation</a>
Balances	Completed	23 days ago	what's my balance? accountType: credit card	For which account do you want your balance? The balance in your credit card account (**-**-**) is \$-**.** Your remaining credit is \$**.**	<a href="#">View Conversation</a>

Page 1 of 1 (1-4 of 4 items) | K &lt; 1 &gt; K

## Details for selected conversation



# Drilldown – individual messages

Screenshot of the Oracle Conversational AI platform interface showing the 'Conversations' tab for the 'FinancialBot' skill.

The interface includes:

- Header: Skills • FinancialBot, DRAFT • 1.0, Instant Apps, Validate, Train.
- Filter: Intent (Balances), Outcome (Select Intent Status), Sort By (Latest), Errors (off).
- Time Filter: Last 30 Days.
- Table Headers: Intent, Outcome, Time, User, Skill.
- Data Rows (Balances intent):
  - Completed, 2 days ago:
    - User: prey tell me my bank balance
    - User: accountType: checking
    - Skill: For which account do you want your balance?
    - Skill: The balance in your checking account (\*\*-\*\*) is \$\*\*.\*\* [View Conversation](#)
  - Completed, 23 days ago:
    - User: What's my balance
    - User: accountType: checking
    - Skill: For which account do you want your balance?
    - Skill: The balance in your checking account (\*\*-\*\*) is \$\*\*.\*\* [View Conversation](#)
  - Completed, 23 days ago:
    - User: What's my balance?
    - User: accountType: credit card
    - Skill: For which account do you want your balance?
    - Skill: The balance in your credit card account (\*\*-\*\*-\*\*) is \$\*\*.\*\* [View Conversation](#)
    - Skill: Your remaining credit is \$\*\*.\*\*
  - Completed, 23 days ago:
    - User: what's my balance?
    - User: accountType: credit card
    - Skill: For which account do you want your balance?
    - Skill: The balance in your credit card account (\*\*-\*\*-\*\*) is \$\*\*.\*\* [View Conversation](#)
    - Skill: Your remaining credit is \$\*\*.\*\*
- Details for selected conversation:
  - Intent flow: intent → startBalances → askBalancesAccountType → printBalance.
  - Message history:
    - User: prey tell me my bank balance
    - Bot: For which account do you want your balance?
    - User: accountType: checking
    - Bot: The balance in your checking account (\*\*-\*\*) is \$\*\*.\*\*

# Retrainer – moderator prepare the skill for future

- Retrainer provides a tool to query utterances and examine if they were resolved to the correct intent
  - Check for correct intent resolution
  - Check for unresolved intents
- Retrain from within the dashboard

The screenshot shows the Oracle Digital Assistant Retrainer interface for the 'FinancialBot' skill. The top navigation bar includes 'Skills • FinancialBot', 'DRAFT - 1.0', 'Instant Apps', 'Validate', and 'Train'. The main area has tabs for 'Overview', 'Intents', 'Paths', 'Conversations', 'Retrainer' (which is highlighted with a red box), and 'Export'. A search bar allows filtering by 'Intent' or 'Matches' (e.g., 'unresolvedIntent'). Below this is a table titled 'Intent Classification' with columns: Utterances, Result, Win Margin, and Intents Score. The table lists three entries:

Utterances	Result	Win Margin	Intents Score
expenditure on watching movies	unresolvedIntent	9.48	Track Spending Send Money Refund
Is this an HCM bot?	unresolvedIntent	3.91	Balances Track Spending
will this allow me buy gifts	unresolvedIntent	5.3	Track Spending Balances Transactions

On the right, a 'Select Intent' dropdown menu is open, showing options like 'Select Intent', 'Balances', 'Dispute', 'Send Money', 'Track Spending', and 'Transactions'. At the bottom right is a 'Add Example' button.

ORACLE® Digital Assistant

Skills • FinancialBot DRAFT • 1.0

Instant Apps Validate Train

Channel: All Locale: All Reset to All Last updated 2 minutes ago

Overview Intents Paths Conversations Retrainer Export Last 30 Days

Show me all utterances where  All  Any of the following are true

Intent Matches unresolvedIntent X

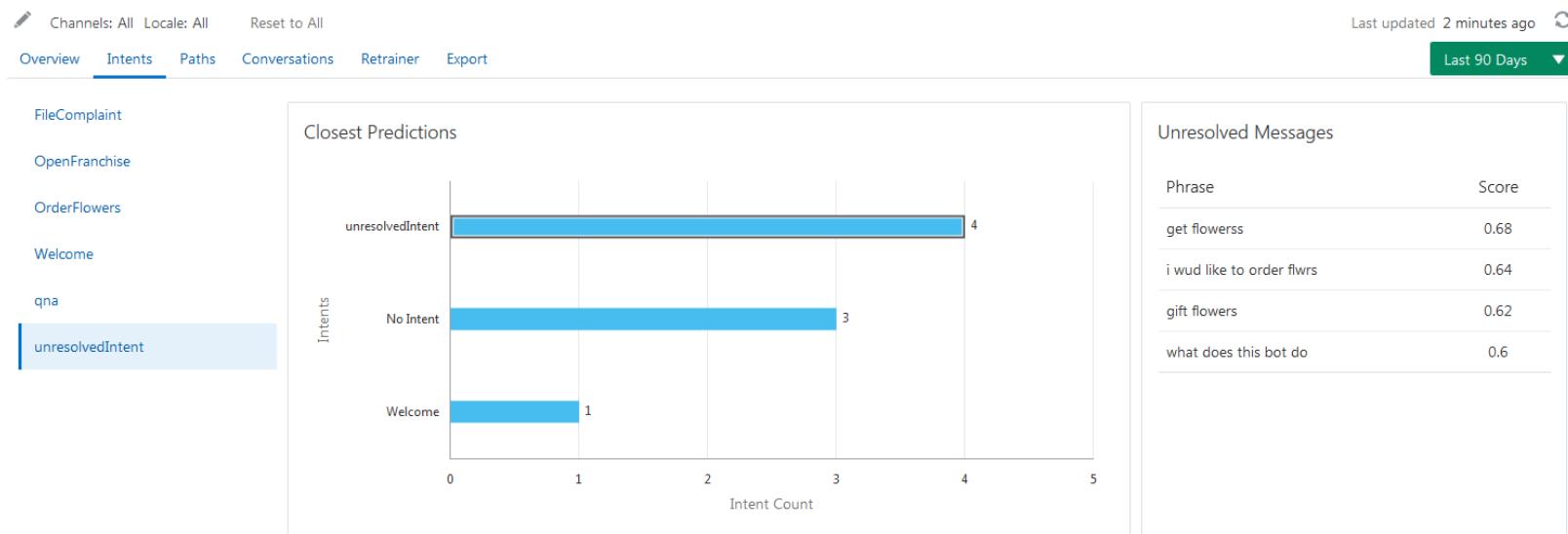
+ Criteria Search

Intent Classification

Utterances	Result	Win Margin	Intents Score	Add To
expenditure on watching movies	unresolvedIntent	9.48	<div style="width: 9.48%;">Track Spending</div>	Select Intent
Is this an HCM bot?	unresolvedIntent	3.91	<div style="width: 3.91%;">Balances</div>	Select Intent
will this allow me buy gifts	unresolvedIntent	5.3	<div style="width: 5.3%;">Send Money</div>	Select Intent

Page 2 of 2 (6-8 of 8 items) Add Example

# Some popular short forms or common typographical errors



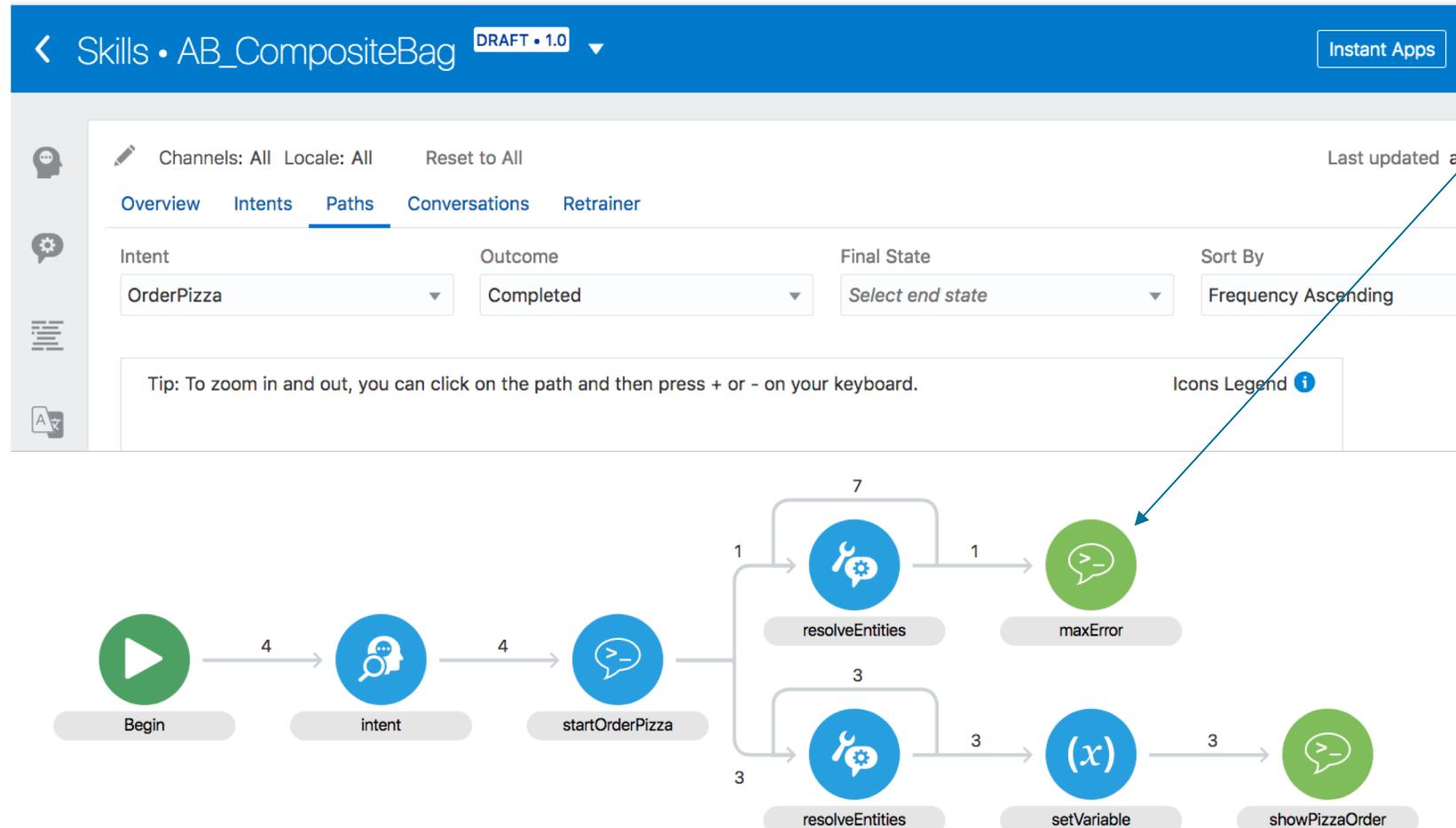
There are a couple of messages that catch your eye because they can help your skill fulfil its primary goal even if the customer input contains typos, slang, or unconventional

- shorthand: "get flowerss" (68%)
- "i wud like to order flwrs." (64%)

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# Drill down – find out error condition and cause



Conversations marked as complete but have not logically concluded with a positive scenario.

There seems to be a MaxError state that indicates the skill failed to continue.

The resolveEntities have probably asked user a bunch of questions and since it is probably not well designed user could not continue.

# Review conversation that causes the failure

The screenshot shows the Oracle Conversational AI platform interface. At the top, it displays 'Skills • AB\_CompositeBag' and 'DRAFT • 1.0'. On the right, there are buttons for 'Instant Apps', 'Validate', and 'Train' (with a checked checkbox). Below this, a message bar indicates 'Last updated a few seconds ago' and a dropdown menu set to 'Last 7 Days'. The left sidebar has icons for Channels, Locale, Overview, Intents, Paths, Conversations (selected), Retrainer, and a help icon. The main area shows a table of conversations. The table has columns for Intent, Outcome, Time, User, and Skill. A user message 'nopes' is highlighted with a blue arrow pointing to the 'User' column. The 'Skill' column shows a series of messages from the skill, including 'Please enter DeliveryDate', 'Ok you want some herbs! \*\*...', 'OK so no herbs Ok you want...', 'OK so no herbs Ok you want...', and 'OK lets connect you with so...'. A 'View Conversation' link is also visible next to the skill messages.

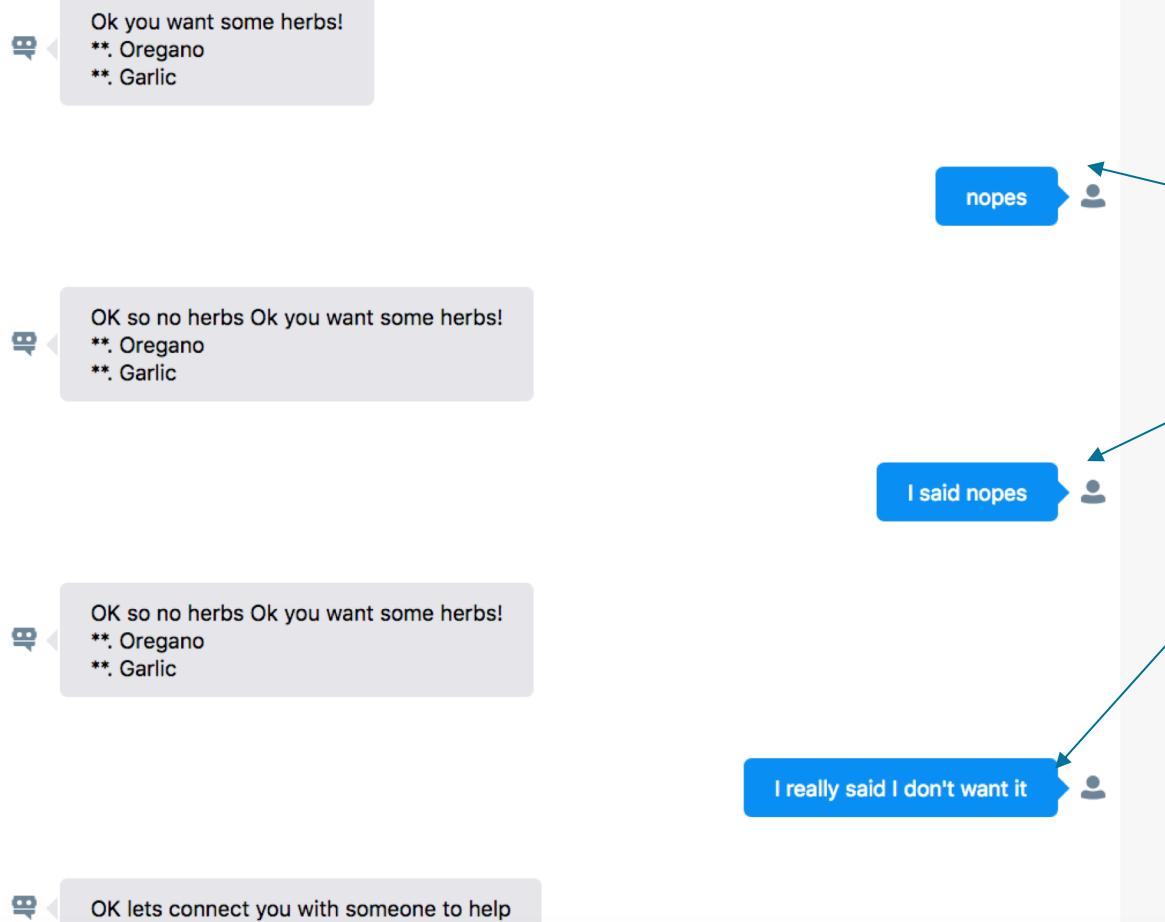
Intent	Outcome	Time	User	Skill
OrderPizza	Completed	5 minutes ago	god knows today nopes I said nopes I really said I don't want it	Please enter DeliveryDate Ok you want some herbs! **... OK so no herbs Ok you want... OK so no herbs Ok you want... OK lets connect you with so...

Note that the user indicated that they do not need any herbs as toppings but the skill kept insisting and then ultimately failed.

# Review conversation that causes the failure

View Conversation

Close

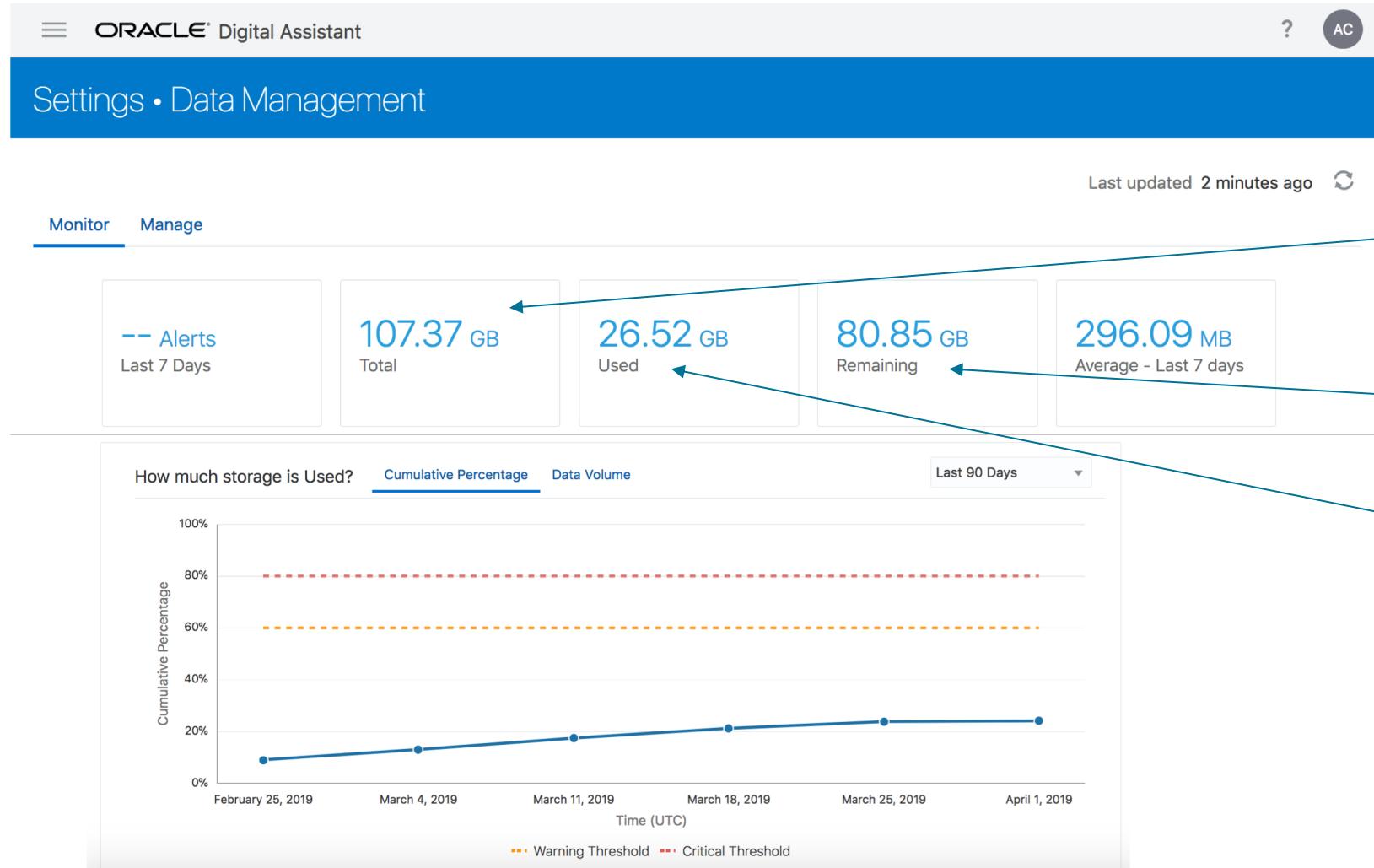


You can drilldown to the finest details and see how the skill responded to the user.

In this case if the user entered nopes, not interested, etc. the skill should skip this step and gracefully proceed to the next step.

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Monitor storage used as you enable insights and skills logging.

The total storage available.

Remaining

Used Storage

# Export & Purge Data

Settings • Data Management

Monitor Manage

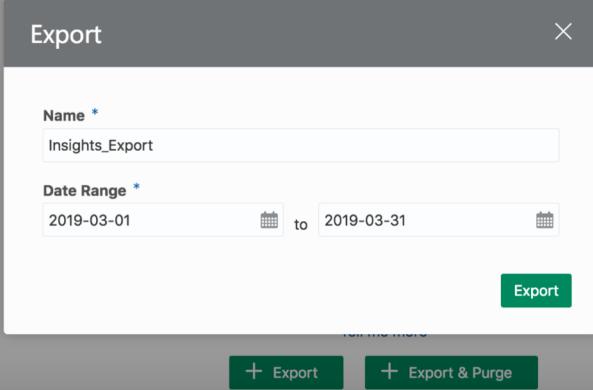
**Export**

Name \*  
Insights\_Export

Date Range \*  
2019-03-01 to 2019-03-31

Export

+ Export + Export & Purge



You can export the insights data by giving a date range.

Settings • Data Management

Last updated a few seconds ago

Monitor Manage

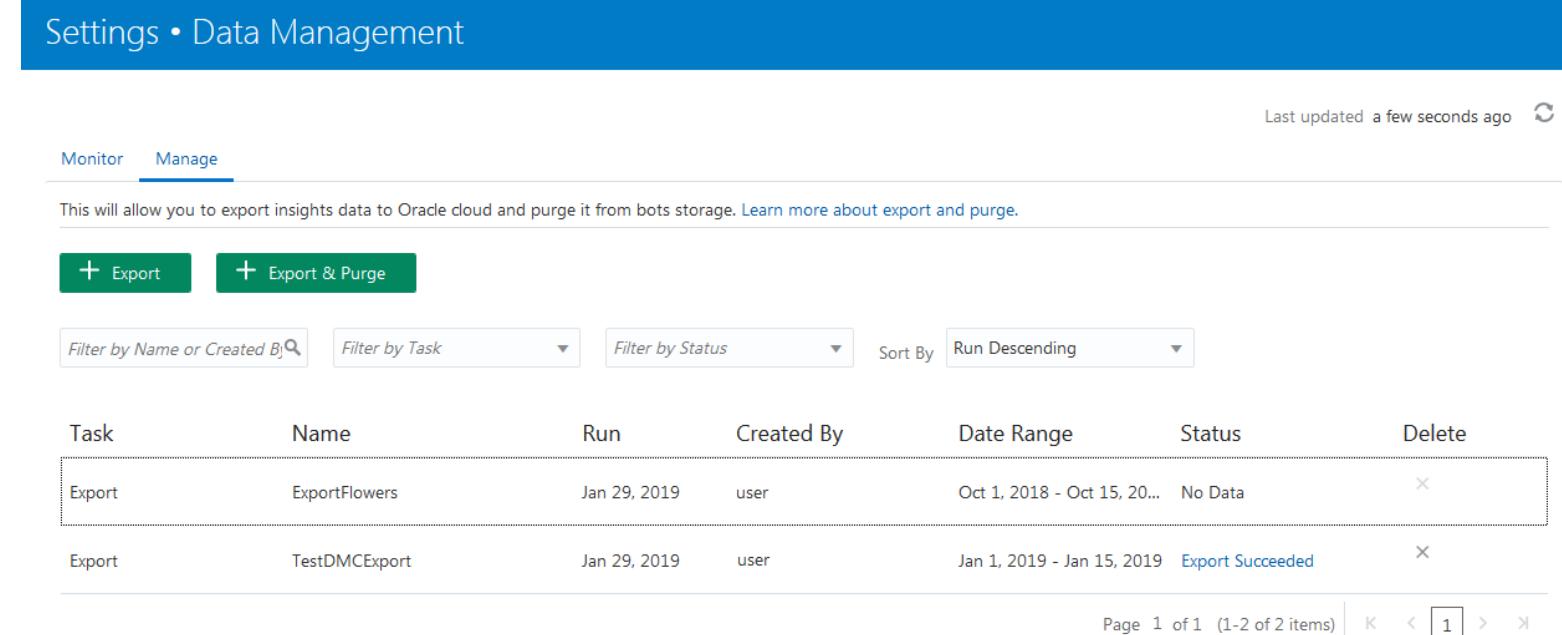
This will allow you to export insights data to Oracle cloud and purge it from bots storage. [Learn more about export and purge.](#)

+ Export + Export & Purge

Filter by Name or Created By  Filter by Task  Filter by Status  Sort By  Run Descending

Task	Name	Run	Created By	Date Range	Status	Delete
Export	ExportFlowers	Jan 29, 2019	user	Oct 1, 2018 - Oct 15, 20...	No Data	X
Export	TestDMCExport	Jan 29, 2019	user	Jan 1, 2019 - Jan 15, 2019	Export Succeeded	X

Page 1 of 1 (1-2 of 2 items) | K < 1 > K



# REST API for BOT Insights Export

- <https://docs.oracle.com/en/cloud/paas/digital-assistant/rest-api/rest-endpoints.html>

The screenshot shows a web browser displaying the Oracle Digital Assistant REST API documentation. The URL in the address bar is <https://docs.oracle.com/en/cloud/paas/digital-assistant/rest-api/rest-endpoints.html>. The page title is "REST API for Oracle Digital Assistant". On the left, there is a sidebar with icons for Home, Cloud, Platform as a Service (PaaS), and Digital Assistant. Below these are sections for "Introduction" (About the REST APIs, All REST Endpoints - highlighted in blue), "Get Started" (Quick Start, Send Requests, Authenticate, Test, Use cURL, Status Codes, Use Cases), and "Help" (Search, Print, Download, Share). The main content area is titled "All REST Endpoints" and includes sorting options (Task, Path, Method, Group by API). A section titled "Insights" describes the API for managing export tasks. It includes a "Delete Export Task" button with "Method: DELETE" and a "Path: /management-api/v1/bots/{botId}/insightExports/{exportId}" field.

The REST API for BOT Insights enables developers to export data using a REST API

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