

# AMELIA V3

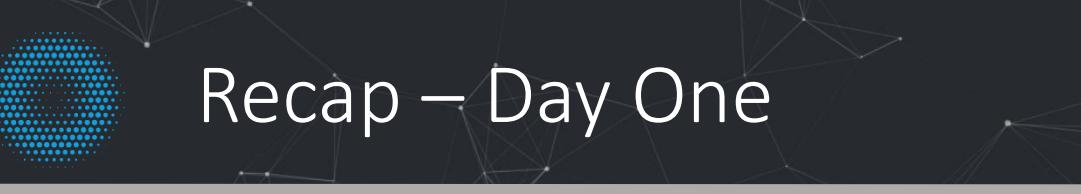
Day Two



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Presented by  
IPsoft Global Training and Development



# Recap – Day One



- Who is Amelia V3?
- Amelia Role and Skill Selection
- Logging into Amelia V3
- Amelia Trainer: Intents
- Intents: Modeling Process, Algorithms, Statistics
- Process Memory: Business Process Networks (BPNs)
- Say and Ask Tasks

# Agenda – Day Two

- Service Prefix - response:
- Putting It Together: Connecting Intents and BPNs
- Additional BPN Functionality and Task Types
- Present Task
- Request Task
- Amelia Trainer: Entities
- Putting It Together: Entities and ask for the slot
- Service Prefixes - slot: and ctx:
- Datum Types
- Service Prefix – bpn:
- BPN Version Control
- Amelia Trainer: Additional Tools
- Q&A



# Learning Objectives

By the end of this course, you will be able to:

Train Amelia to conduct a business process and answer organization-specific questions using:

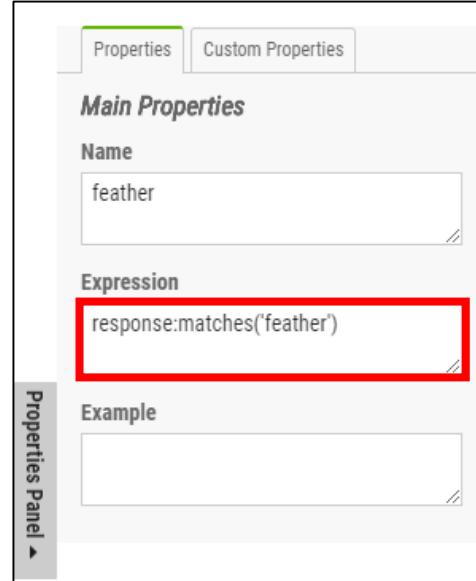
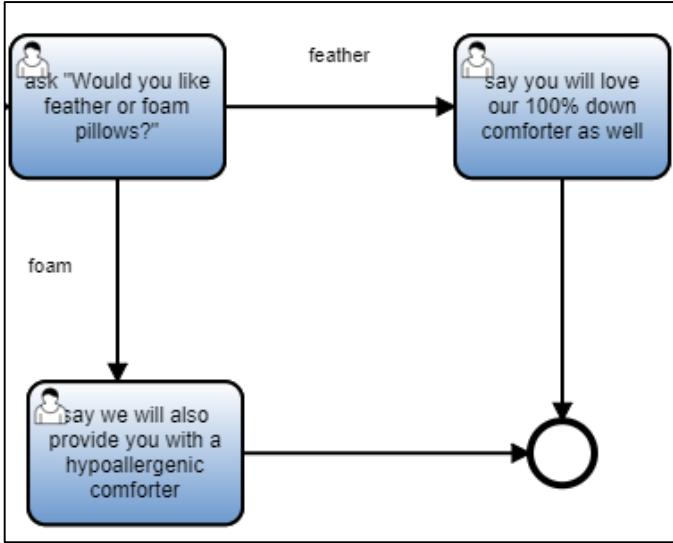
- End user intent recognition (intents)
- Customer answer capture (entities)
- Process design (BPNs)
- Frequently Asked Questions (intent FAQs)
- Workflow decision-making based on end user responses (prefixes)
- Integration with API (integration framework)
- Custom UI elements such as widgets and chat notes (custom UI/script tasks)

# Service Prefix - response:

# response: Prefix

- **response:** user-response-related navigation
  - Obtains last utterance provided by user from ask task
  - Validates against a given value(s)

Base Syntax with matches(): response:matches(String)



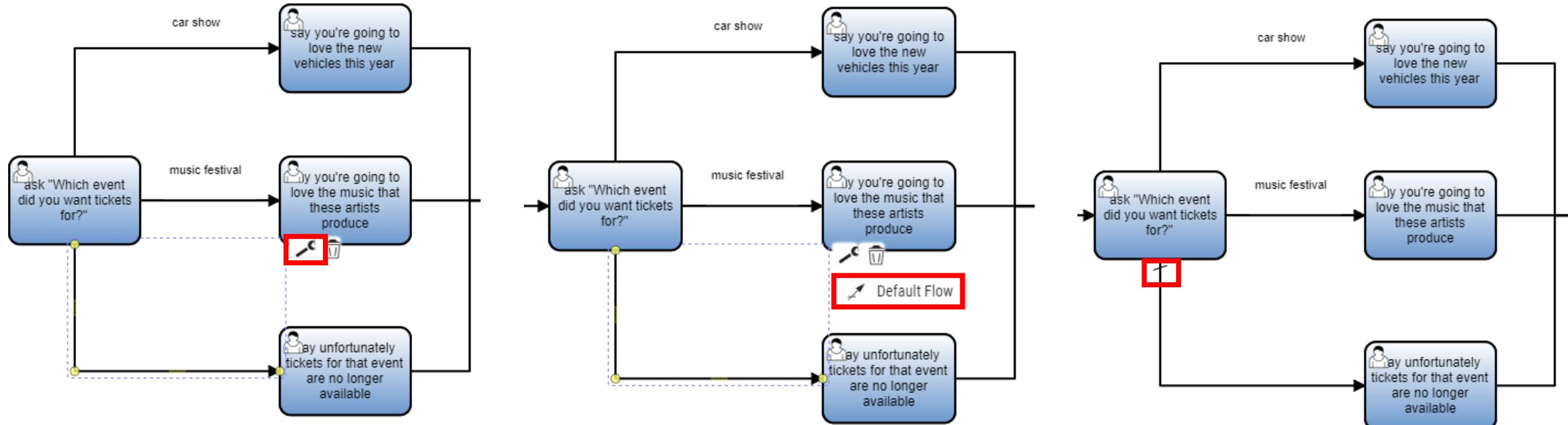
## Variations

- response:matches('(?i)') -> case insensitive
- response:matches('breakfast|lunch|dinner') -> or
- response:matches('.\*(?i)(breakfast|lunch|dinner).\*') -> combination
- response:matches('[0-1]{1}[0-9]{1}/[0-3]{1}[0-9]{1}/2018')
- response =~ '[0-1]{1}[0-9]{1}/[0-3]{1}[0-9]{1}/2018' -> JEXL

## Comparison operators:

- response>
- response>=
- response<
- response<=
- response==
- response!=

# Default Flow



# response: Prefix Methods

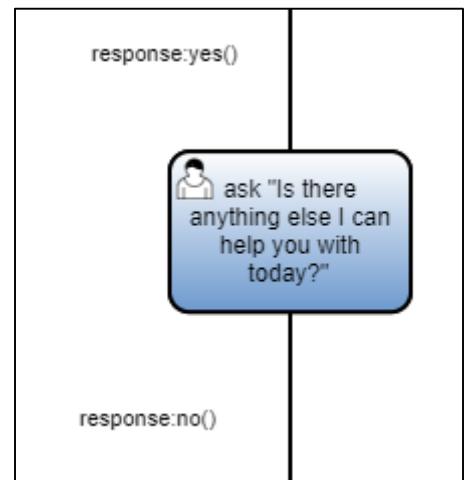
## Response: methods – Returns Boolean

- contains(String)
- containsAny(String[])
- containsNone(String[])
- endsWith(String)
- equal(Object)
- hasDigits()
- hasLetters()
- hasLettersAndDigits()
- hasLettersOrDigits()
- hasSpace()
- isAlphaNumeric()
- idk()
- in(String[])
- isDecimal()
- isInteger()
- isNumber()
- like(String) → ? single or % multiple chars
- matches(String)
- no()
- startsWith(String)
- yes()
- value() -> returns String

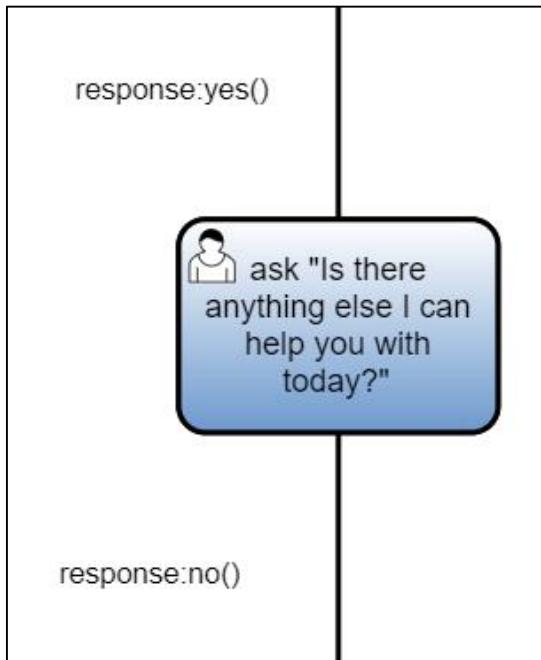
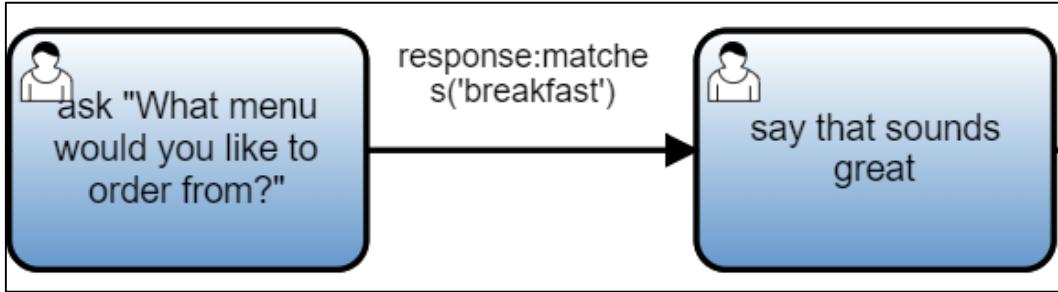
### Syntax:

Methods with parameter -> response:contains(String)

Methods without parameters -> response:hasDigits()



# Activity



**response:**

- Create at least two forks coming from two Ask tasks.
- Use the response: service prefix to determine the direction of the workflow.

Timing: 10 minutes

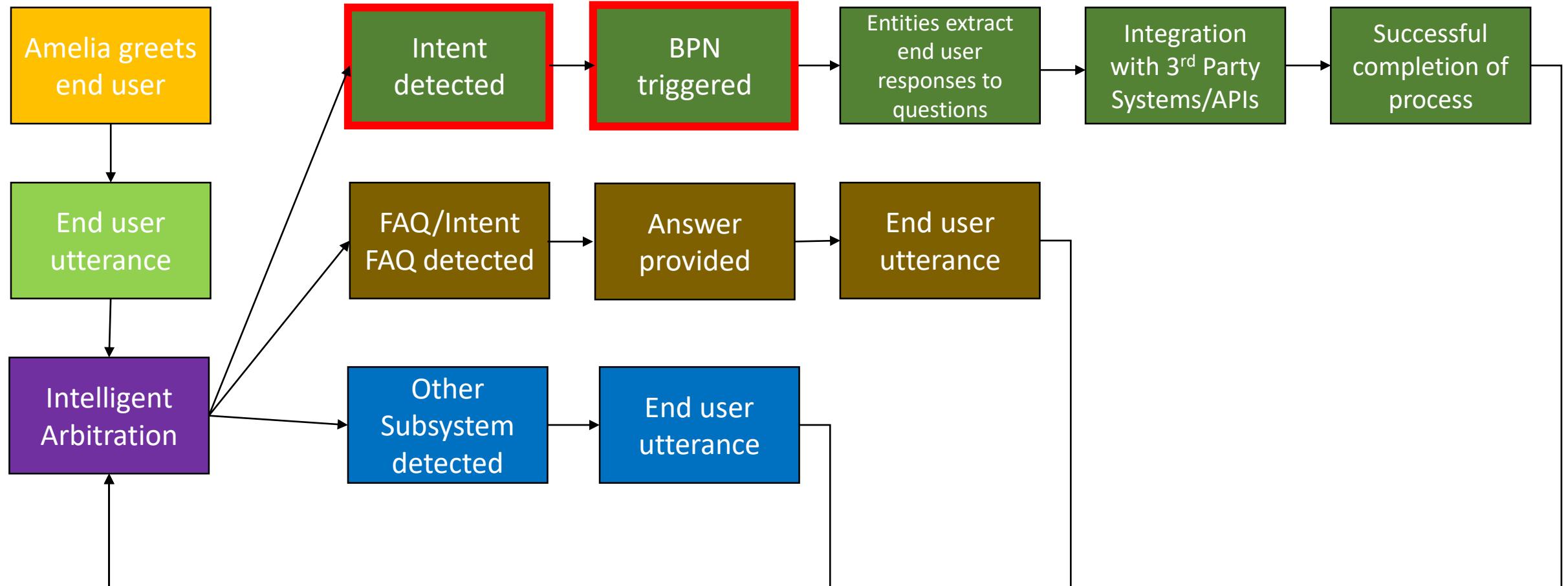
Validation: Mind View Testing

# Putting It Together: Connecting Intents and BPNs

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# General Amelia Conversation Flow



# Connecting Intents to BPNs

The screenshot shows the 'Intents' page in the Amelia Trainer interface. At the top, there's a navigation bar with tabs: 'Intents' (which is active and highlighted in blue), 'Entities', 'Predict', 'Annotate', and 'Dashboard'. Below the navigation is a search bar with the placeholder 'Name, BPN, or FAQ'. The main area displays a table of intents:

Intent Name	Description	Actions
reserveARoom	Used to book a hotel room	Bulk Actions <input type="checkbox"/> Select All

On the right side of the table are three buttons: 'Add Intents', 'Train', and 'Predict'. A large circle with the number '1' is overlaid on the 'Add Intents' button.

## Amelia Trainer -> Intents

1. Click on intent name/pencil
2. For “When the intent is identified...”, choose Execute Process
3. For “Execute the process...”, choose the appropriate BPN

This screenshot shows the configuration for the 'reserveARoom' intent. The intent name is displayed at the top left, followed by its description: 'Used to book a hotel room'. On the right are four buttons: 'Save changes', 'Revert changes', 'Disable intent', and 'Delete' (which is highlighted with a red border).

The configuration section starts with the heading 'When intent is identified...'. A dropdown menu is open, showing the option 'Execute Process' (also highlighted with a red border). A large circle with the number '2' is overlaid on this dropdown. To the right of the dropdown is the text 'Execute the process...' and a dropdown menu containing the value 'reserveARoomComplete', with a large circle containing the number '3' overlaid on it. A red horizontal line connects the 'Execute Process' dropdown to the 'reserveARoomComplete' dropdown.

Below this, there's a section for 'When resuming the process, Amelia asks...'. It contains the text 'Would you like to continue with your hotel reservation?' and 'The user wants to... e.g. "reset a password"'.

# Deploy Model

4. Go to Amelia Trainer->Dashboard
5. Deploy the correct intent model

Dashboard 4

Intents Entities Predict Annotate Dashboard

Model Name  Search X

Model Name	Revision	Created By	Utterances	Algorithm	Actions	Logs	Stats	Status
reserveARoomBaseCase	v.2.0	Brian Kuchta	224	PAC	<span style="border: 1px solid #ccc; border-radius: 50%; padding: 2px 5px; border: 1px solid #ccc; border-radius: 50%; width: 15px; height: 15px; display: inline-block;">5</span>			<span style="color: green;">● deployed</span>
reserveARoomPABase	v.3.0	Brian Kuchta	224	PAC				<span style="color: orange;">● ready</span>



# Activity

## reserveARoom

Used to book a hotel room

When intent is identified...

Execute Process

When resuming the process, Amelia asks...

Would you like to continue with your hotel reservation?

The user wants to...

e.g. "reset a password"

Save changes  Revert changes  Disable intent  Delete

Execute the process...

reserveARoomComplete

Timing: 10 minutes

Validation: Mind View Testing

## Intents and BPNs

- Connect your intent to your BPN.
- Be sure your intent model is deployed in Amelia Trainer-> Dashboard.
- In Mind View, test various utterances to launch your BPN.
  - Do NOT use run the workflow.
- Notice what happens when your Intent is not triggered and your BPN does not launch.

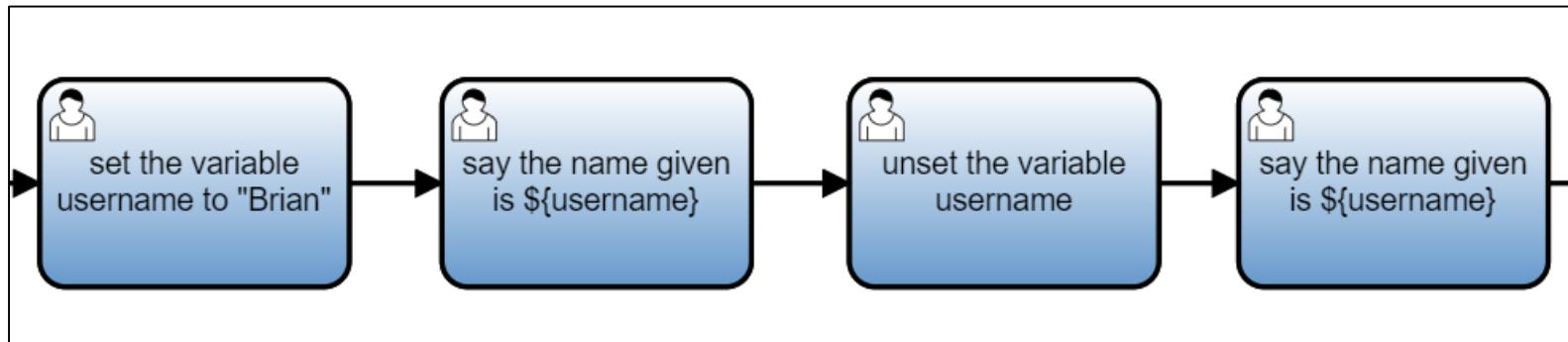
## Additional BPN Functionality

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# Set/Unset the Variable Task – Process Scope

- set the variable <variableName> to <variableValue>
- set the variable username to “John”
- set the variable number to 85
- unset the variable -> removes the entire variable



run the workflow setUnsetBeginning

10:09:22 PM

The name given is Brian.

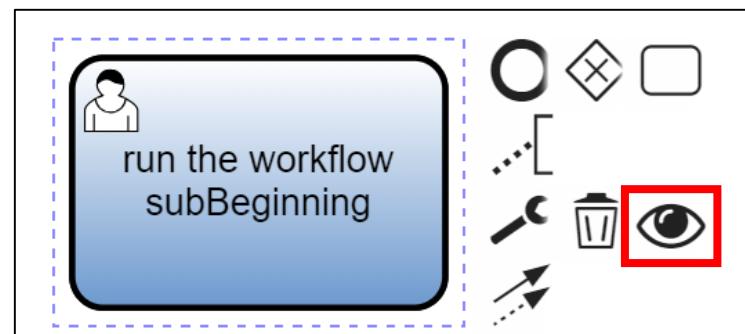
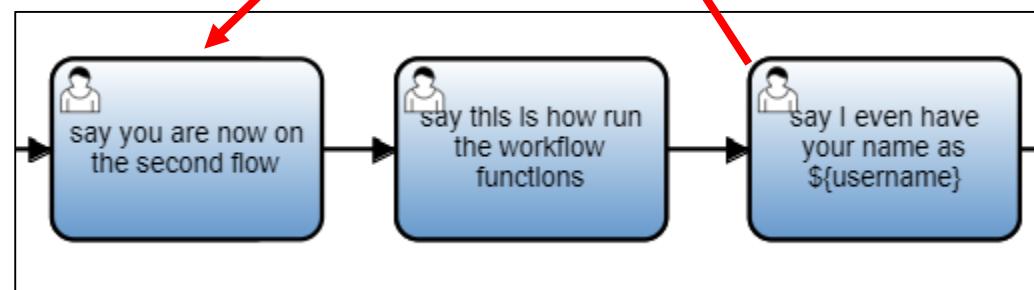
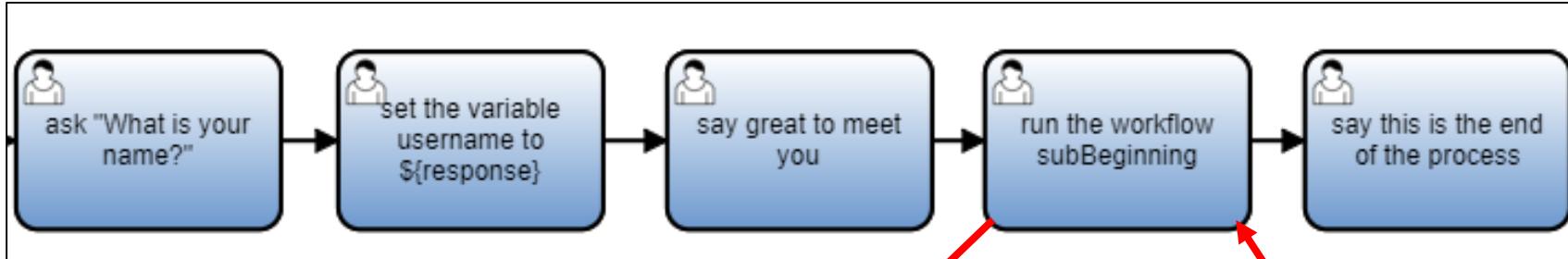
Amelia | 10:09:23 PM

Please hold a moment while I contact a colleague to assist you further.

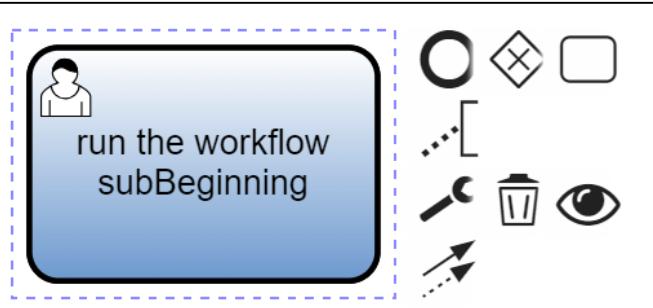
Amelia | 10:09:23 PM

# Run the Workflow Task

run the workflow `processName`



# Run the Workflow – Variable Propagation Property



Properties    Custom Properties

**Main Properties**

Name  
run the workflow  
runTheWorkflowExecutionVarSub

Variable Propagation  
Bidirectional

Type of variable propagation to and from the child process.

Outgoing variables +  
Incoming variables +

Properties    Custom Properties

**Main Properties**

Name  
run the workflow  
runTheWorkflowExecutionVarSub

Variable Propagation  
Bidirectional

Bidirectional  
Push only  
Pull only  
None

Controls propagation of process scope variables

Properties    Custom Properties

**Main Properties**

Name  
run the workflow  
runTheWorkflowExecutionVarSubSpeci

Variable Propagation  
Bidirectional

Type of variable propagation to and from the child process.

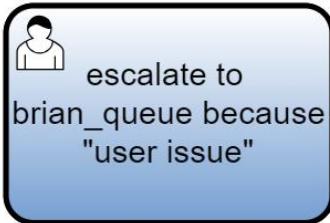
Outgoing variables +  
username

Incoming variables +

If no process scope variable is designated for outgoing/incoming variables, all process scope variables are passed

# Escalate Because, Escalate To, Escalate To...Because Tasks

- Sends conversation to live agent in Conversations view
- Provides reason for escalation
- Can designate specific queue to where escalation is sent
- No further tasks should come after it in that flow



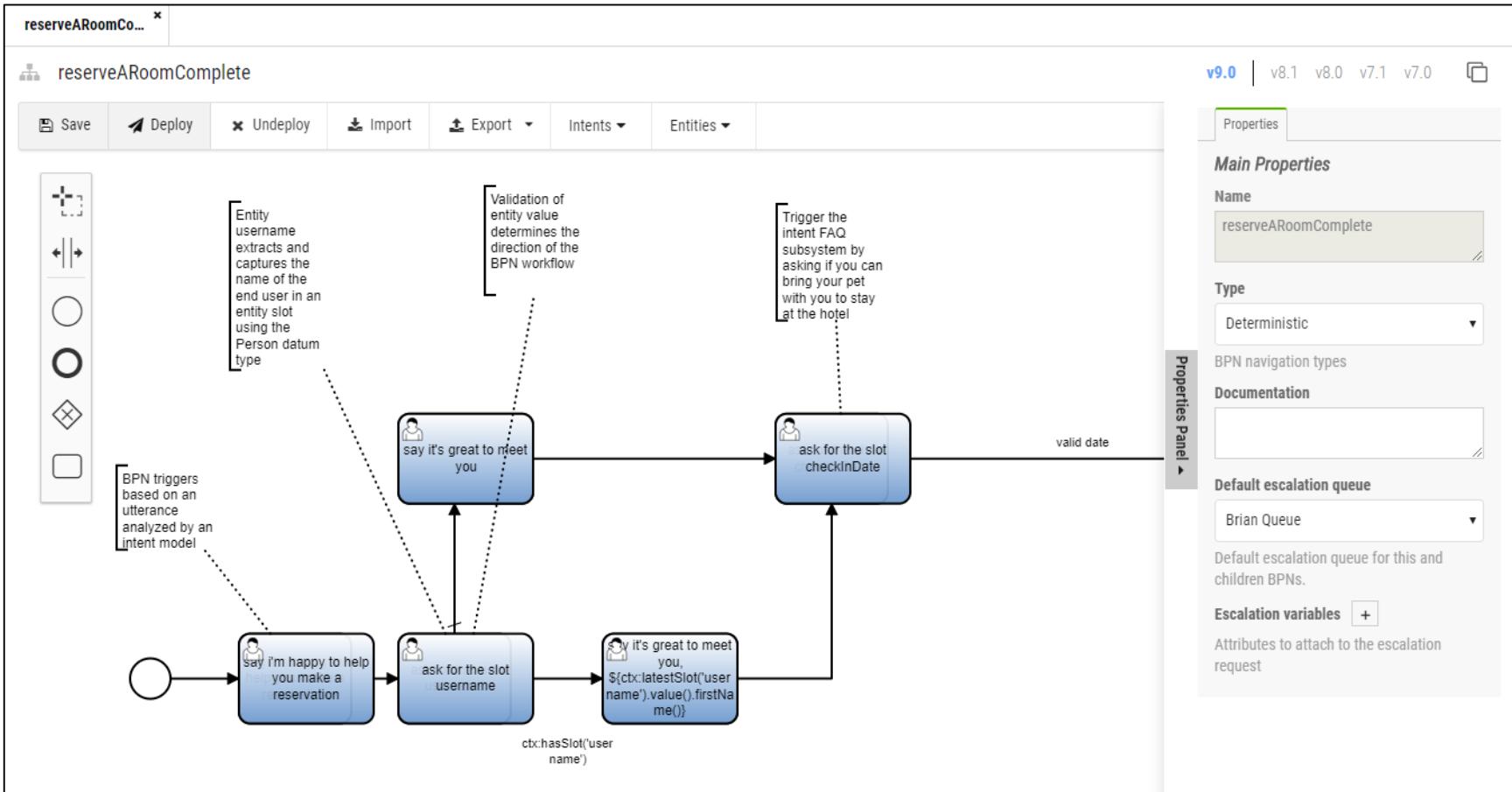
The screenshot shows the "Active Conversations" interface. At the top, there are navigation tabs: "Active Conversations", "Domains", "Queues", "Agents", "Auto-Refresh", and "My Queues". Below the tabs, there are two main sections: "Queues Summary" and "Conversations Summary". The "Conversations Summary" section is expanded, showing a table of conversations. The columns are: ID, Domain, User, Agent, Escalation Status, Escalation Queue, Escalation Reason, P-SLA, Created, Queued, Answer Speed, Handle Time, and Actions. A single conversation row is listed:

ID	Domain	User	Agent	Escalation Status	Escalation Queue	Escalation Reason	P-SLA	Created	Queued	Answer Speed	Handle Time	Actions
LEVIURLTYAIAA-1	Brian	Brian Kuchta	Amelia	QUEUED	Brian Queue	user issue	7/17/2018, 5:34:01 PM	7/17/2018, 5:32:56 PM	7/17/2018, 5:33:01 PM			<span>Comment</span> <span>View</span> <span>Move</span> <span>Equal</span>

At the bottom of the table, it says "1 Conversations, Page 1 of 1".

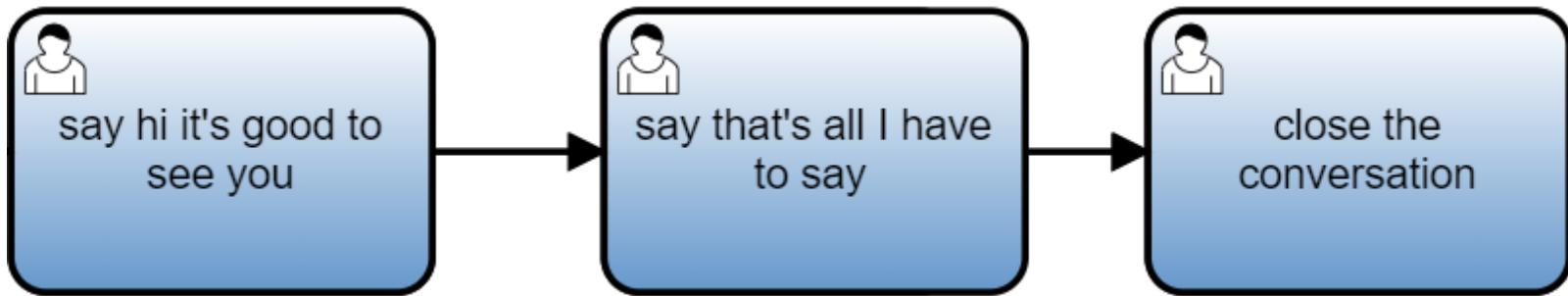
# Setting the Default Escalation Queue – BPN Level

If an escalation occurs during a BPN (but not using an escalate to task), escalates to the BPN default escalation queue

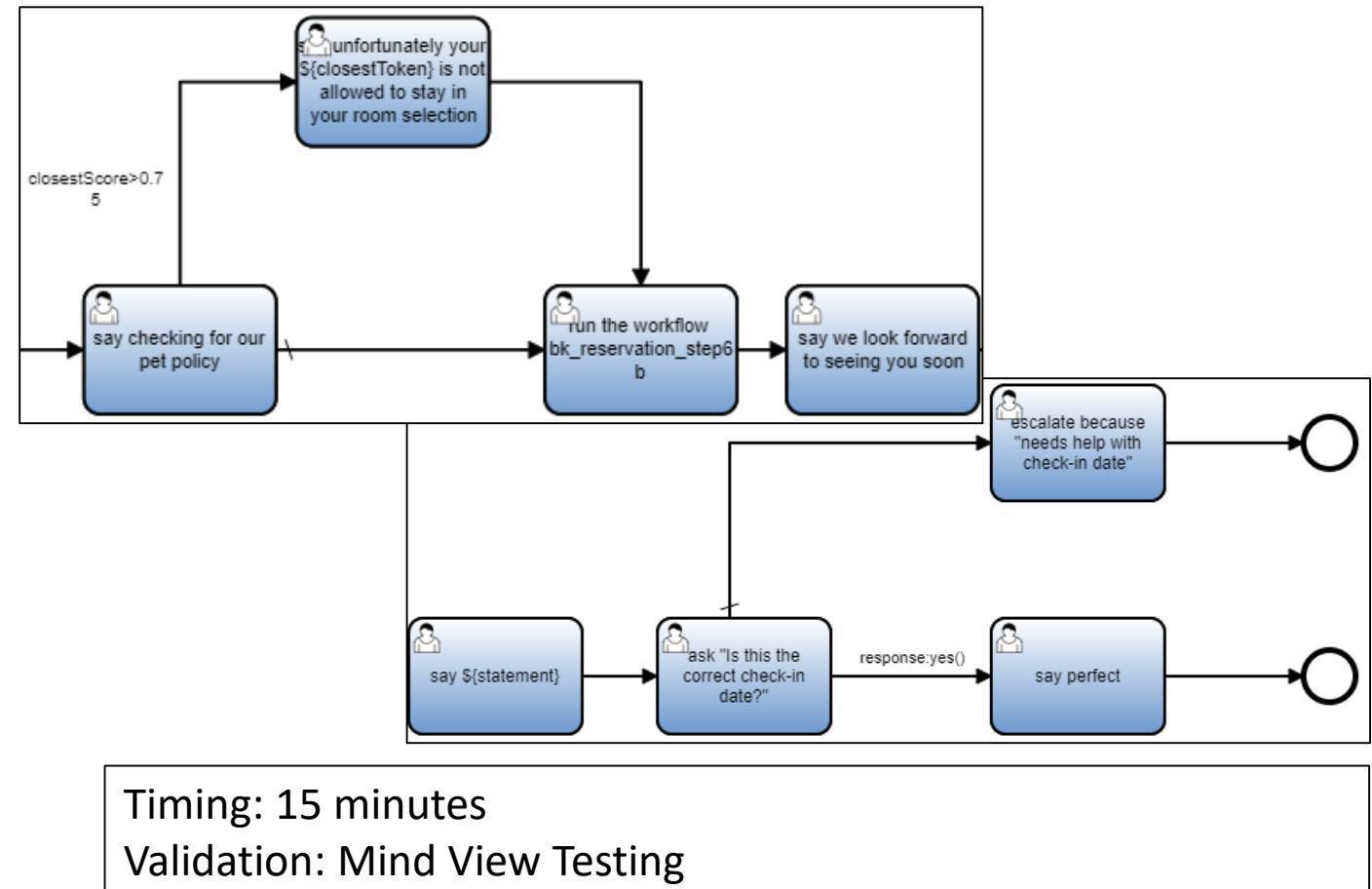


# Close the Conversation

- Closes the chat
- No further tasks should come after it in that flow



# Activity



# BPN Tasks

- Create a second BPN.
  - Use a modular approach by calling this “sub-BPN” using the run the workflow command.
  - Add an escalate to... because task somewhere in one of your flows.
  - Add a close the conversation somewhere in one of your flow.
  - Test in Mind view using your Intent.
    - Do NOT use run the workflow.

# Present Task

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# Content Manager – Buckets

- Where files to be presented to end user are stored by admin
- Where files obtained from end user are stored after end user upload

1. Click Process Memory-> Content Management
2. If you have access to multiple domains, select appropriate domain at the top
3. Click create -> Name your bucket

1. Click Process Memory-> Content Management

2. If you have access to multiple domains, select appropriate domain at the top

3. Click create -> Name your bucket

**Buckets**

Home **3**

+ Create    × Delete    ⌂ Refresh

Bucket name

hotel

miscellaneous

movies

roomservice

**i Bucket name error**

- The bucket name can be between 3 and 63 characters long, and can contain only lower-case characters, numbers, periods, and dashes.
- Each label in the bucket name must start with a lowercase letter or number.
- The bucket name cannot contain underscores, end with a dash, have consecutive periods, or use dashes adjacent to periods.
- The bucket name cannot be formatted as an IP address (198.15.200.11)

OK

# Buckets – Adding Resources

1. Double click on bucket name
2. Upload – upload files of supported types
  - Three dot button allows for rename or update of resource

The screenshot shows the 'Buckets' interface. On the left, there's a sidebar with a 'Bucket name' section containing a list of buckets: 'hotel' (selected and highlighted with a red box), 'miscellaneous', 'movies', and 'roomservice'. Below this are buttons for '+ Create', 'Delete', and 'Refresh'. The main area is titled 'Resources' and shows the contents of the 'hotel' bucket. It includes an 'Upload' button, a 'Create Document' button, and a 'Refresh' button. A search bar is at the top right. The list of files includes 'double.jpg' (Content type: jpeg), 'pool.jpg' (Content type: jpeg), and 'single.jpg' (Content type: jpeg). To the right of each file name is a three-dot menu icon. A large red box highlights the 'double.jpg' file, and a circle with the number '2' highlights the three-dot menu icon next to it.

## Supported types:

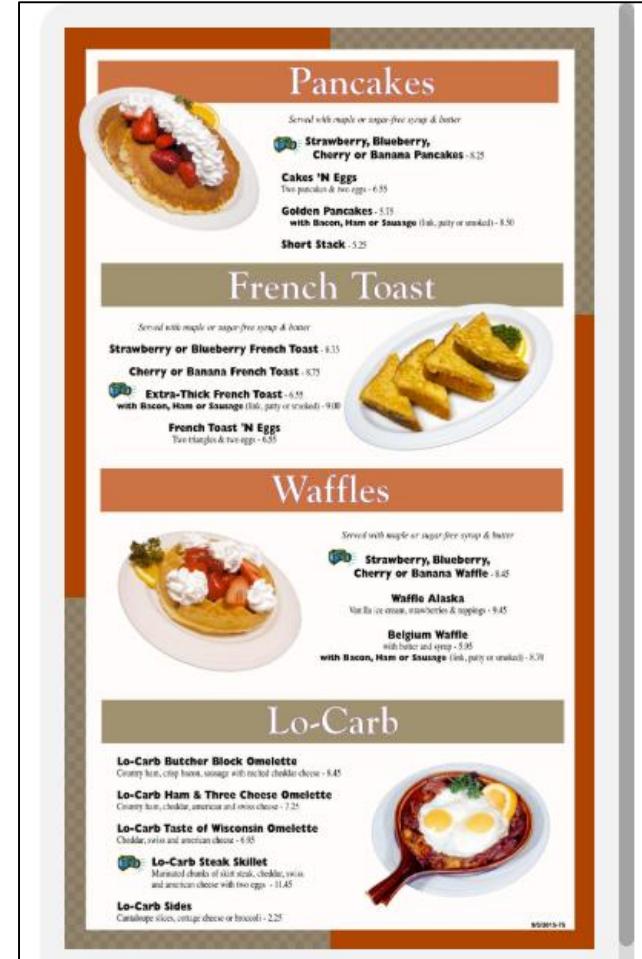
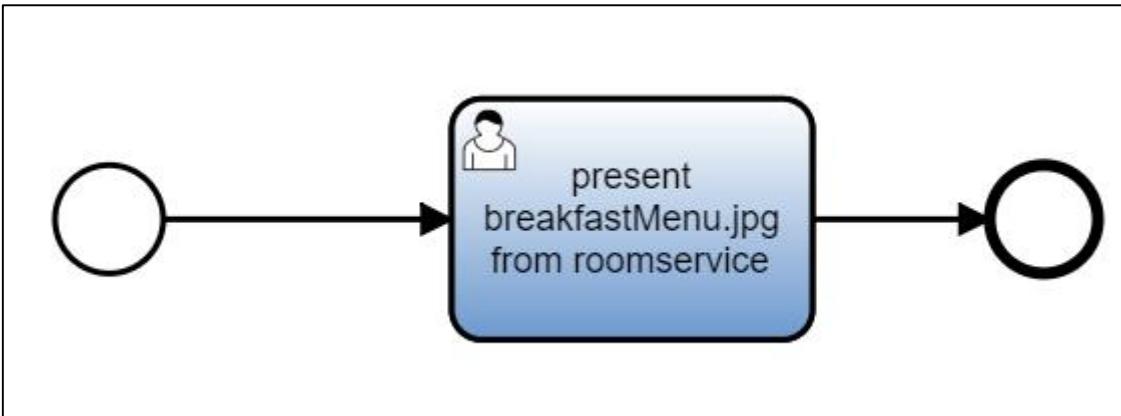
- binary - any file extension
- document - doc, docx, odt, pdf, rtf, ps, eps
- excel - xls,xlsx
- image - jpeg, jpg, png, gif, tif, tiff, svg, emf, bmp, wmf, ps, eps
- audio - wav, mp3, ac3, ogg
- video - mp4 (ideally H.264 video and AAC audio encoding)
- office - xls,xlsx,ods,doc,docx,odt,rtf,pps,ppt,ppsx,pptx,key
- presentation - pps, ppt, ppsx, pptx, key
- spreadsheet - xls,xlsx,ods
- word - doc, docx
- html - html, htm, xhtml
- text - txt, csv, md, rtf

Current files size limitation = 50 MB

Please note: File name should be less than 90 characters.

# Present Task

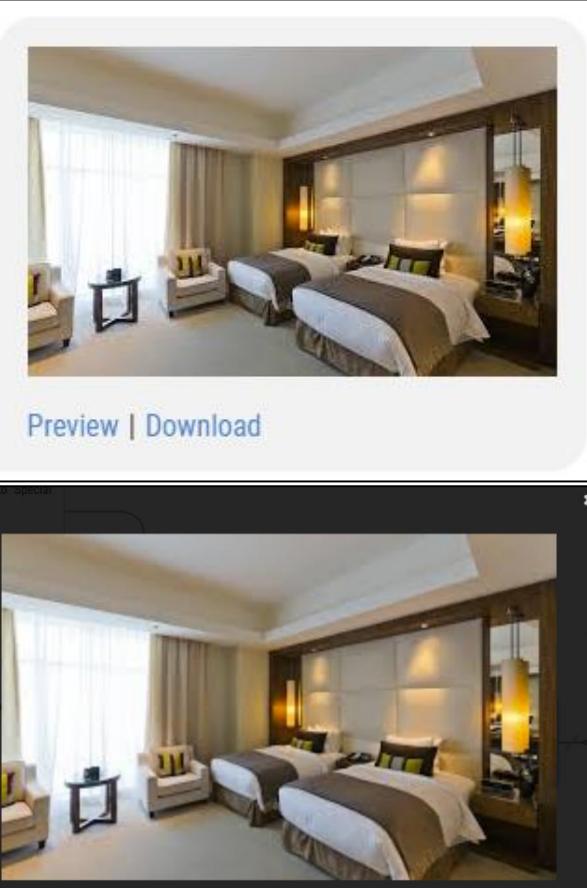
- Shows a resource to the end user
- Syntax: present <file\_name.ext> from <bucket\_name>



# Present Image/PDF Properties

## Previewable File Types:

- Based on preview style in properties
  - IMAGE/JPEG
  - IMAGE/GIF
  - IMAGE/SVG
  - IMAGE/BMP
  - IMAGE/PNG
  - DOCUMENT/PDF
  - TEXT/HTML
  - TEXT/XHTML



## Preview Rules:

- Preview style cannot be No preview if Download set to No
- Preview style cannot be Popup Only if Download set to Yes
- Inline and Popup -> presents in chat with Preview pop-up optional
- Popup and Inline -> presents as pop-up automatically and in chat

**Preview**

Inline and Popup

Inline and Popup

Popup and Inline

Inline only

Popup Only

No Preview



Double Room

This is an example double room.

File name: double.jpg

File size: 7.4 kB

[Preview](#) | [Download](#)

Properties    Custom Properties

**Main Properties**

Name: present breakfastMenu.jpg from roomservice

Preview: Inline and Popup

Display behaviour of document.

Download: No

Use default or custom styles.

Display file name

Boolean selection if the file name is to be displayed along with the CM resource.

Display file size

Boolean selection if the file size is to be displayed along with the CM resource.

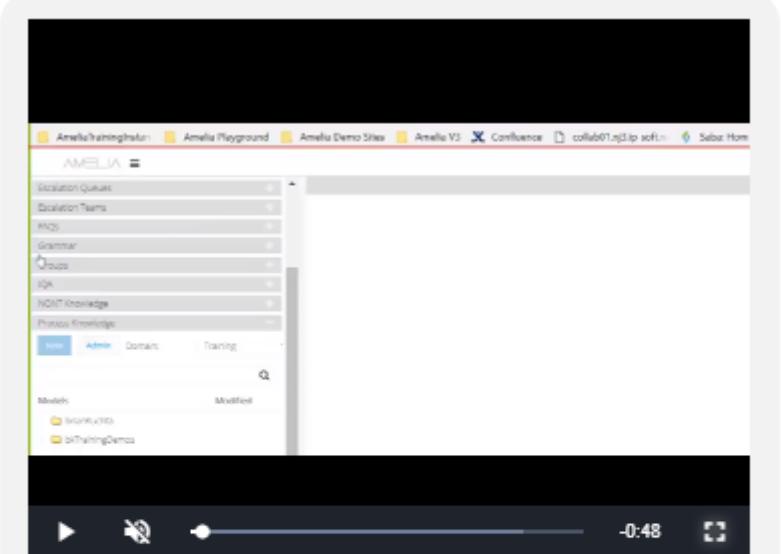
Title

Title for the resource being presented.

Description

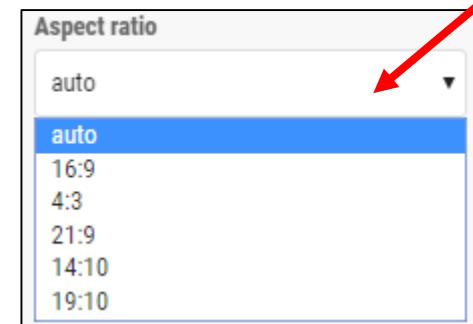
# Present Video Properties

 present  
7minuteVideoDemo.  
mp4 from  
miscellaneous



Short video  
This video is only 49 seconds  
[testVideo.mp4 | 810.4 kB](#)  
[Download](#)

Amelia | 5:12:28 PM



**Main Properties**

**Name**  
present 7minuteVideoDemo.mp4 from miscellaneous

**Display file name**  
Boolean selection if the file name is to be displayed along with the CM resource.

**Display file size**  
Boolean selection if the file size is to be displayed along with the CM resource.

**Aspect ratio**  
Aspect Ratio at which the video is rendered.

**Mute**  
Boolean value to indicate if the audio/video would be play as muted or not.

**Title**  
Title for the resource being presented.

**Description**  
Description for the resource being presented.

# HTML Documents

- Choose bucket and select Create Document
- Click Source to switch between HTML and WYSIWYG editors

**Resources**

Home > hotel

Upload + Create Document Refresh Search

**Source**

B I U S x x<sup>a</sup> Tx | ABC

Styles Format

Currencies

BGN  
BRL  
DKK  
GBP  
JPY  
NZD

```
<table border="1" cellpadding="1" cellspacing="1" style="width:74px">
<tbody>
  <tr>
    <td style="width:66px"><u><strong><span style="font-size:15.6px">

IP SOFT


```

- Best practice for presenting long text in a formatted style

<h1>Types</h1>

<h3>Hotel operations vary in size, function, and cost. Most hotels and major hospitality companies that operate hotels have set widely accepted industry standards to classify hotel types. General categories include the following:</h3>

<div style="background:#eeeeee; border:1px solid #cccccc; padding:5px 10px">

<h2><strong>Luxury</strong></h2>

<p>A luxury hotel offers high quality amenities, full service accommodations, on-site full-service restaurants, and the highest level of personalized and professional service. Luxury hotels are normally classified with at least a Four Diamond or Five Diamond rating by American Automobile Association or a Four or Five Star local classification standards. Examples include: InterContinental, Conrad, Mandarin Oriental, Four Seasons, and The Ritz-Carlton.</p>

## Types

Hotel operations vary in size, function, and cost. Most hotels and major hospitality companies that operate hotels have set widely accepted industry standards to classify hotel types. General categories include the following:

### Luxury

A luxury hotel offers high quality amenities, full service accommodations, on-site full-service restaurants, and the highest level of personalized and professional service. Luxury hotels are normally classified with at least a Four Diamond or Five Diamond rating by American Automobile Association or a Four or Five Star hotel rating depending on the country and local classification standards. Examples include: InterContinental, Conrad, Mandarin Oriental, Four Seasons, and The Ritz-Carlton.

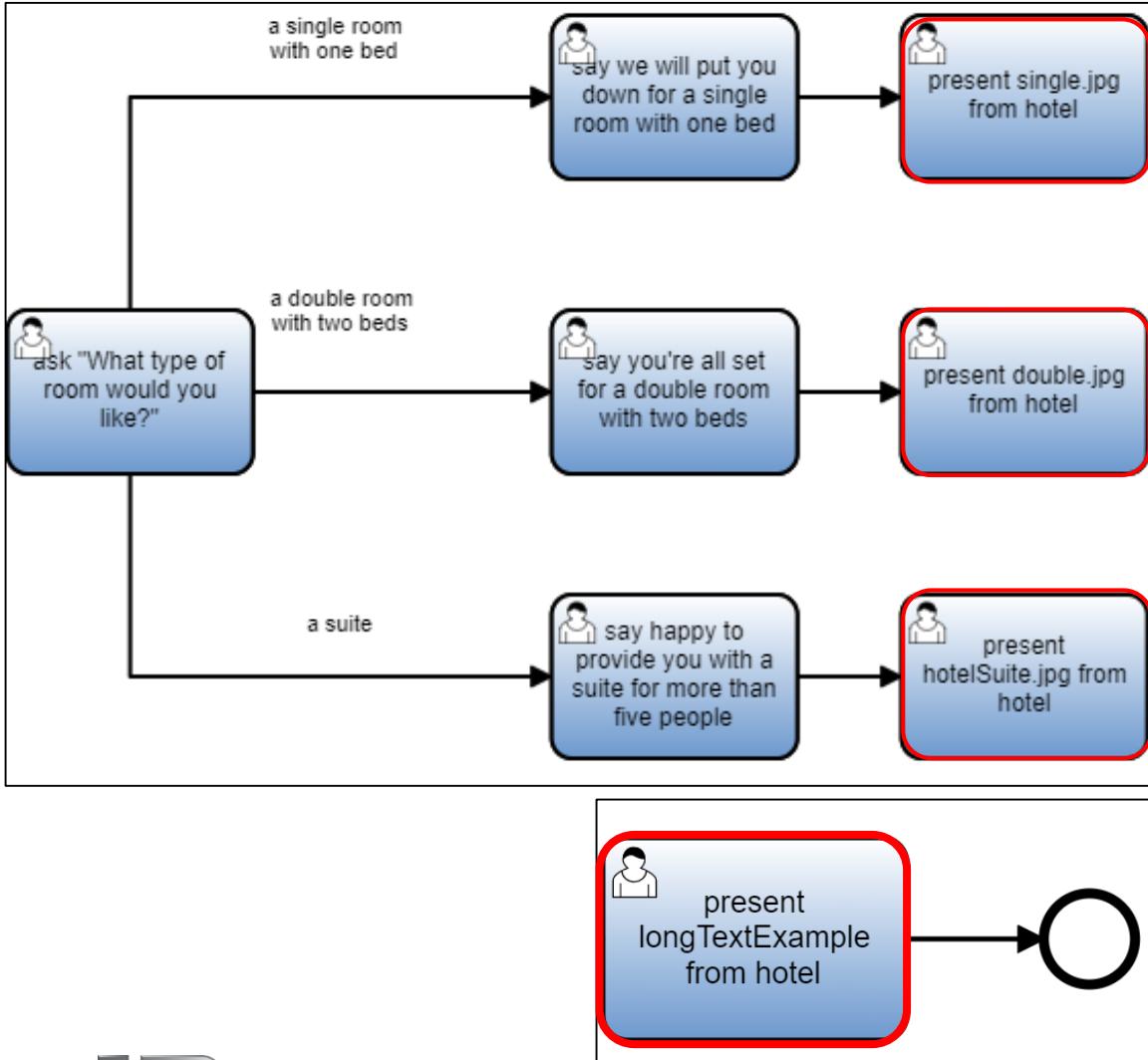
# Present HTML Document Properties

## Preview

- Preview style cannot be No preview if Download set to No
- Preview style cannot be Popup Only if Download set to Yes
- Inline and Popup -> presents in chat with Preview pop-up optional
- Popup and Inline -> presents as pop-up automatically and in chat
- Document Style
  - **Inherit:** Styling from where HTML renders
  - **Original:** Styling in HTML document

Properties	Custom Properties
<b>Main Properties</b>	
Name	present reservationCertificate.html from hotel
Preview	Display behaviour of document.
Document styles	Use default or custom styles.
Download	Use default or custom styles.
Display file name	Boolean selection if the file name is to be displayed along with the CM resource.
Display file size	Boolean selection if the file size is to be displayed along with the CM resource.
Title	Title for the resource being presented.
Description	

# Activity



## Present Task

- Create a bucket.
- Find an image/document relevant to your Amelia skill and present it in your BPN.
- Create an HTML document for your Amelia skill and present it.
- Test the different Present properties in Mind view.

Timing: 10 minutes

Validation: Mind View Testing

# Request Task

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# Request Task – Single and Multiple Resources

## Single Resource:

request [a|an] <resource\_type> and store into|to <bucket\_name>

request [a|an] <resource\_type> identified by <variable\_name> and store into|to <bucket\_name>

## Multiple Resources:

Do not use article (a|an) before resource type

### Examples:

- request excels and store to spreadsheetrevisions



## Resource Types:

binary - any file extension

document - doc, docx, odt, pdf, rtf, ps, eps

excel - xls, xlsx

image - jpeg, jpg, png, gif, tif, tiff, svg, emf, bmp, wmf, ps, eps

audio - wav, mp3, ac3, ogg

video - mov, mpeg, mpg, mp4, ogv, ogg, m4v, 3gp, flv

office - xls, xlsx, ods, doc, docx, odt, rtf, pps, ppt, ppsx, pptx, key

presentation - pps, ppt, ppsx, pptx, key

spreadsheet - xls, xlsx, ods

word - doc, docx

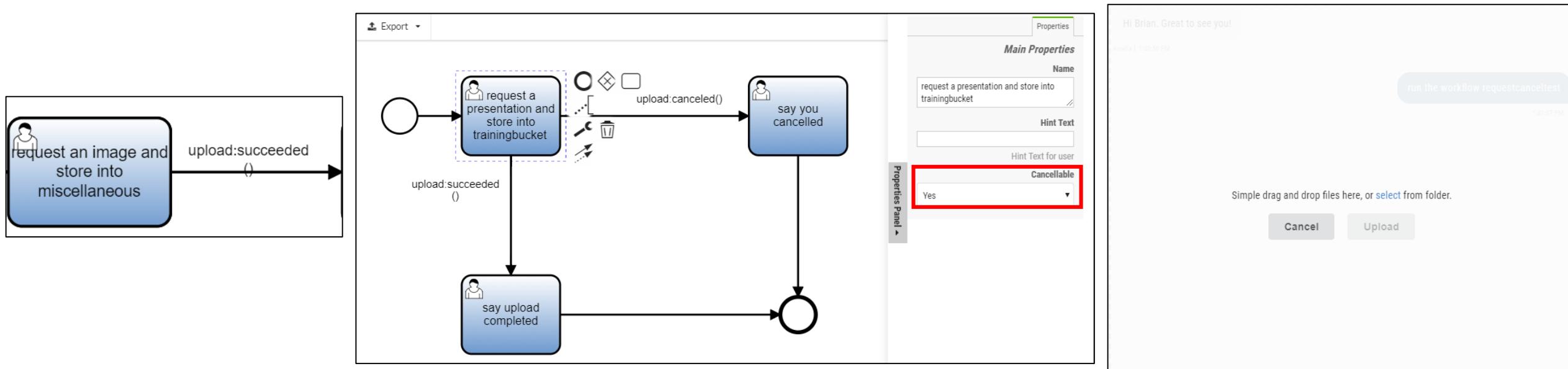
html - html, htm, xhtml

text - txt, csv, md, rtf

# Request Task – upload:succeeded() and Enable Cancellation

Edge expression:

- `upload:succeeded()` - evaluates to true if successfully uploaded
  - Must be included even if cancellation is not used
- `upload:canceled()` - evaluates to true if canceled

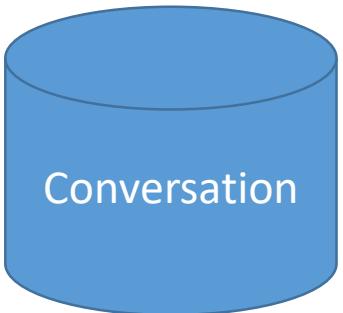


Messages	Affected Element
<p>✗ Incorrect usage of successful upload edge expression, please use 'upload:succeeded()' instead.</p>	request excels and store into hotel

# Request/Present Task Scope

- Resource scope:
  - System resources – uploaded to specific bucket via admin portal
  - Conversation resources – uploaded during conversation by end user (via Request Task) into specified bucket

Request writes to CDB



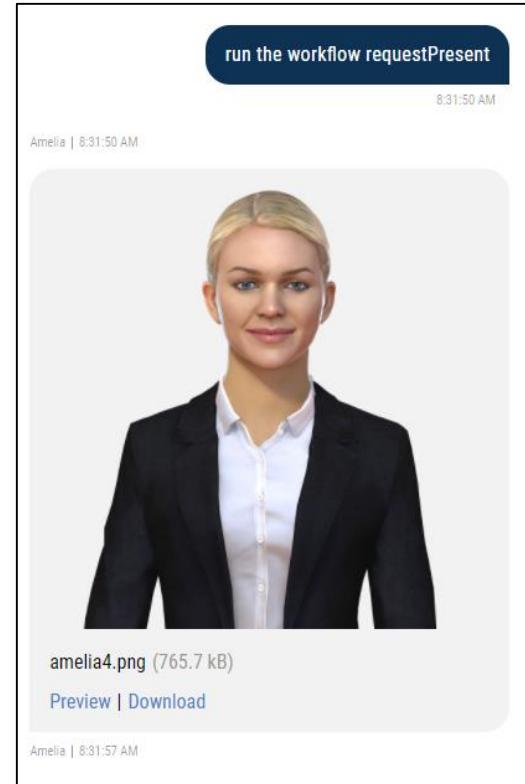
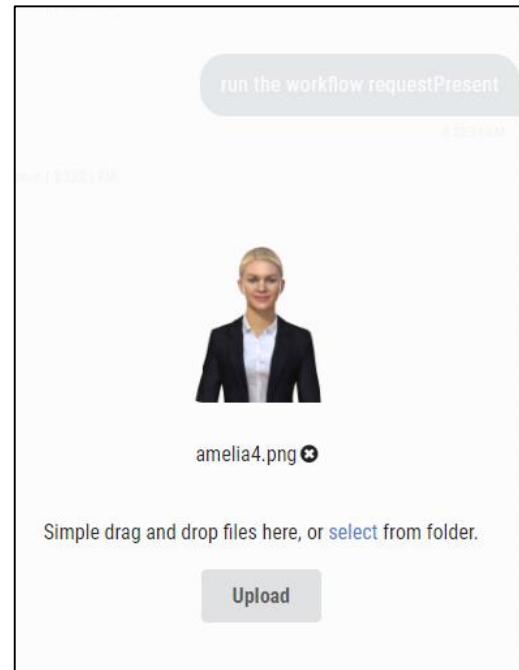
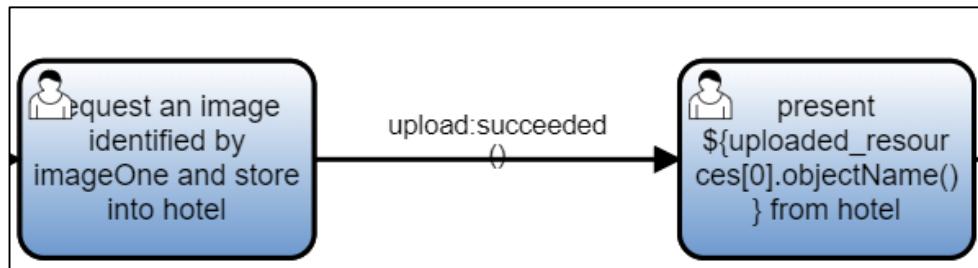
Admin writes to KDB  
End user reads from KDB



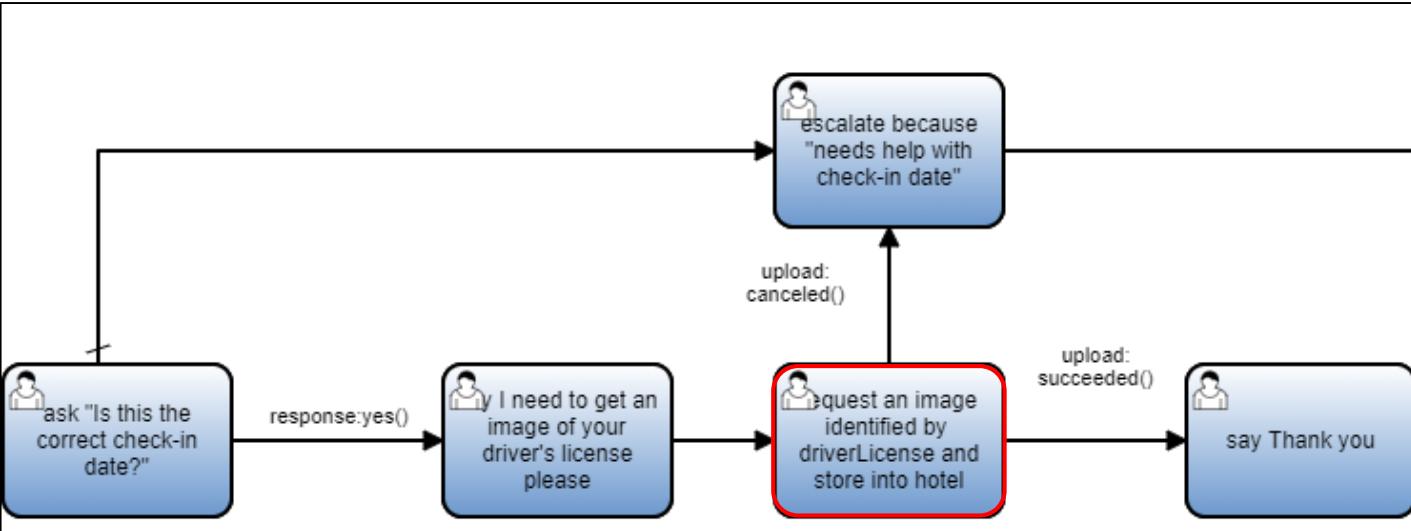
# Request then Present

Current solution:

present \${uploaded\_resources[0].objectName()} from bucketName



# Activity



## Request Task

- Create a Request task for your Amelia skill.
- Test in the Mind view.

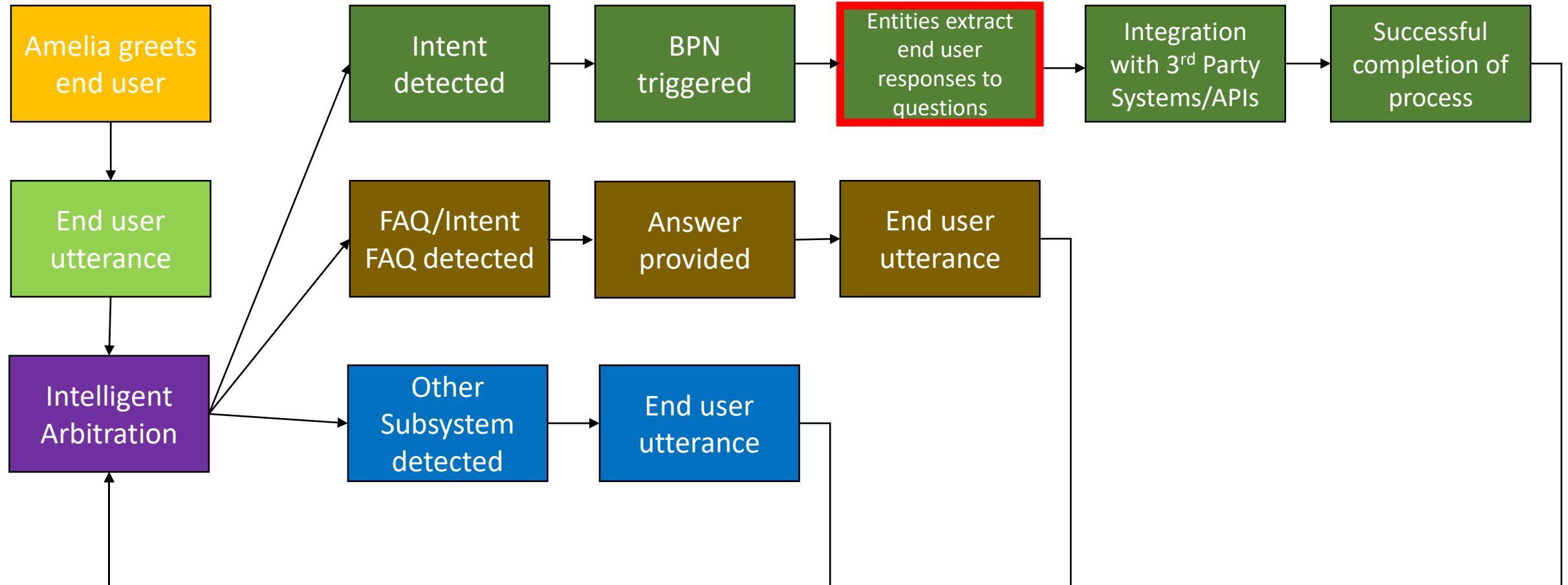
Timing: 10 minutes  
Validation: Mind View Testing

# Amelia Trainer: Entities

---



# General Amelia Conversation Flow



# Entities

- Extracts information from end user utterance needed to help achieve intent
- Created using specific Datum types
  - Most have any number of possible values, such as names, numbers, dates, codes => extractable using a "tagger"
  - Identifies span in utterance/labels entity
- Stored as an abstract datum object
- Replaces slots from V2

The screenshot shows the IPsoft Entities management interface. On the left, there is a table titled 'Entities' displaying a list of defined entities with columns for Name, Type, Description, and Actions. The table includes entries like '1desserts' (INTEGER), '1HouseSize' (INTEGER), 'age' (AGE), 'age\_range' (AGE\_RANGE), 'agenumber' (INTEGER), 'airport' (AIRPORT), 'airwatch\_issue' (TEXT), 'allHotelDates' (DATE), 'applications' (CUSTOM\_DATUM), and 'area' (AREA). On the right, there is a modal window titled 'Add Entities' with fields for Name, Code, Datum Type, Description, and a 'Spanless Entity' checkbox. Below the modal is a section for 'Upload Entities' with a file upload area and an 'Import from Grammars' button.

Name	Type	Description	Actions
1desserts	INTEGER	Role entity parent	
1HouseSize	INTEGER	parent entity for bathrooms and bedrooms	
age	AGE	Use with qty prefix and datum test	
age_range	AGE_RANGE	datum test	
agenumber	INTEGER	Analytic memory test	
airport	AIRPORT	datum test	
airwatch_issue	TEXT		
allHotelDates	DATE	parent entity to checkInDate and CheckOutDate - Used in reserveARoom	
applications	CUSTOM_DATUM	Applications normalized	
area	AREA	datum test	



# Group Activity: Standard Entity with Prediction Testing

1. In Admin view, click on Amelia Trainer->Entities. Click Add Entities tab.
2. Add “yourInitialsFavoriteColor” for both Name and Code.
3. Select Datum Type: TEXT, and add a description: My first entity then click Add.
4. Click on your entity in the entity list, and under Amelia Asks include the question - What’s your favorite color? - and click Add.
5. Click on Amelia Trainer->Annotate.
6. In the V3DayTwoExerciseFilesV13.0 folder, rename “entityColorTextActivityDataSet” to “yourinitialsentityColorTextActivityDataSet”, and import into annotation framework as a plain text file.
7. Annotate the color words, which include unigram, bigram, and n-gram examples with the name of your entity.
8. Save file as “yourInitialsColors”.
9. Click the Train tab. Select Entity Tagger model type. Create a new model with the name “yourInitialsColorsModel”.
10. Turn off include all entities and select the training data set you just annotated. Use all other default settings.
11. Click on Amelia Trainer->Dashboard. When status shows “ready”, deploy the model.
12. Click on Amelia Trainer->Predict, enter a test utterance, and click Predict. Review the results under Entities.

Please note: this is a relatively small data set for a large set of possible answers. As such, prediction results will vary. There are additional tools that will be covered in a later class to support entity extraction.

# Amelia Trainer – New Entity

The screenshot shows the 'Entities' screen in the Amelia Trainer interface. On the left, a list of existing entities is displayed with columns for Name, Type, Description, and Actions. A search bar at the top allows filtering by Name, Datum Type, or Description. On the right, a modal window titled 'Add Entities' is open, divided into several sections: 'Name' (with fields for Name and Code), 'Datum Type' (with a dropdown menu 'Select Datum Type'), 'Description' (with a text input field), and 'Spanless Entity' (with a checkbox). At the bottom of the modal is a large blue 'Add' button. Below the modal, there's a section for 'Upload Entities' with a cloud icon and instructions to drag and drop files or browse for them. A footer at the bottom of the modal includes a link to 'Import from Grammars'.

- 1
- 2
- 3
- 4
- 5

1. From the entities screen, click Add Entities
2. Add Name and Code
3. Select Datum Type
4. Optionally, add a description
5. Click Add

# Working with a New Entity

Entities

Intents Entities Predict Annotate Dashboard

Name, Datum Type, Description

6

Name	Type	Description	Actions
colors	TEXT	Used for custom feature and standard entity	
colorsEntityNormal	CUSTOM_DATUM	test for fallback	
colorsNormalized	CUSTOM_DATUM	Uses custom normalizer	
confirmationNumber	INTEGER	Used for stochastic BPN and more	
cookies	INTEGER		
cost	INTEGER	Test for multiple slot extraction script	
costRange	CURRENCY_RANGE	Test for Cost Range	
countryFrom	COUNTRY	child to countryParent	
countryParent	COUNTRY	parent entity for countryTo and countryFrom	
countryTo	COUNTRY	child to countryParent	

Page 3 of 11 ~ 106 total entities

Actions  Select All

6. Click on entity name or pencil  
7. Add the question(s) Amelia should ask the end user to obtain the value to fill the entity slot

colors

Used for custom feature and standard entity

Spanless

Role

Code Datum type   
colors TEXT

+ Add child

3 Questions | Collapse

AMELIA ASKS

Add a question or prompt for this entity...

7

What's your favorite color?  
Psychologist say that colors affect mood. If your current mood was a color, what color would it be?  
If you were a color, what color would you be?

# Amelia Trainer – Annotate

The screenshot shows the 'Annotation Framework' interface with a top navigation bar featuring 'Intents', 'Entities', 'Predict', 'Annotate' (which is underlined in blue), and 'Dashboard'. Below this is a horizontal workflow bar with four steps: '1. Load / Learn', '2. Annotate', '3. Train', and '4. Export'. Step 1 is highlighted with a blue dot. On the left, there are buttons for 'Load New' (selected), 'Load Existing', and 'Learn'. The main area is titled 'Load New File' and contains a list of file types: 'Plain Text' (selected), 'User-Agent Dialog', 'Annotated Document', and 'TSV'. A large dashed rectangular area is provided for dragging and dropping files, with a cloud icon and the text 'Drag and Drop your file in this area or [Browse](#) your computer'. At the bottom right of this area is a button labeled 'Skip, go to annotate'. To the right of the main area is a vertical sidebar with buttons for 'Load', 'Annotate', 'Train', 'Queue', 'Export', and 'Chart'.

8. Import an unannotated data set of utterances that includes examples of entity values for specific entity(ies)

- **Plain Text:** any plain text file without annotation
- User-Agent Dialog: Amelia/User annotated conversation for use with Episodic Memory (TBD)
- Annotation Document: JSON previously downloaded through annotation framework
- **TSV:** annotated data set

# Annotation Framework – Manual Annotation

Annotation Framework

Intents Entities Predict Annotate Dashboard

1. Load / Learn 2. Annotate 3. Train 4. Export

51 total utterances Auto Annotate Train colorsForAllTests Save As

9

Intents Entities

colors Aero Blue ×  
colors American Brown ×  
colors cobalt blue ×  
colors Banana Yellow ×  
colors wheat ×  
colors Bitter Lemon ×  
colors black ×

Load Annotate Train Queue Export Chart

colors▼  
bedrooms  
boolean  
BusinessTravel  
capital  
checkInDate  
checkOutDate  
children  
colors  
colorsEntityNormal  
colorsNormalized  
confirmationNumber  
cookies  
Bitter Lemon  
black

Child to 1HouseSize  
datum test  
Used for Analytics and more  
datum test  
child to hotelDates - used in reserveARoom  
child to hotelDates - used in reserveARoom  
Analytic Memory tester for auto modeling  
Used for custom feature and standard entity  
test for fallback  
Uses custom normalizer  
Used for stochastic BPN and more  
Test for multiple slot extraction corint

9. Highlight specific entity example in utterance
  - Select entity name from list
10. Save annotated data set
  - Recommend inclusion of date/version
  - Save As overwrites currently saved version

# Annotation Framework – Train Entity Model

11. Select Train -> Entity Tagger Type
12. Create new model
13. Select the annotated training data set
  - Optionally include a validation data set and modify cross-validation in Evaluation
  - Optionally select a specific algorithm
    - PA Tagger (default)
    - CRF Tagger
    - Linear SVM Tagger
    - DNN Tagger
14. Model sent to queue

The figure consists of three screenshots illustrating the annotation framework process:

- Screenshot 11:** A modal window titled "Train Models" with a circular ID "11". On the left, tabs for "Load", "Annotate", and "Train" are visible, with "Train" being the active tab (highlighted by a red box). The main area shows a dropdown menu set to "Entity Tagger".
- Screenshot 12:** A modal window titled "Train Models" with a circular ID "12". It shows the "Train" tab selected. Below the dropdown, there's a "Select from existing" dropdown set to "Select an existing model", and a "Create new model" section with a text input field "Or enter a new model name".
- Screenshot 13:** A modal window titled "Train Models" with a circular ID "13". It shows the "Train" tab selected. The main area displays a dataset named "bkColors" with an "Entity Tagger" type and a "New" status. Buttons for "Save" and "Train" are present. Below the dataset, sections for "Datasets", "Training datasets", "Evaluation", and "Algorithm" are shown.
- Screenshot 14:** A modal window titled "Queue (1)" with a circular ID "14". It shows a single item in the queue: "bkColors" with status "Waiting" and "Algorithm: Passive Aggressive Tagger".

# Amelia Trainer – Dashboard

When training complete, go to Amelia Trainer-> Dashboard for results/deployment

14. Check stats for model training to determine potential confusion

15. When ready to use model, deploy



If status shows failure, check Logs

Model Name	Revision	Created By	Utterances	Algorithm	Actions	Logs	Stats	Status
autoInsuranceMeta	v.1.0	Brian Kuchta	100	PAC				ready
billDiscrepancyMeta	v.1.0	Brian Kuchta	47	PAC				ready
bkColors	v.1.0	Brian Kuchta	433	PAT				ready

# Annotation Framework – Dashboard Stats

- For the standard entity, review Correct, System, and Gold for measure of successful model training
- Test in Predict using various utterances and values

## foodOrderPAV1: Model Evaluations

Evaluation Name	Evaluation Date	Statistics
foodOrderPAV1_validation	3/1/2018, 9:00:04 AM	
foodOrderPAV1_5-fold_cv	3/1/2018, 9:00:03 AM	(Red box)
foodOrderPAV1_5-fold_cv_4	3/1/2018, 9:00:03 AM	
foodOrderPAV1_5-fold_cv_3	3/1/2018, 9:00:03 AM	
foodOrderPAV1_5-fold_cv_2	3/1/2018, 9:00:03 AM	
foodOrderPAV1_5-fold_cv_1	3/1/2018, 9:00:03 AM	
foodOrderPAV1_5-fold_cv_0	3/1/2018, 9:00:03 AM	

## foodOrderPAV1\_5-fold\_cv: Statistics

	Correct	Gold	System	Precision	Recall	F1
foodOrder	27	45	35	77.14	60.00	67.50
Overall	27	35	45	77.14	60.00	67.50

# Dashboard Stats and Predict

- For the standard entity, review Correct, System, and Gold for measure of successful model training
- Test in Predict using various utterances and values

bkColors: Model Evaluations		
Evaluation Name	Evaluation Date	Statistics
bkColors_validation	7/20/2018, 1:12:59 PM	
bkColors_5-fold_cv	7/20/2018, 1:12:59 PM	
bkColors_5-fold_cv_4	7/20/2018, 1:12:59 PM	
bkColors_5-fold_cv_3	7/20/2018, 1:12:59 PM	
bkColors_5-fold_cv_2	7/20/2018, 1:12:59 PM	
bkColors_5-fold_cv_1	7/20/2018, 1:12:59 PM	
bkColors_5-fold_cv_0	7/20/2018, 1:12:58 PM	

bkColors: Model Evaluations		
Evaluation Name	Evaluation Date	Statistics
<b>bkColors_5-fold_cv: Statistics</b>		
	Correct	Gold
colors	28	39
Overall	28	39
	System	Precision
colors	39	71.79
Overall	39	71.79
	Recall	F1
colors	71.79	71.79
Overall	71.79	71.79

Predict Intents and Entities

Intents Entities **Predict** Annotate Dashboard

My favorite color is cobalt blue **Predict**

▶ Advanced options

Intents Entities CQA System NLP

cobalt blue  
cobalt blue

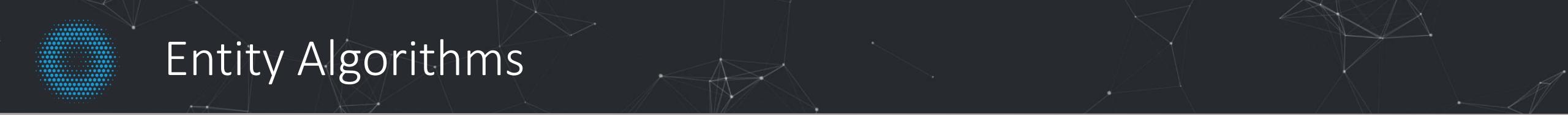
colors TEXT

Advanced options:  
Filter entity results

- Filter result by specific entity

Prompt entity

- Question used in BPN can affect tagging



# Entity Algorithms

- Passive Aggressive Tagger (Default: Multiclass Multi-Label PA)
- CRF Tagger (Conditional Random Field)
  - Long distance dependencies handled well
    - Entities that are more than two tokens long
  - Tokens should be contiguous
  - Token order important
  - Used for larger data set
- Linear SVM Tagger
  - Entities 1 or 2 tokens
  - Less data available
- DNN Tagger (Beta)
  - Bidirectional LSTM
  - Works better with more data

# Activity

## Entity Workflow:

1. Determine entity based on information needed from end user to achieve the intent (Amelia skill)
2. Create the entity (Entities)
  - Name/Code
  - Datum Type
  - Description
3. Add question(s) that should be asked to obtain entity answer from end user
4. Annotate entity within example utterances (Annotation Framework)
5. Train entity model (Annotation Framework)
6. Review model statistics (Dashboard)
7. Deploy model (Dashboard)
8. Test Model (Predict)

## Entities

- Create an Integer datum entity for your Amelia skill.
- Develop 20+ grammatically varied utterances for your entity.
- Import them into the annotation framework.
- Annotate the entities and save.
- Create an entity model using your annotated entity utterances.
- Review the stats in dashboard and deploy.
- Test in Predict.

Timing: 30 minutes

Validation: Predict Tool

# Putting It Together: Entities and ask for the slot

---

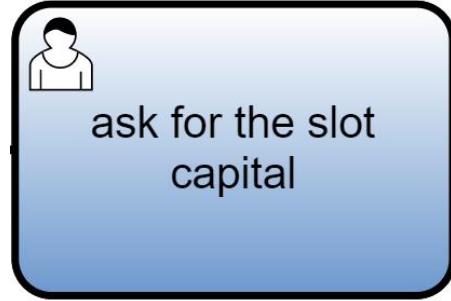


# Ask for the Slot

Syntax:

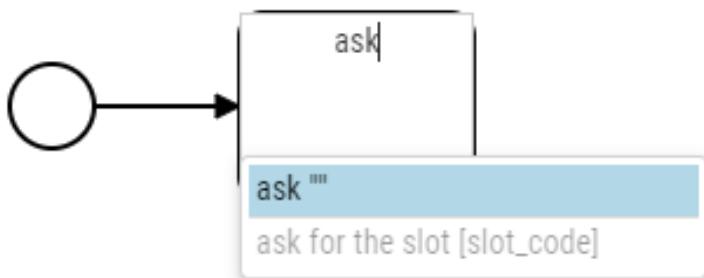
ask for the slot <entityCode>

- ask for the slot roomNumber



Open ask task properties

- Select the question to be used



**Main Properties**

Name	ask for the slot dateRange
Question	What's the date range for your stay?

**What's the date range for your stay?**

# Ask Task Properties – Question Selection Policy

- Fixed = select question used
- Round-robin = cycles through question options in entity
- Random = randomly selects question from entity



Questions

Please tell me what you would like from room service.	<input type="button" value="Add"/>	<input type="button" value="Delete"/>	<input type="button" value="Edit"/>
What do you fancy from our in-house restaurant today?	<input type="button" value="Delete"/>	<input type="button" value="Edit"/>	
What would you like to order?	<input type="button" value="Delete"/>	<input type="button" value="Edit"/>	

Question

What would you like to order? ▾

Question for selected slot code

Question selection policy

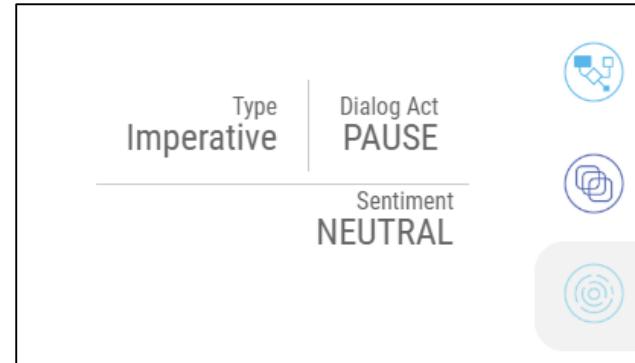
Fixed ▾

Question selection policy for slots with multiple questions for a particular BPN.

# Ask Task Properties – Dialog Acts

End user utterance at ask task should not trigger a BPN and categorized as dialogue act, admin can control if other subsystems are allowed to respond

- Apology: "Sorry", "I apologize", "My mistake"
- Auto feedback negative(user doesn't understand Amelia): "I don't understand"
- Downplay(response to apologies): "Don't worry about it", "No problem", "It was nothing"
- Pause: "Hold on", "One minute while I check on that"
- Thanking: "Thanks so much", "I appreciate it"
- Thanking Reply(response to a thanking): "You're welcome", "It was nothing"





# Ask Task Properties – Imperative, Interrogative, Declarative

If imperative/interrogative/declarative allow others to respond

- Allows other subsystems to respond should end user response to specific ask task be:
  - command (imperative default = yes)
  - question (interrogative default = yes)
  - statement (declarative default = no)

Allow intent switch

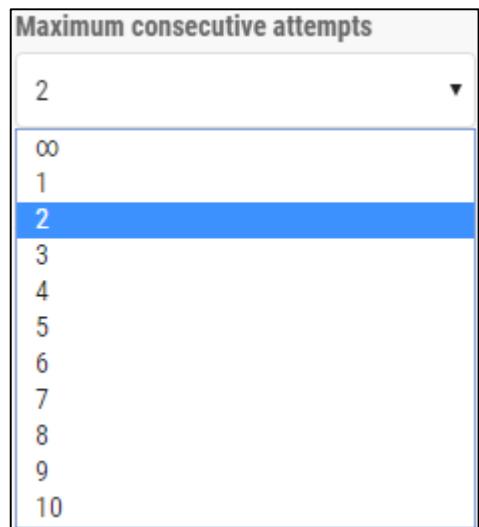
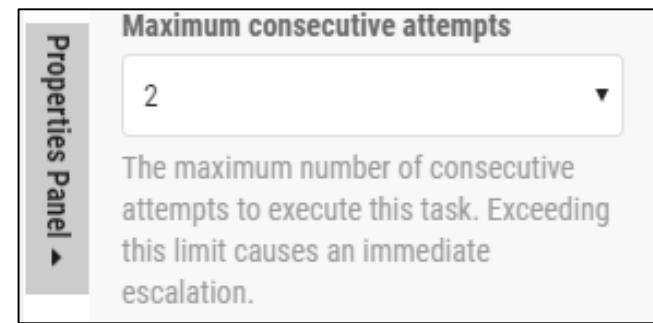
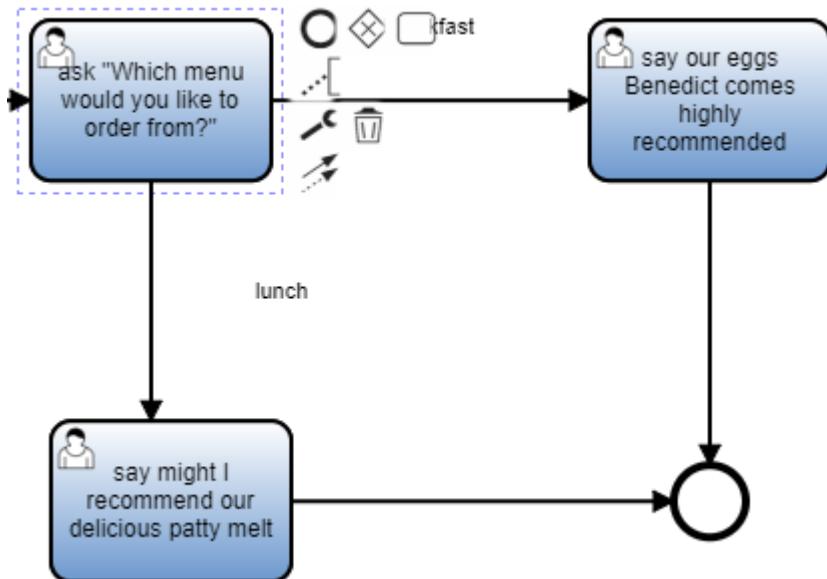
- Controls if another BPN can be triggered at a specific ask task

<b>If imperative allow others to respond</b>
Yes
If set to yes, BPN will give other systems the opportunity to handle the user's response when it is imperative.
<b>If interrogative allow others to respond</b>
Yes
If set to yes, BPN will give other systems the opportunity to handle the user's response when it is interrogative.
<b>If declarative allow others to respond</b>
No
If set to yes, BPN will give other systems the opportunity to handle the user's response when it is declarative.
<b>Allow intent switch</b>
Yes
If set to yes, allow intent to switching.

# Ask Task Properties – Maximum Consecutive Attempts

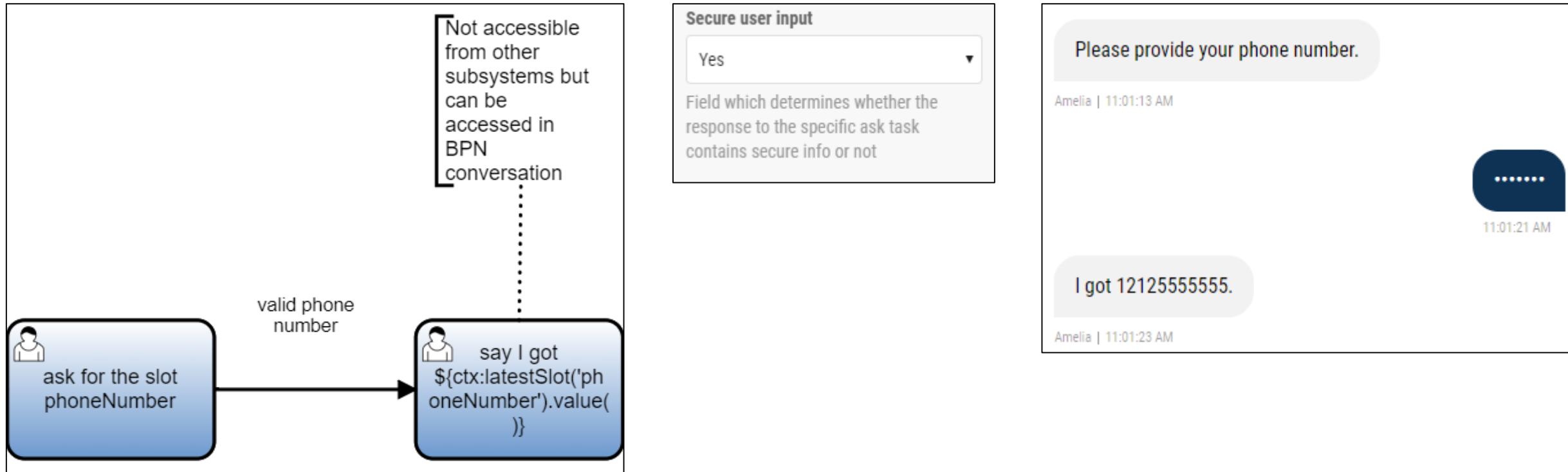
When validating on edges, set ask task to maximum number of attempts

- If exceeded, escalates

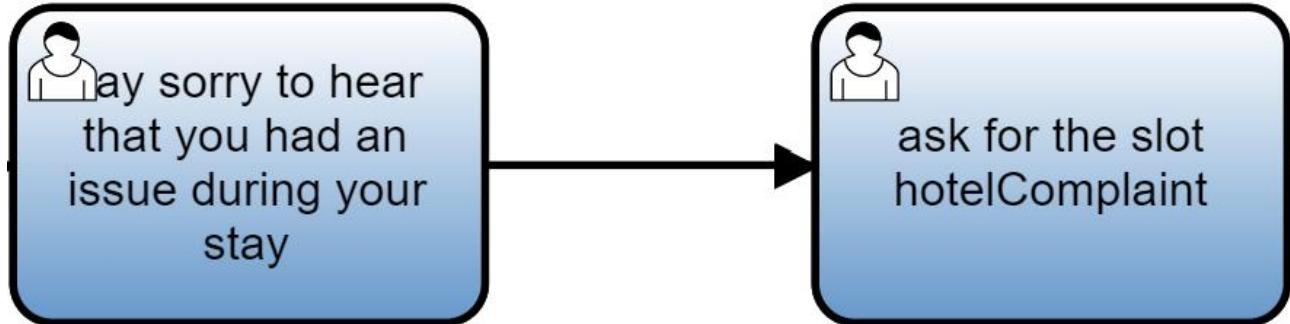


# Ask Task Properties - Secure User Input

- Masks and encrypts end user response
  - Not accessible from other subsystems
  - Can be accessed within BPN conversation



# Activity



## ask for the slot tasks

- For your entities, include ask for the slot tasks in your BPN.
- Choose an appropriate question for each ask task from the properties panel.
- Set the appropriate Ask behavior.
- Save and deploy the BPN.
- Test in mind view.

Timing: 10 minutes

Validation: Mind View Testing

## Service Prefixes - slot: and ctx:

---

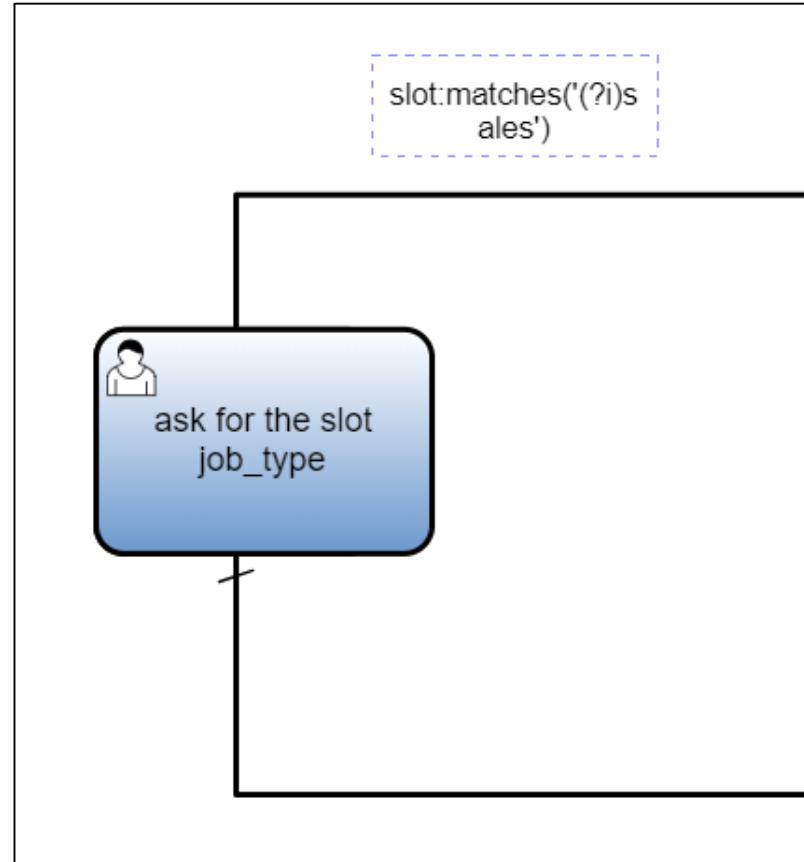
# slot: Prefix

## slot: navigation-related operations

- Used for directional validation immediately after an ask for the slot task
- Obtains normalized value of slot for current task
  - Will escalate if slot nonexistent
  - For TEXT datum type, must have entity model trained

## Base Syntax with matches(): slot:matches(String)

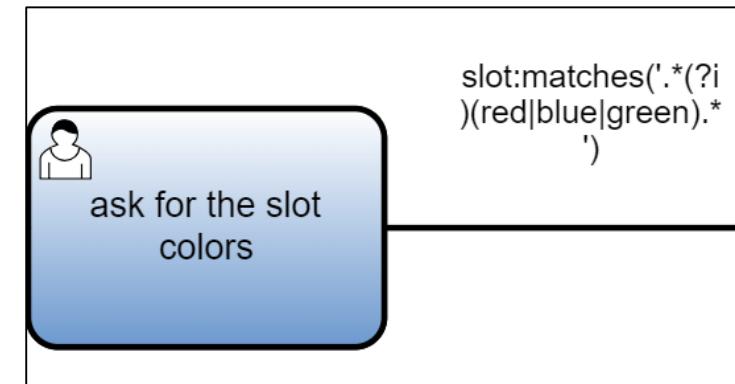
- Can include Regex as String, just like in response: prefix
  - slot:matches('breakfast|lunch|dinner')
- However, cannot mix response/slot namespace references



# slot: Prefix Methods

Slot methods – return Boolean:

- contains(String)
- containsAny(String[])
- containsNone(String[])
- endsWith(String)
- equal(Object)
- get()->returns SlotInstance
- hasDigits()
- hasLetters()
- hasLettersAndDigits()
- hasLettersOrDigits()
- hasSpace()
- idk()
- in(String[])
- isAlphaNumeric()
- isDecimal()
- isInteger()
- isNotPresent()
- isPresent()
- isNumber()
- like(String)
- matches(String)
- no()
- startsWith(String)
- yes()



Syntax:

Methods taking parameter -> slot:contains(String)

Methods without parameters -> slot:isPresent()

# ctx: Prefix

## ctx: current context operations

- Used to validate end user responses extracted by entities
- Base Syntax with matches(): ctx:latestSlot('entityName').value().matches(String)

### Variations

```
ctx:latestSlot('entityName').value().matches('.*(?i)testValue.*')
```

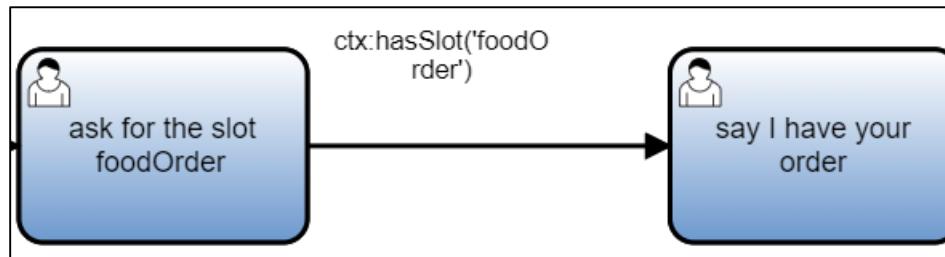
```
ctx:latestSlot('entityName').value().matches('.*(?i)testValue1|testValue2.*')
```

```
ctx:latestSlot('entityName').value().matches('\d{4}')
```

```
ctx:latestSlot('entityName').value().matches('^[a-zA-Z0-9._%+-]+@[a-zA-Z0-9.-]+\.[a-zA-Z]{2,4}$')
```

### Validating if Entity Slot is filled

```
ctx:hasSlot('entityName')  
!ctx:hasSlot('entityName')
```



# Say and ctx: Prefix

## Date Entity:

- say I got \${ctx:latestSlot('checkInDate').value()}

## Integer Entity:

- say I got \${ctx:latestSlot('roomNumber').value()}

 say enjoy your movie in room  
\${ctx:latestSlot('roomNumber').value()}

## Text Entity:

- say I got \${ctx:latestSlot('color').value()}

(Text datum entities must have a model trained to be effective)

 say  
\${ctx:latestSlot('color').value()}  
is one of my favorite colors too

# Ask Task Properties – Ask Behavior (1<sup>st</sup>/Subsequent passes)

## Ask Behavior (1<sup>st</sup> Pass)

- Always ask (default)
- Confirm (requires confirmation question)
- Ignore if responded

## Ask Behavior (Subsequent)

- Always ask (default)
- Confirm (requires confirmation question)
- Ignore if responded

### Ask behavior (1<sup>st</sup> pass)

Always ask

Define the behavior of the first pass

### Ask behavior (subsequent)

Always ask

Define the behavior of the subsequent passes

### Ask behavior (1<sup>st</sup> pass)

Always ask

Always ask

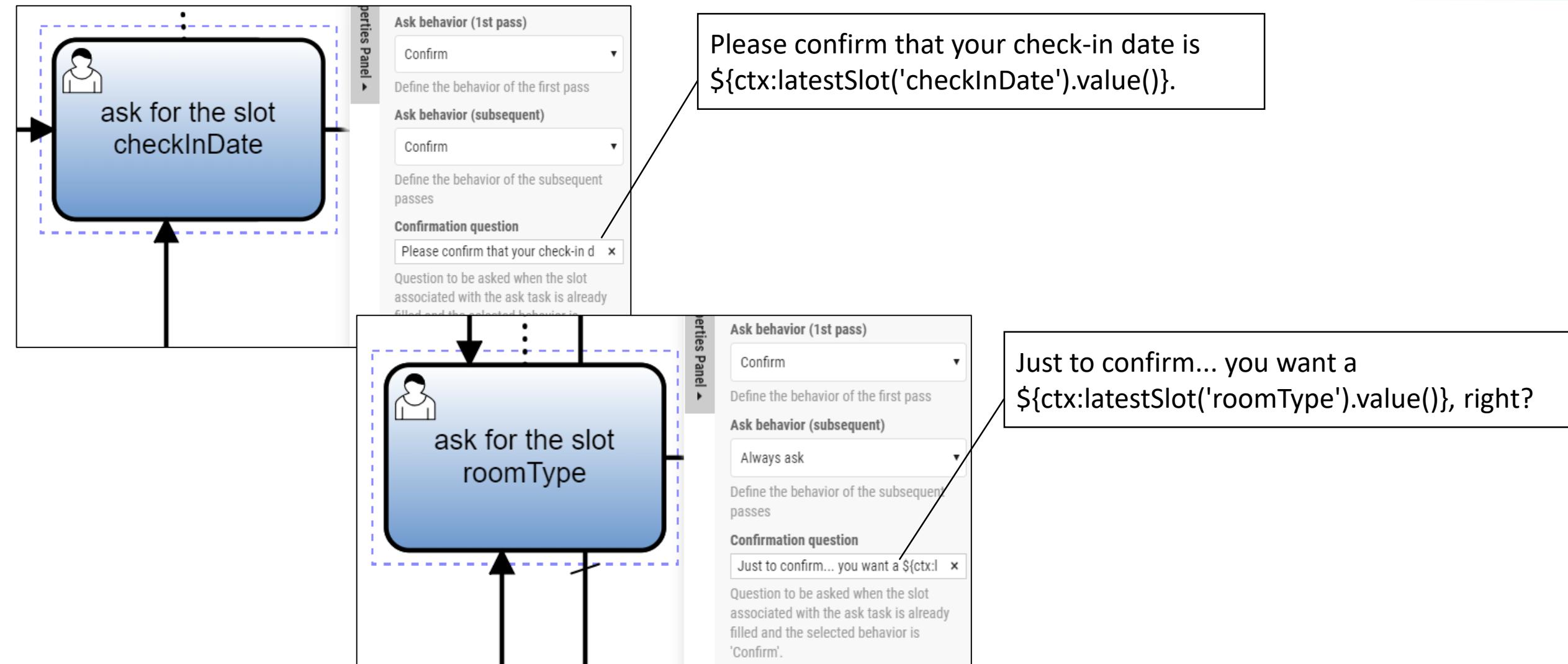
Confirm

Ignore if responded

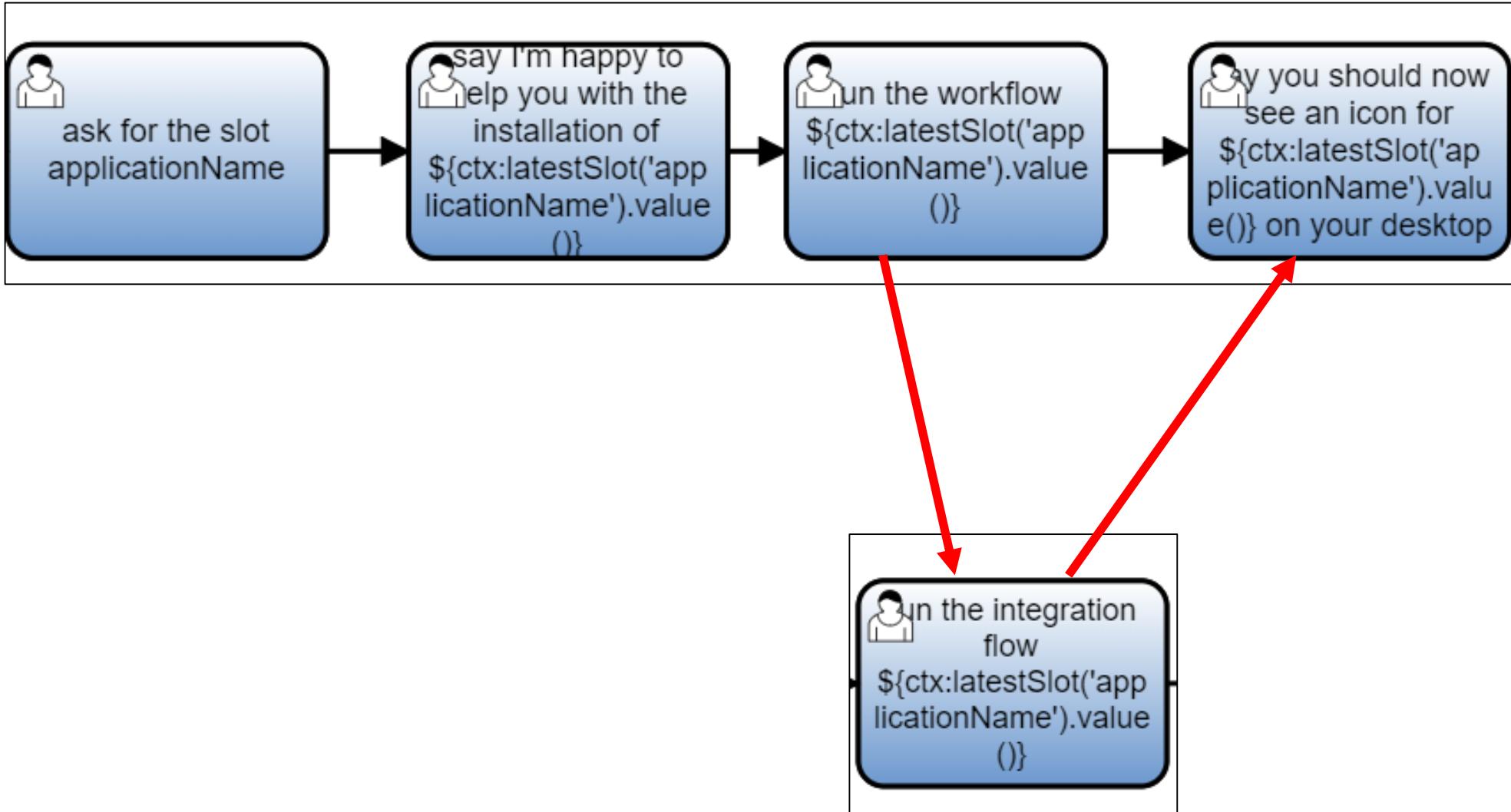
Always ask

Define the behavior of the subsequent passes

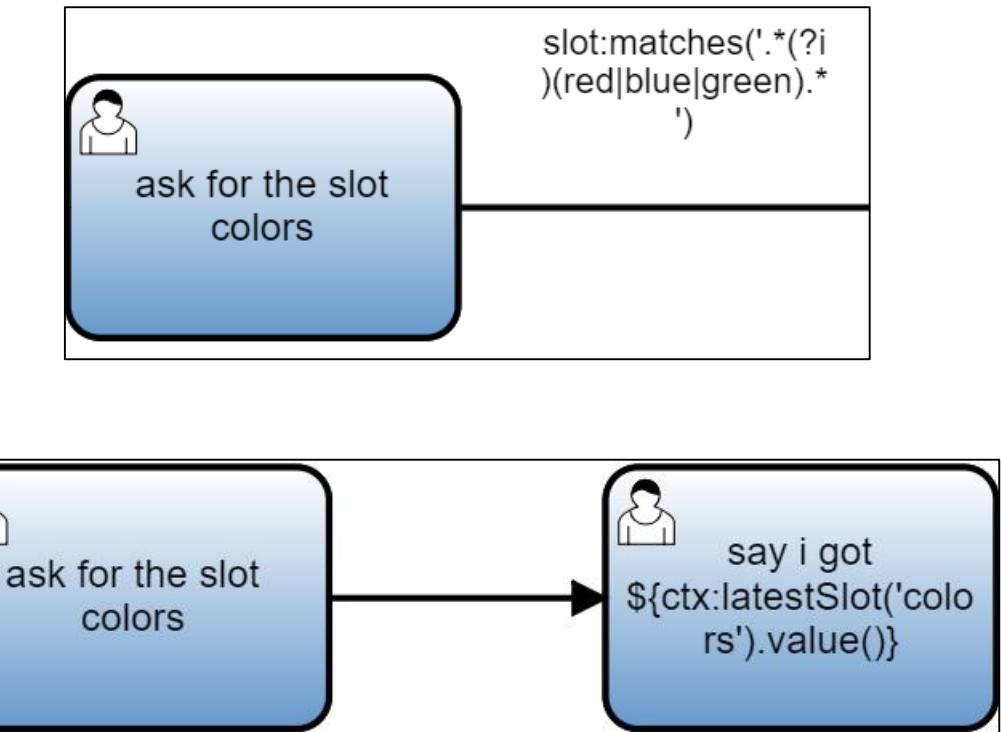
# Ask Task Properties – Confirmation Question with ctx:



# Run the workflow and ctx: Prefix as BPN Name



# Activity



## slot: and ctx:

- Based on your entity(ies), create validations for you ask for the slot tasks to determine the direction of the workflow.
- Test your revised BPN in Process Memory in mind view.

Timing: 20 minutes  
Validation: Mind View Testing

# Datum Types

---



# Datum Types

Tools for extracting input values from natural language inputs

- Pre-defined for handling many popular concepts when working with entities

**Simple:** Like basic types available in most programming languages

- Boolean, Integer, Decimal, Other simple indivisible datum types
  - Ordinal datum (e.g., 1<sup>st</sup>, second, etc.)
  - Date
  - Time

**Unit:** Measurable categories

- Symbols and conversion values stored in respective type by name

**Location:** Include Geolocation information and support geolocation related operations

**Ranges:** Simple or unit

- Closed = two values – max and min/start and end (e.g., from 10 to 20)
- Open ended = start or end value (e.g., until March 1<sup>st</sup>, starting 9 AM EST)

New Entity

Name \*      Code \*

Name      Code

Datum Type \*

AGE

AGE

AGE\_RANGE

AIRPORT

AREA

AREA\_RANGE

BOOLEAN



# Datum

Location	Range		Simple	Unit
	Simple	Unit		
Airport	Date Range	Age Range	Boolean	Age
Capital	Date-Time Range	Area Range	Date	Area
Country	Decimal Range	Currency Range	Date-Time	Currency
City	Integer Range	Duration Range	Decimal	Duration
US County	Ordinal Range	Length Range	Email	Length
US State	Time Range	Percentage Range	Integer	Percentage
Street Address		Speed Range	Ordinal	Speed
Postal Code		Temperature Range	Organization	Temperature
		Volume Range	Person	Volume
		Weight Range	Text	Weight
			Time	
			Phone Number	
			IBAN (for non-US locales)	

# Working with Datum – Simple and Location

- **Simple and Location datum:**
  - `label()`
  - `datumType()=> type of datum`
  - `text()=> raw input`
  - `value() => normalized value`

I would like to pay one hundred.

8:39:54 PM

The label is Integer.

Amelia | 8:39:55 PM

The datum type is INTEGER.

Amelia | 8:39:55 PM

The raw input is one hundred.

Amelia | 8:39:55 PM

The value is 100.

Amelia | 8:39:55 PM

I love the capital of London.

8:44:17 PM

The label is Capital.

Amelia | 8:44:18 PM

The datum type is CAPITAL.

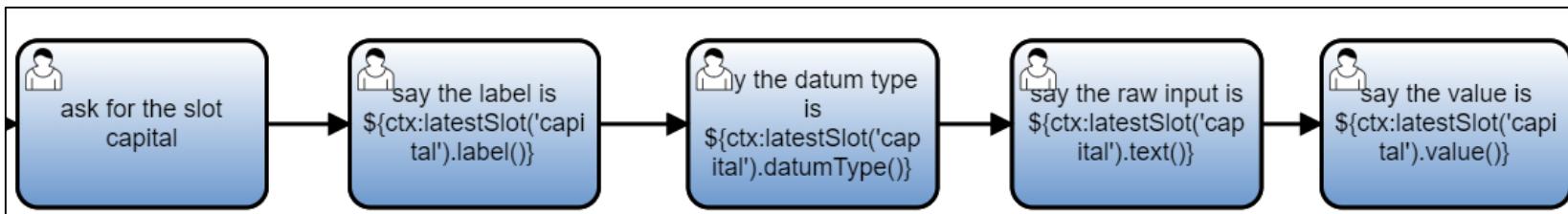
Amelia | 8:44:18 PM

The raw input is London.

Amelia | 8:44:18 PM

The value is London.

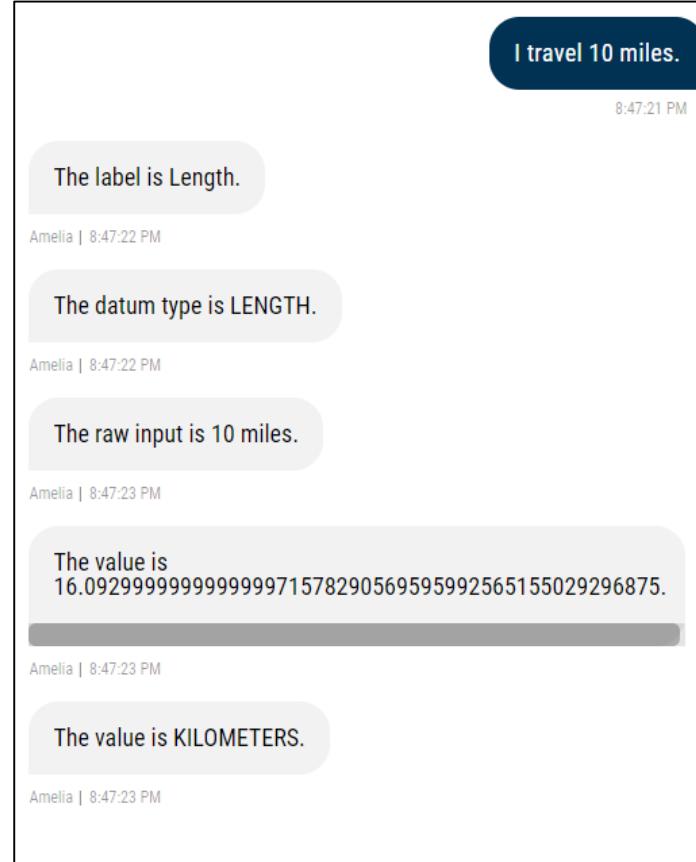
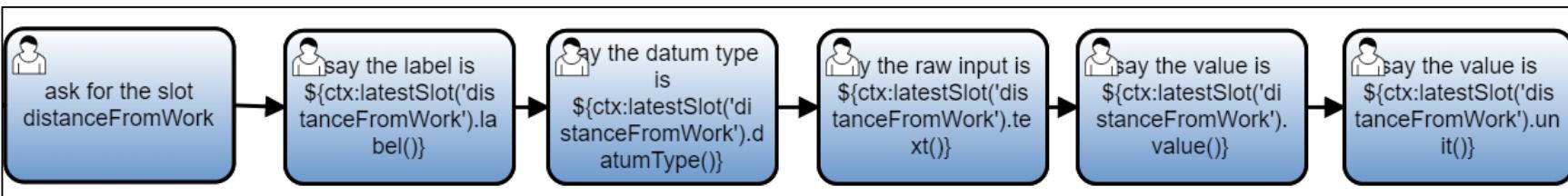
Amelia | 8:44:18 PM



# Working with Datum - Unit

- **Unit datum**

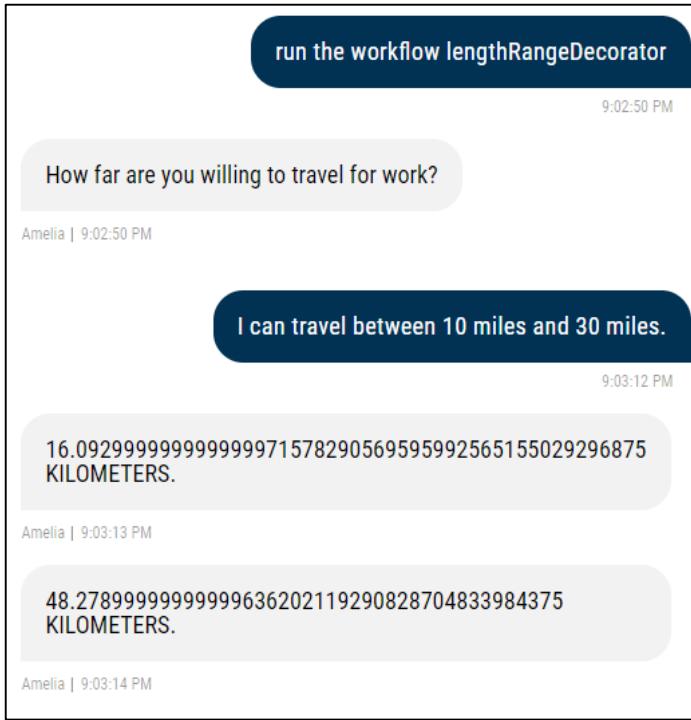
- `label()`
- `datumType()=> type of datum`
- `text()=> raw input`
- `value() => normalized value`
- `unit()`
  - Stored as metric
    - Will use Formatters to convert to Imperial as needed
    - e.g., `Formatters.LENGTH_IMPERIAL`



# Working with Datum - Range

- **Range datum**

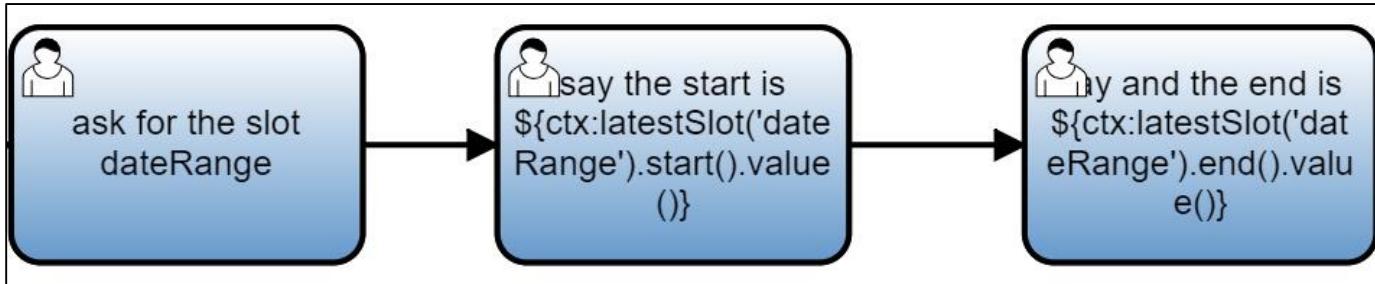
- `.start().value()`
- `.end().value()`
- `.start().unit()`
- `.end().unit()`
- `.value().hasLowerBound()=> range has start value`
- `.value().hasUpperBound()=> range has end value`
- `contains(Object value)`
  - Value can be Long, BigDecimal, LocalDate, LocalTime and ZonedDateTime
  - Checks if passed value is actually contained in range
- `containsAll(Object value):`
  - Value must be list of either Long, BigDecimal, LocalDate, LocalTime and ZonedDateTime
  - Checks if all passed values are contained in range



```
//contains and containsAll sample script
execution.setVariable('contains', contextService.latestSlot('integerRange')
    .value().contains(new Long(15)))

def list = []
list.add(new Long(15))
list.add(new Long(18))
list.add(new Long(19))
execution.setVariable('containsAll', contextService.latestSlot(
    'integerRange').value().containsAll(list))
```

# Activity



Timing: 10 minutes

Validation: Mind View Testing

## Datum

- Create an entity that uses a predefined datum type.
- Add that entity to your BPN using the ask for the slot task.
- Add a say task after this ask task that include the phrase “I got \${ctx:latestSlot(‘yourEntityName).value()}” to test to see if the value you enter is captured in this predefined datum entity.
- Optionally, include .unit() or .start().value()/end().value() if you are using a datum with these properties.

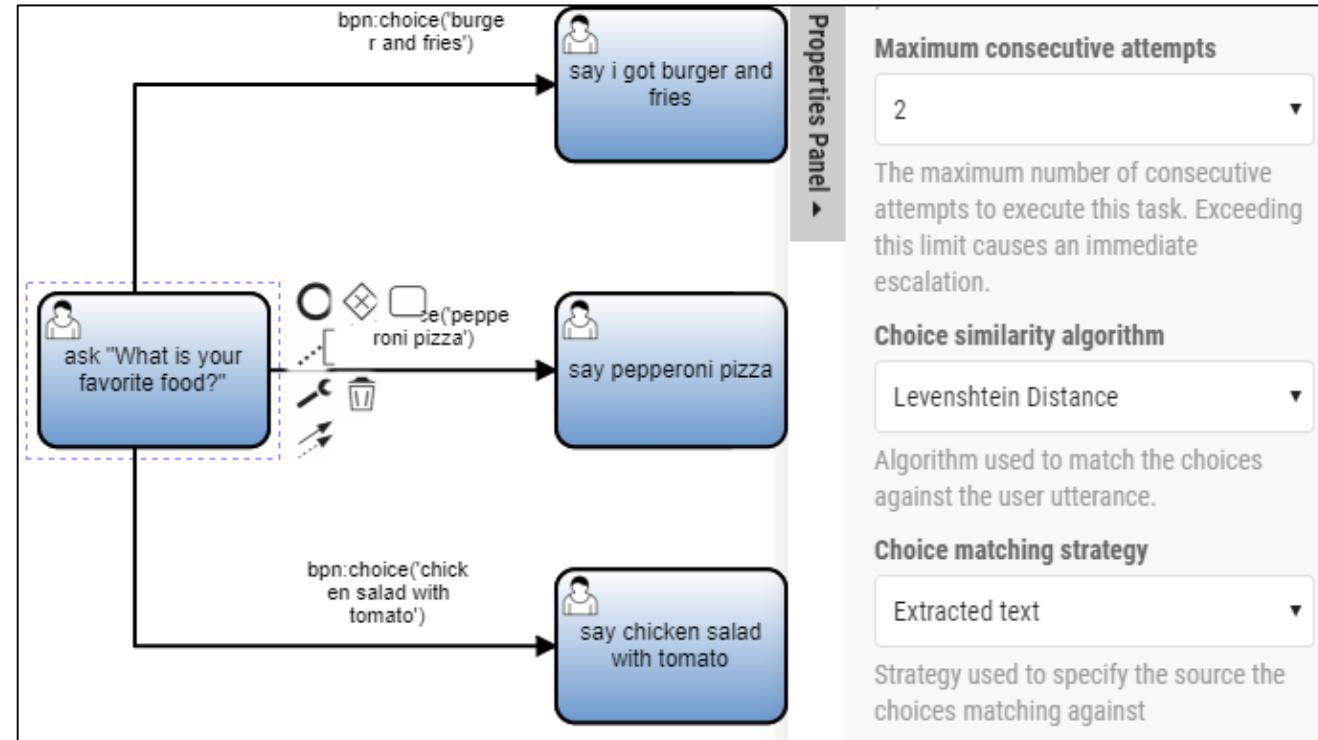
# Service Prefix – bpn:



# bpn: Prefix

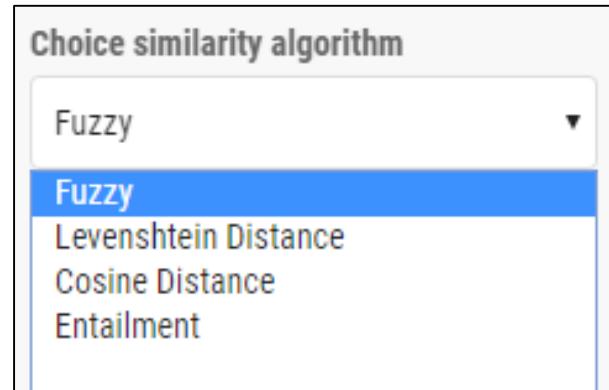
## bpn:choice(String...options)

- Works with choice similarity algorithm to determine whether an end user response to an ask task potentially matches a specific String value
- Specify String choices on edges
- Cannot include non-choice options
- Cannot include default flow



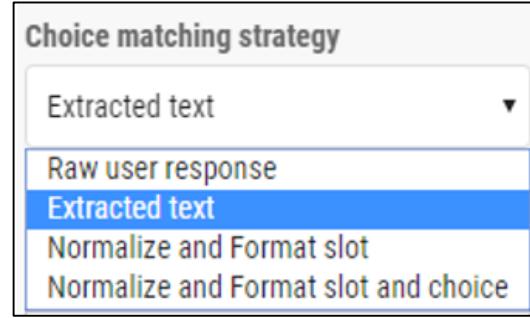
# Choice Similarity Algorithms

- Fuzzy (default) – approximate string matching
  - Find approximate substring matches inside given string
  - Find dictionary strings matching pattern approximately
  - Match measured in terms of number primitive operations to convert string to exact match
- Levenshtein Distance
  - Minimum number of single-character edits (insertions, deletions or substitutions) required to change one word into another
- Cosine Distance
  - Turn string into vectors
  - Calculate dot product and magnitude of vectors
  - Divide dot product vectors a & b by product of magnitude a & magnitude b
- Entailment
  - Distance based on likeness of meaning/semantic content as opposed syntactical representation



# Choice Handler Responses and Matching Strategies

- Only one option matches exactly -> proceed with matching option
- Only one option matches near-exactly -> proceed with matching option
- Only one option matches - answer assumed
  - "I assume you meant the answer to be closestAnswerPossibility. Is that alright?"
- Only one option matches - seek clarification
  - "Did you mean closestAnswerPossibility? Is that alright?"
- Multiple exact matches/near-exact matches
  - "Did you mean exactMatch1, exactMatch2, or nearExactMatch1?"
- Multiple assumed possible matches
  - "I assume you meant the answer to be answerChoice1 or answerChoice2. Correct?"
- Multiple possible matches - seek clarification
  - "Did you mean seekClarification1, seekClarification2, or seekClarification3?"
- Else: shows all available options
  - "I was expecting answers such as availableChoice1, availableChoice2 or availableChoice3. What is your choice?"



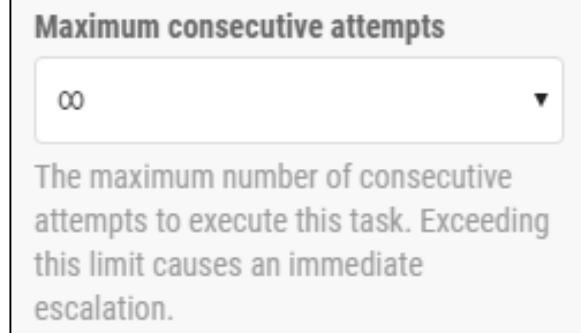
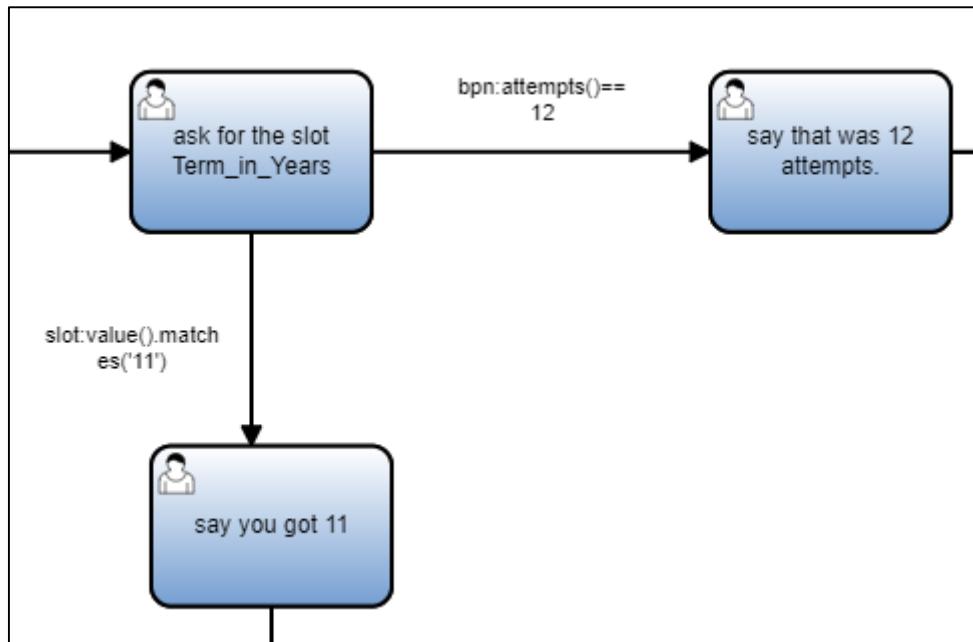
When using ask for the slot and entities, need to select a strategy for how matching should occur:

- Raw user response: Algorithm matches choices against raw user response
- Extracted text (default): Algorithm matches choices against extracted text (before normalization)
- Normalize and format slot only: Algorithm matches choices against normalized/formatted entity slot
- Normalize and format slot and choice: Algorithm normalizes/ formats each choice and entity slot before matching

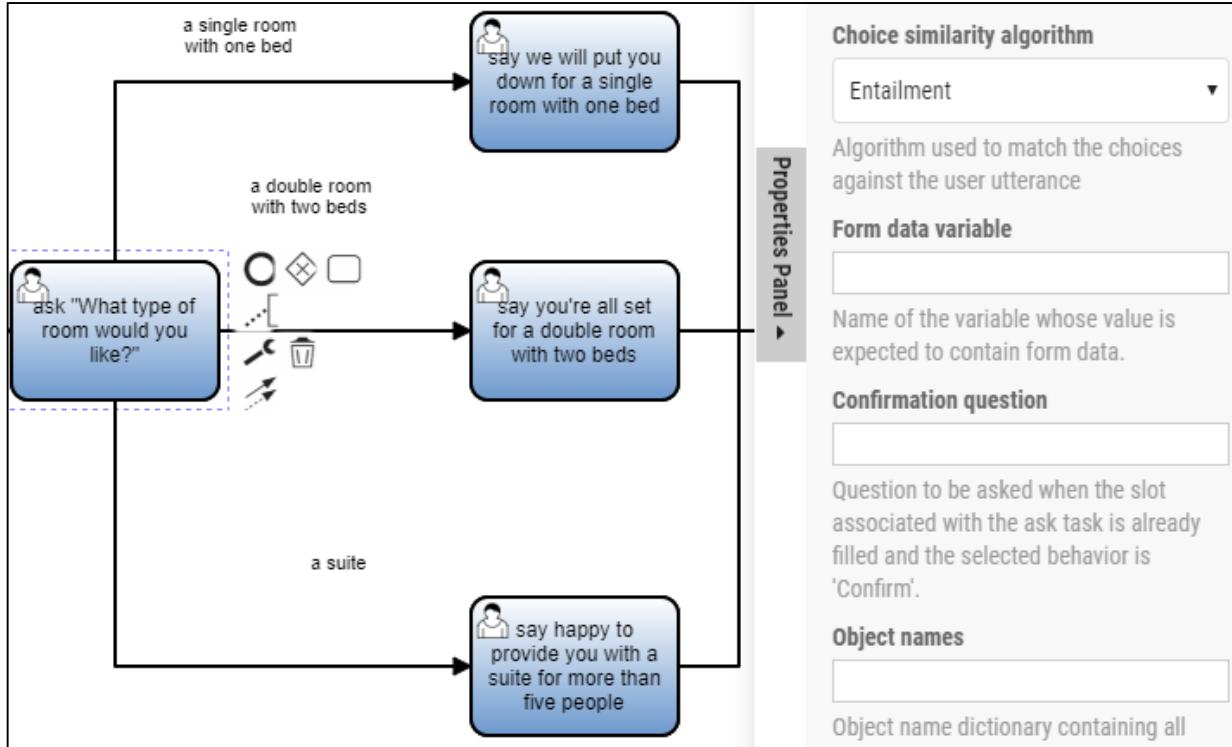
# bpn:attempts()

Returns number of attempts to execute a task

- Could be used with an ask task in lieu of Maximum consecutive attempts
  - Useful when there is a need to NOT escalate should the end user provide an invalid response



# Activity



## bpn:choice

- Test a bpn:choice() prefix and one of the similarity algorithms for your ask “<question>” or ask for the slot task.

Timing: 20 minutes

Validation: Mind View Testing

# BPN Version Control

---



# BPN Version Control

Processes      Process Knowledge      Script Library      Tabular Data      Content Manager

reserveARoomComplete

v9.0 | v8.1 v8.0 v7.1 v7.0

Save Deploy Undeploy Import Export Intents Entities

Entity username extracts and captures the name of the end user in an entity slot using the Person datum type

Validation of entity value determines the direction of the BPN workflow

Trigger the intent FAQ subsystem by asking if you can bring your pet with you to stay at the hotel

?N triggers sed on an utterance analyzed by an Intent model

say it's great to meet you

Properties

reserveARoomComplete

Status	Type
✓ deployed	Manual
new	Manual
undeployed	Manual
new	Manual
undeployed	Manual

v9.0 Brian Kuchta 06/18/2018 04:04:37 pm

v8.1 Brian Kuchta 06/10/2018 08:06:24 pm

v8.0 Brian Kuchta 06/10/2018 08:06:27 pm

v7.1 Brian Kuchta 05/25/2018 09:42:51 am

v7.0 Brian Kuchta 05/25/2018 09:42:53 am

# Amelia Trainer: Additional Tools

---



# Export Intents and Entities

**Intents**

Intent Name	Description	Actions
bookLocalAttractions	Provides information and helps with booking of local attractions	
cancelModifyReservation	Allows end user to cancel/modify reservation - launches as stochastic BPN	
check_in_timeBPN	BPN that responds as an FAQ	
check_in_timeBPNHTML	BPN that triggers FAQ with HTML answer	
checkInTimeIntentFAQ	Intent FAQ	
checkInTimeIntentFAQHTML	Intent FAQ with HTML	
contextServiceIntentScripts	Test intent for Context Service Intent Scripting Services	
hotel_more_infoBPN	BPN that responds as an FAQ	
hotel_more_infoBPNHTML	BPN that triggers FAQ with HTML answer	
hotelAmenitiesIntentFAQ		

< > Page 1 of 3 -- 22 total Intents

**Bulk Actions**  Select All  
 Delete selected  
 Export selected  
 Export all

**Entities**

Name	Type	Description	Actions
1HouseSize	INTEGER	parent entity for bathrooms and bedrooms	
age	AGE	Use with qty prefix	
age_range	AGE_RANGE	datum test	
airport	AIRPORT	datum test	
allHotelDates	DATE	parent entity to checkInDate and CheckOutDate - Used in reserveARoom	
area	AREA	datum test	
area_range	AREA_RANGE	datum test	
average_monthly_hours	INTEGER	Used for Analytics and more	
bathrooms	INTEGER	Child to 1HouseSize	
bedrooms	INTEGER	Child to 1HouseSize	

< > Page 1 of 10 -- 91 total entities

**Actions**  Select All  
 Delete selected  
 Export selected  
 Export all

# Export Annotated Data Sets

Annotation Framework

Intents Entities **Annotate**

1. Load / Learn 2. **Annotate** 3. Train 4. Export

62 total utterances Auto Annotate Train

checkInCheckOut Save As

Intent Entities

checkInDate 04/19 ×  
checkOutDate 04/21 ×

checkInDate 05/08/2018 ×  
checkOutDate 05/09/2018 ×

checkInDate apr 2 ×  
checkOutDate apr 5 ×

checkInDate 10/12/17 ×  
checkOutDate 10/14/17 ×

A reservation is needed from apr 2 to apr 5.

Any chance you have a room for me from 10/12/17 to 10/14/17?

The screenshot shows the Annotation Framework interface with a workflow step 2 (Annotate) highlighted. The 'checkInCheckOut' button in the toolbar is circled in red. Below, a list of annotated utterances is displayed with their corresponding intent and entities.

- Exports with annotation information as JSON
- Can be imported into another domain/instance

```
{"text":"04/19 -  
04/21","tokenizedText":null,"originalText":null,"intents":[],"spa  
nlessEntities":[],"speaker":"","slots":[{"slotName":"checkInDat  
e","slotValue":"04/19","startIndex":0,"endIndex":5},{"slotNam  
e":"checkOutDate","slotValue":"04/21","startIndex":8,"endInd  
ex":13}],"id":0}, {"text":"05/08/2018 -  
05/09/2018","tokenizedText":null,"originalText":null,"intents":[]  
[],"spanlessEntities":[],"speaker":"","slots":[{"slotName":"check  
InDate","slotValue":"05/08/2018","startIndex":0,"endIndex":10},  
{"slotName":"checkOutDate","slotValue":"05/09/2018","start  
Index":11,"endIndex":21}],"id":1}, {"text":"A reservation is  
needed from apr 2 to apr  
5.", "tokenizedText":null,"originalText":null,"intents":[]  
[],"spanlessEntities":[],"speaker":"","slots":[{"slotName":"checkIn  
Date","slotValue":"apr 2","startIndex":0,"endIndex":5},  
 {"slotName":"checkOutDate","slotValue":"apr 5","startIndex":11,"endIndex":21}],"id":2}, {"text":"Any chance you have a room for me from 10/12/17 to 10/14/17?  
","tokenizedText":null,"originalText":null,"intents":[]  
[],"spanlessEntities":[],"speaker":"","slots":[{"slotName":"checkIn  
Date","slotValue":"10/12/17","startIndex":0,"endIndex":10},  
 {"slotName":"checkOutDate","slotValue":"10/14/17","startIndex":11,"endIndex":21}],"id":3}
```

# Annotation Framework – Load Existing

Annotation Framework

Intents Entities **Annotate** Dashboard

1. Load / Learn ▾ 2. Annotate ▾ 3. Train ▾ 4. Export ▾

Load New Load Existing Learn

Load Utterances **Load**

**Load Existing**

Load New File Import a file with a selected format. Max Size: 2MB

Plain Text User-Agent Dialog Annotated Document

Drag and Drop your file in this area or [Browse](#) your computer

Annotation Framework

Intents Entities **Annotate**

1. Load / Learn ▾ 2. Annotate ▾ 3. Train ▾ 4. Export ▾

Load New Load Existing Learn

Load Existing File Please choose an existing document from the table, click Load when ready

	intentChartTestSet03252018	Brian Kuchta	Brian Kuchta	3/25/2018, 4:53:17 PM	X
	bkVacationNegative	Brian Kuchta	Brian Kuchta	3/23/2018, 4:11:59 PM	X
	bkBookVacation	Brian Kuchta	Brian Kuchta	3/23/2018, 4:11:25 PM	X
	reserveARoomNegativeValidationSet03222018	Brian Kuchta	Brian Kuchta	3/22/2018, 4:23:51 PM	X
	punctuationDataSetIntentTest03222018	Brian Kuchta	Brian Kuchta	3/22/2018, 3:47:57 PM	X
	hotelComplaintsMultiFeatureEntity03222018V2	Brian Kuchta	Brian Kuchta	3/22/2018, 8:40:13 AM	X
	reserveRoomValidationTest03212018_3.0_GOAL	Brian Kuchta	Brian Kuchta	3/21/2018, 8:33:53 AM	X
	reserveRoomValidationDataSet03212018	Brian Kuchta	Brian Kuchta	3/21/2018, 8:23:40 AM	X
	creditCardDataSet03092018	Brian Kuchta	Brian Kuchta	3/9/2018, 2:16:08 PM	X
	colorCustomFeatureTemplateEntityExample03072018	Brian Kuchta	Brian Kuchta	3/7/2018, 3:15:07 PM	X

**IP**SOFT

# Annotation Framework – Learn

1. Load conversations with responses from specific subsystems

The screenshot shows the 'Annotation Framework' interface with a top navigation bar featuring 'Intents', 'Entities', 'Annotate' (which is highlighted in blue), and 'Dashboard'. Below the navigation is a horizontal workflow bar with four steps: 1. Load / Learn (selected), 2. Annotate, 3. Train, and 4. Export. A vertical sidebar on the right lists 'Load Utterances', 'Load Existing', 'Load from file', 'Learn', 'Train', 'Queue', 'Export', and 'Chart'. The main area is titled 'Annotation Framework' and displays the 'Load New' tab. It includes a 'Load New File' section with a 'Plain Text' option selected, a file upload area with a cloud icon and instructions to 'Drag and Drop your file in this area or Browse your computer', and a 'Learn' button.

# Learn – Review Missed Conversations

2. Review missed conversations
3. Select any that have data to be included in intent model
4. Learn utterances

Annotation Framework

Intents Entities Predict **Annotate**

1. Load / Learn 2. Annotate 3. Train 4. Export

Learn Conversations

Select one or more missed conversations

Conversations before:

1 Days ▾  
2 Max

Load utterances

All Utterances

**Hi Firstname, how can I help you today?**

Name	Length	Modified
Amelia	8	
entitySimpleDatumProperties	User	7
I'm not sure about that one.	Amelia	6
run the workflow entitySimpleDatumProperties	User	5
On what date should your guest Wi-Fi access begin?	Amelia	4
tomorrow	User	3
Please hold on while I contact an agent to help you.	Amelia	2
This conversation has been closed.	Amelia	1

**2**

**3**

**4**

Delete selected

Mark processed

Learn utterances

# Learn – Annotate Misclassified Utterances

5. Annotate any utterances to be included in an intent model
6. Upgrade the intent model with the new training data

Annotation Framework

Intents Entities **Annotate** Dashboard

1. Load / Learn 2. Annotate 3. Train 4. Export

Hello!

i want to change my hotel reservation

Welcome to the front desk.

Happy to help you make a change to your reservation.

Can I please get your confirmation number?

678678678

5

Select an intent

bookLocalAttractions	Provides information and helps with booking of local attractions
cancelModifyReservation	Allows end user to cancel/modify reservation - launches as stochastic BPN
check_in_time	Intent FAQ
contextServiceIntentScripts	Test intent for Context Service Intent Scripting Services
epm orderRoomService	Episodic memory test
epm reserveARoom	Episodic memory test
hotel_amenities	Intent FAQ
hotel_more_info	Intent FAQ

Train Models X

Select Type

Intent Classifier

Select from existing

6

- autoInsuranceMeta
- autoInsuranceMeta
- billDiscrepancyMeta
- guestWiFiMeta
- hotelCombinedIntentsDNN
- hotelCombinedIntentsLR
- hotelCombinedIntentsLSVM
- hotelCombinedIntentsMetaClassifier
- hotelCombinedIntentsPA

# Annotation Framework – Auto Annotate

Annotation Framework

1. Load / Learn 2. Annotate 3. Train 4. Export

10 total utterances

Auto Annotate Train roomNumberEntity Save As

Intents Entities

Give it to me in rm 443  
I have to have it sent to rm 321  
I want it in room 122  
I'm in room number 223.  
My room number is 646  
Room 556  
The location is 213  
The order should go to room 334.

Auto Annotate

Datum Types

- Locations
- Quantities
- Miscellaneous
- Number/Date Ranges
- Quantity Ranges

Include named entities

Model Annotate

Intents

Select intent model

Entities

Select entity model

Clear selected models

Annotate

Use the predefined entities, an entity model, or an intent model to auto annotate entities and/or intents within new example utterances

Intents Entities

2. Annotate 3. Train 4. Export

Auto Annotate Train roomNumberEntity Save As

Number 443 ×  
Integer 443 ×  
Number 321 ×  
Integer 321 ×  
orderRoomService ×  
Number 122 ×  
Integer 122 ×

IP SOFT

# Upgrading Intent and Entity Models

## Intent Model Upgrade

Train Models

**guestWifiMeta**  
Intent Classifier  
Revision 1.0 Ready

Save Train

Datasets  
 Include all intents ?

Intents  
guestWifi x

Training datasets  
negativeGuestWifi x

Add fallback examples ?

Evaluation

Algorithm

Train Models

**colorsEntityOnlyDNN**  
Entity Tagger  
Revision 2.0 Ready

Save Train

Datasets  
 Include all entities ?

Entities  
colors x

Training datasets  
Add training data

Evaluation

Algorithm

## Entity Model Upgrade

Train Models

**checkInCheckOut**  
Role Entity Classifier  
Revision 1.0 Deployed

Save Train

Datasets  
Parent entity  
allHotelDates

Training datasets  
checkInCheckOut x

Evaluation

Algorithm

Train Models

**roomType**  
Spanless Entity Classifier  
Revision 1.0 Deployed

Save Train

Datasets  
Spanless entity  
roomType

Training datasets  
Add training data

Add fallback examples ?

Evaluation

Algorithm

# Questions



# AMELIA V3

Thank You



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