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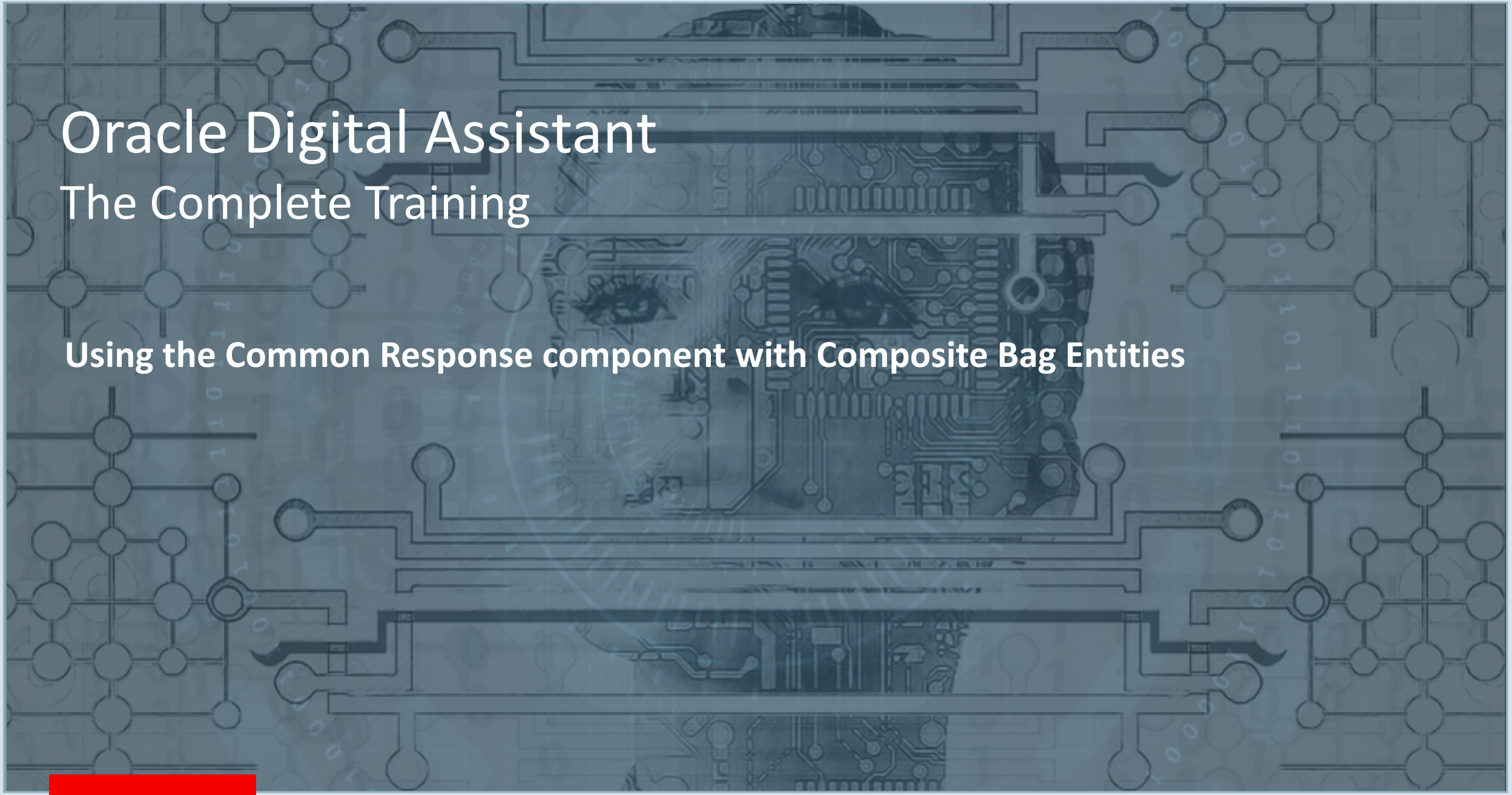
Oracle Digital Assistant

The Complete Training

Using the Common Response component with Composite Bag Entities



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Topic agenda

1. Technology doesn't speak to everyone
2. System.ResolveEntities vs. System.CommonResponse
3. Using composite bag entities
4. User interface customization
5. Providing help

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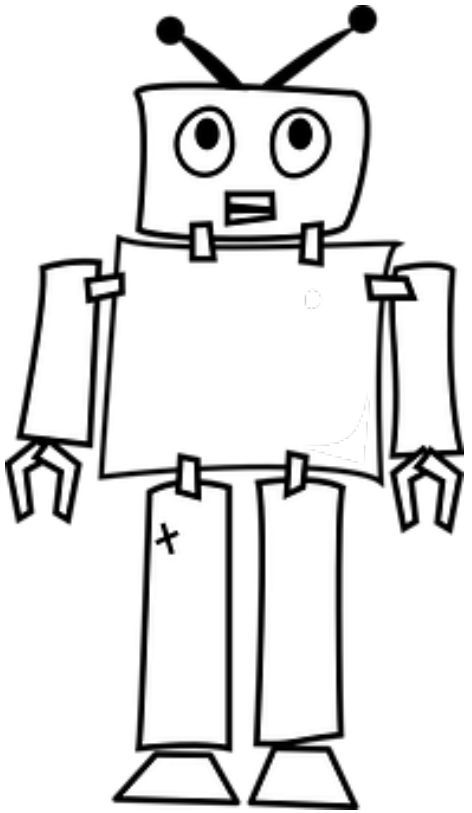
The business behind the problem

- Intents and entities are technical terms that don't speak to business users
- Chatbots solve business problems, not technical problems
- Business understands business related objects and abstraction
  - Order, customer, meeting, product
- Composite bag entities model business objects
  - Business domain object
  - Items are resolved together
  - No need to understand dialog flow
  - Declarative configuration

Composite bag entities not only **simplify conversational design** for a skill, they also **simplify communication** between IT and business



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Two system components, one goal

- Simplification
- System.ResolveEntities and System.CommonResponse
  - Generate user interfaces for composite entity bag items
  - Resolve composite bag entities without dialog flows
  - Remove complexity from the dialog flow design
- Composite bag is the single point of truth for
  - Validation
  - error handling
  - prompts
  - message extraction

System.ResolveEntities vs. System.CommonResponse

ResolveEntities

- Resolves all entities effortlessly
- Renders lists and input text
- Allows navigation to dialog flow state after entity gets resolved
- Supports pagination
- Supports limiting the number of failed user value input attempts

CommonResponse

- Verbose OBotML
  - Requires BotML, and Apache FreeMarker skills
- Feature parity with ResolveEntities
- Allows UI customization
  - Rich UI
- Supports channel specific UI rendering

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Composite bag at runtime

Default UI using System.ResolveEntities

Configuration

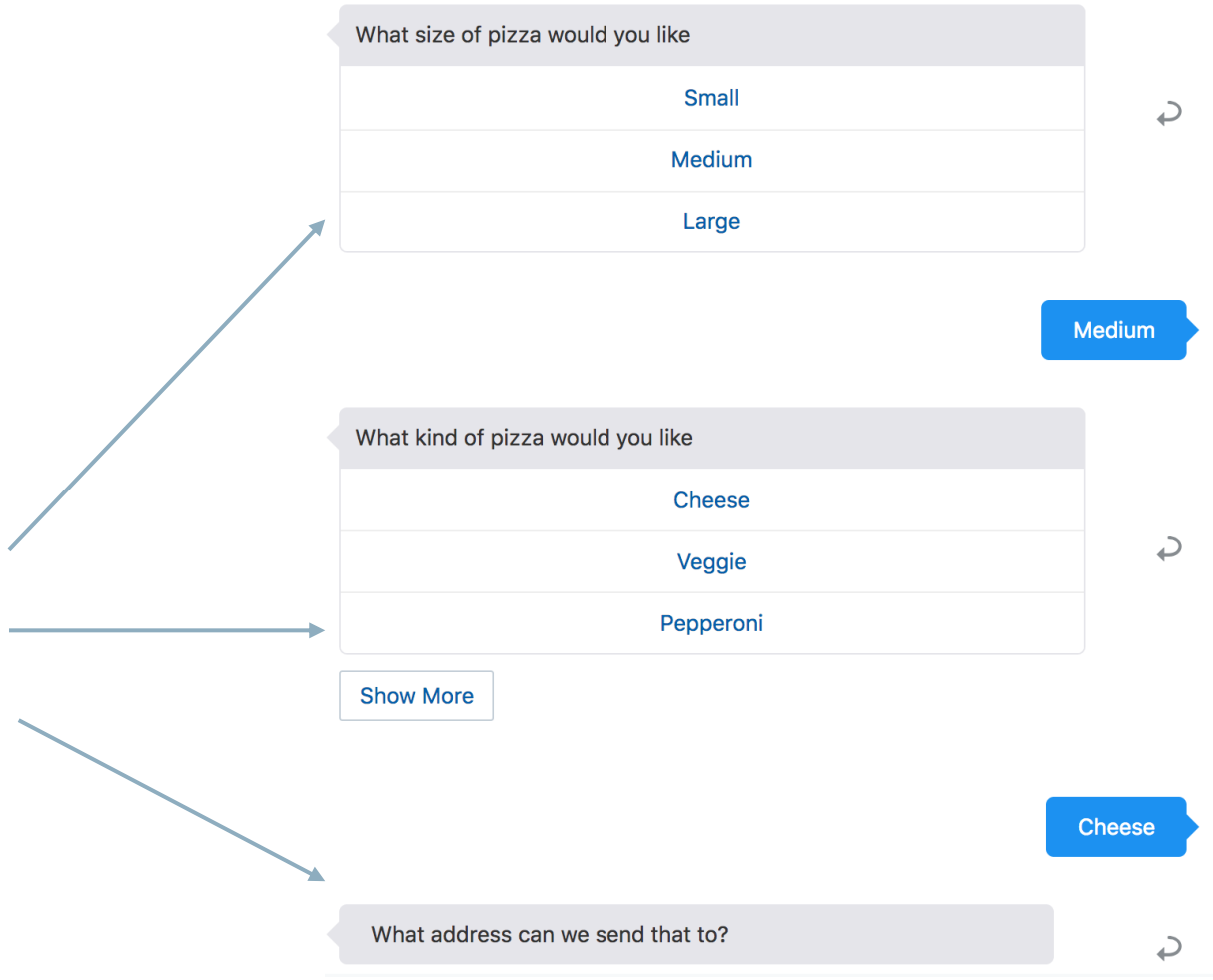
Type

Composite Bag

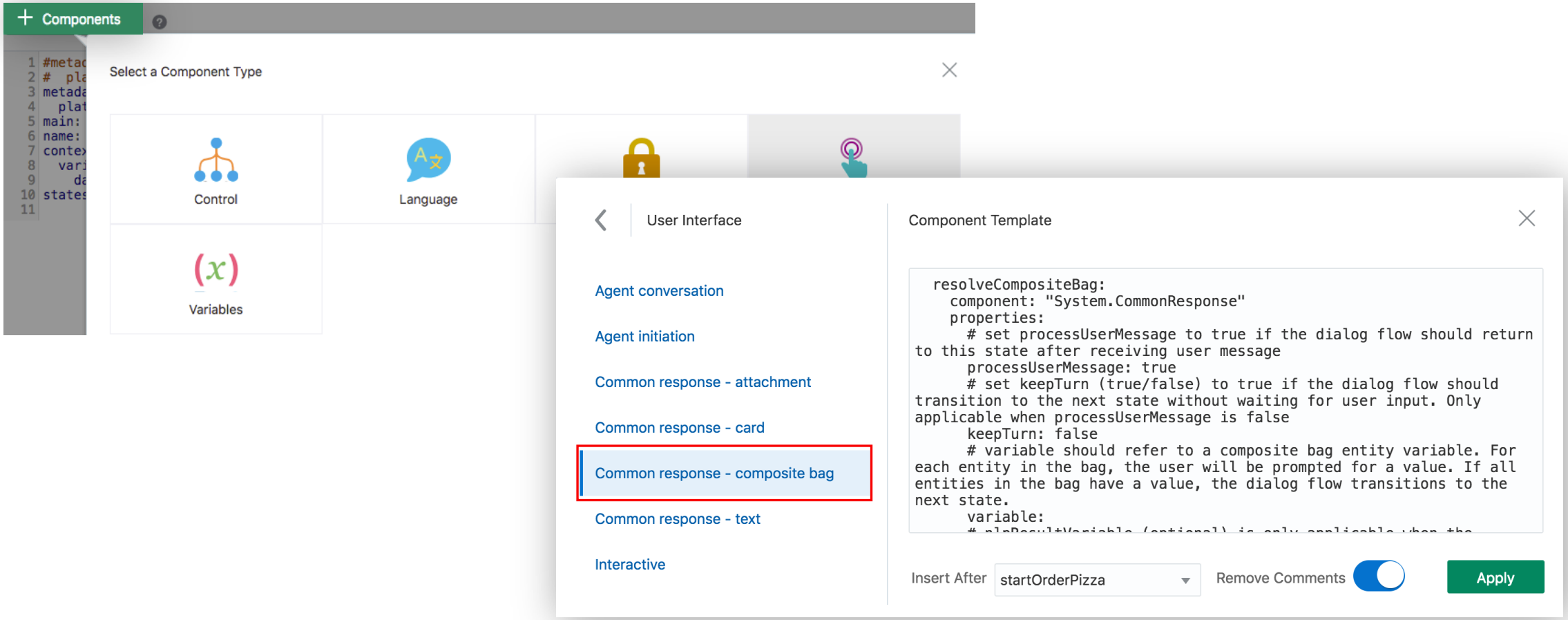
Bag Items

+ Bag Item

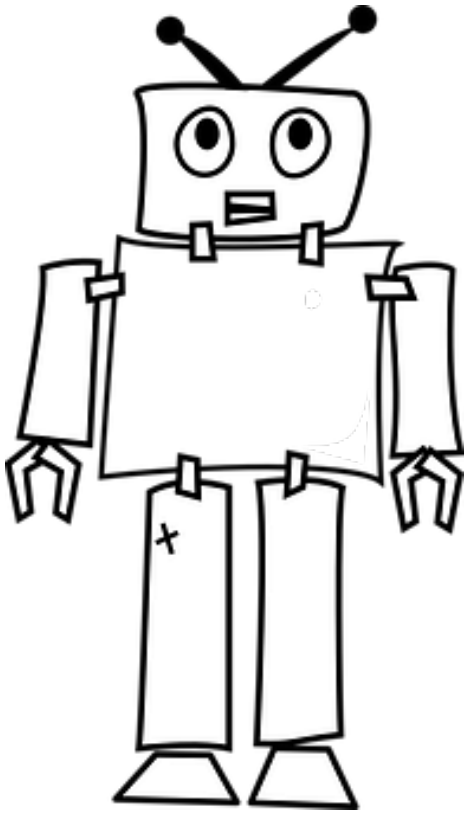
Name	Type	Entity Name
PizzaSize	ENTITY	PizzaSize
PizzaTopping	ENTITY	PizzaTopping
DeliveryAddress	ENTITY	ADDRESS
DeliveryTime	ENTITY	TIME
PizzaDough	ENTITY	PizzaDough



Common response component template



Developer has full access to the entity bag item that is processed at a time



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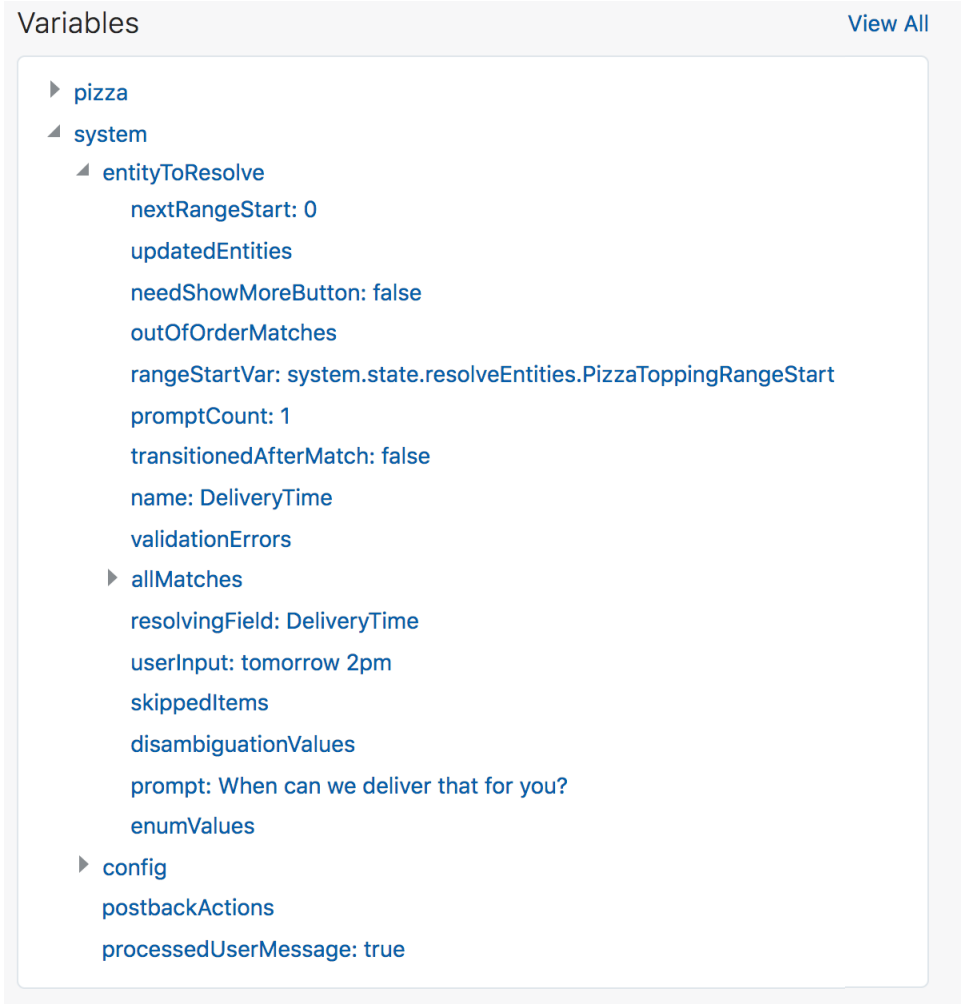
system.entityToResolve variable

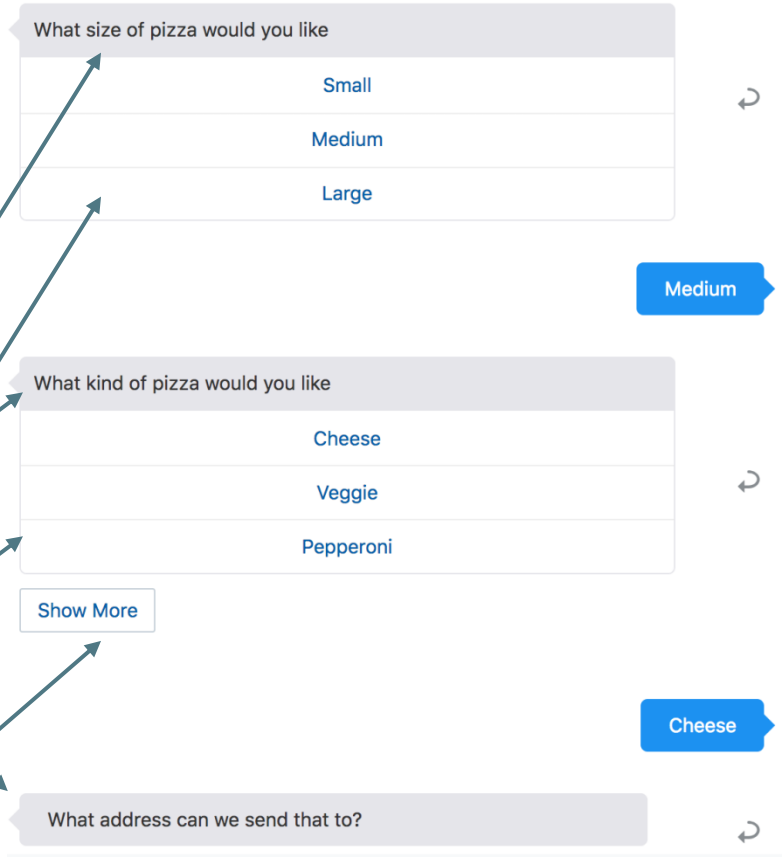
- System variable exposing information about the current entity to resolve
  - ${system.entityToResolve.value.<attribute>}
- Used in Common Response component to
  - Determine when to show list if values
  - Conditionally show/hide buttons and response items
- Displayed in skill bot conversation tester
- Commonly used attributes
  - Name, prompt, enumValues, needShowMoreButton rangeStartVar, nextRangeStartVar



Composite bag at runtime

Same UI as ResolveEntities but using CommonResponse

```
resolveEntities:
  component: "System.CommonResponse"
  properties:
    processUserMessage: true
    keepTurn: false
    variable: "pizza"
    nlpResultVariable: "iResult"
    cancelPolicy: "immediate"
    transitionAfterMatch: "false"
    maxPrompts: 3
    metadata:
      responseItems:
      - type: "text"
        text: "${system.entityToResolve.value.prompt}"
        actions:
        - label: "${enumValue}"
          type: "postback"
          iteratorVariable: "system.entityToResolve.value.enumValues"
          payload:
            variables:
              pizza: "${enumValue}"
      globalActions:
      - label: "Show More"
        type: "postback"
        visible:
          expression: "${system.entityToResolve.value.needShowMoreButton}"
        payload:
          variables:
            ${system.entityToResolve.value.rangeStartVar}: "${system.entityToResolve.value.nextRangeStart}"
  transitions:
```



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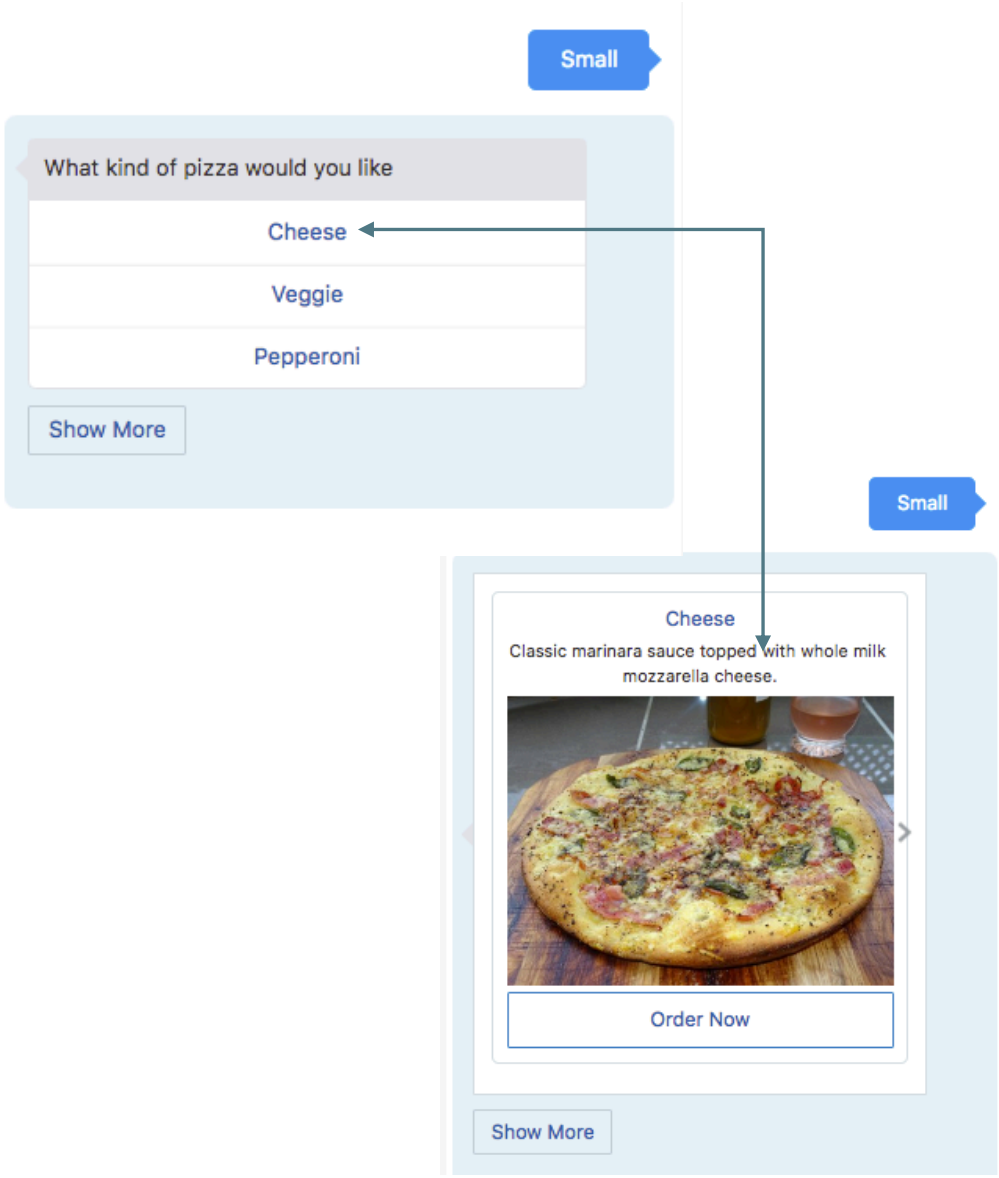
User interface customization

- Response items can be shown or hidden dependent on entity to render
- Apache FreeMarker expressions can be used to reference variables and resource bundles



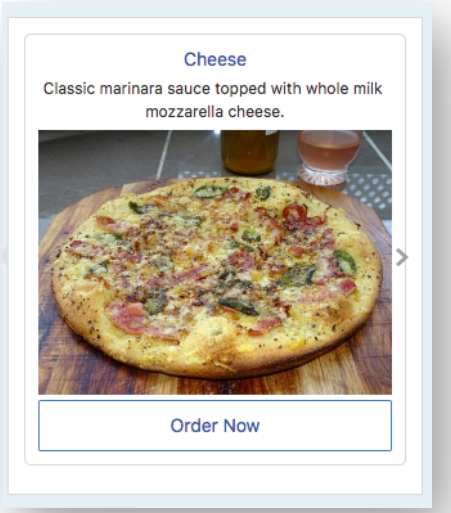
Example: building content in context variable

- You can add JSON objects to context variables
  - Apache FreeMarker
  - Custom component
- pizzaCardInfo has pizza names defined as object attributes
- Attributes are accessible from expression
  - ${pizzaCardInfo.value[pizza_name]}

```
loadPizzaCardInfo:
  component: "System.SetVariable"
  properties:
    variable: "pizzaCardInfo"
    value:
      CHEESE:
        description: "Classic marinara sauce topped with whole milk mozzarella cheese."
        image: "https://cdn.pixabay.com/photo/2017/09/03/10/35/pizza-2709845__340.jpg"
      PEPPERONI:
        description: "Classic marinara sauce with authentic old-world style pepperoni."
        image: "https://cdn.pixabay.com/photo/2017/08/02/12/38/pepperoni-2571392__340.jpg"
      MEAT:
        description: "Classic marinara sauce, authentic old-world pepperoni, all-natural\
          \ Italian sausage, slow-roasted ham, hardwood smoked bacon, seasoned pork\
          \ and beef."
        image: "https://cdn.pixabay.com/photo/2017/07/22/22/51/big-2530144__340.jpg"
      SUPREME:
        description: "Classic marinara sauce, authentic old-world pepperoni, seasoned\
          \ pork, beef, fresh mushrooms, fresh green bell peppers and fresh red onions."
        image: "https://cdn.pixabay.com/photo/2017/07/22/22/57/pizza-2530169__340.jpg"
      VEGGIE:
        description: "Premium crushed tomato sauce topped with green peppers, red\
          \ onions, mushrooms, Roma tomatoes and roasted spinach with our Hut Favorite\
          \ on the crust."
        image: "https://cdn.pixabay.com/photo/2017/07/22/22/57/pizza-2530169__340.jpg"
      HAWAIIAN:
        description: "Grilled chicken, ham, pineapple and green bell peppers."
        image: "https://cdn.pixabay.com/photo/2017/07/22/22/51/big-2530144__340.jpg"
      BACON:
        description: "Garlic Parmesan sauce topped with bacon, mushrooms and roasted\
          \ spinach with a salted pretzel crust."
        image: "https://cdn.pixabay.com/photo/2017/09/03/10/35/pizza-2709845__340.jpg"
  transitions:
    next: "intent"
```

Example: referencing external content from component

```
metadata:
  responseItems:
  - type: "text"
    text: "${system.entityToResolve.value.prompt}"
    visible:
      entitiesToResolve:
        exclude: "PizzaType"
    actions:
    - label: "${enumValue}"
      type: "postback"
      iteratorVariable: "system.entityToResolve.value.enumValues"
      payload:
        variables:
          pizza: "${enumValue}"
  - type: "cards"
    cardLayout: "horizontal"
    visible:
      entitiesToResolve:
        include: "PizzaType"
    cards:
    - title: "${enumValue}"
      description: "<#if pizzaCardInfo.value[enumValue?upper_case]?has_content>${pizzaCardInfo.value[enumValue?upper_case].description}</#if>"
      imageUrl: "<#if pizzaCardInfo.value[enumValue?upper_case]?has_content>${pizzaCardInfo.value[enumValue?upper_case].image}</#if>"
      iteratorVariable: "system.entityToResolve.value.enumValues"
      actions:
      - label: "Order Now"
        type: "postback"
        payload:
          variables:
            pizza: "${enumValue}"
```



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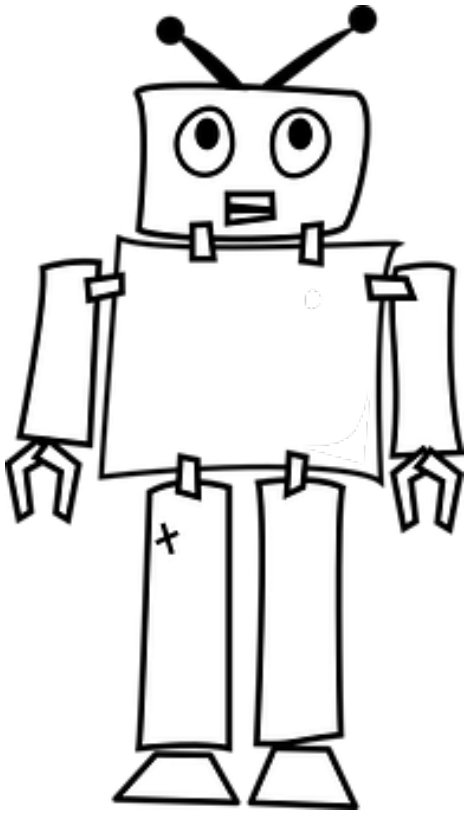
Users who do not enter valid data **may need help**.



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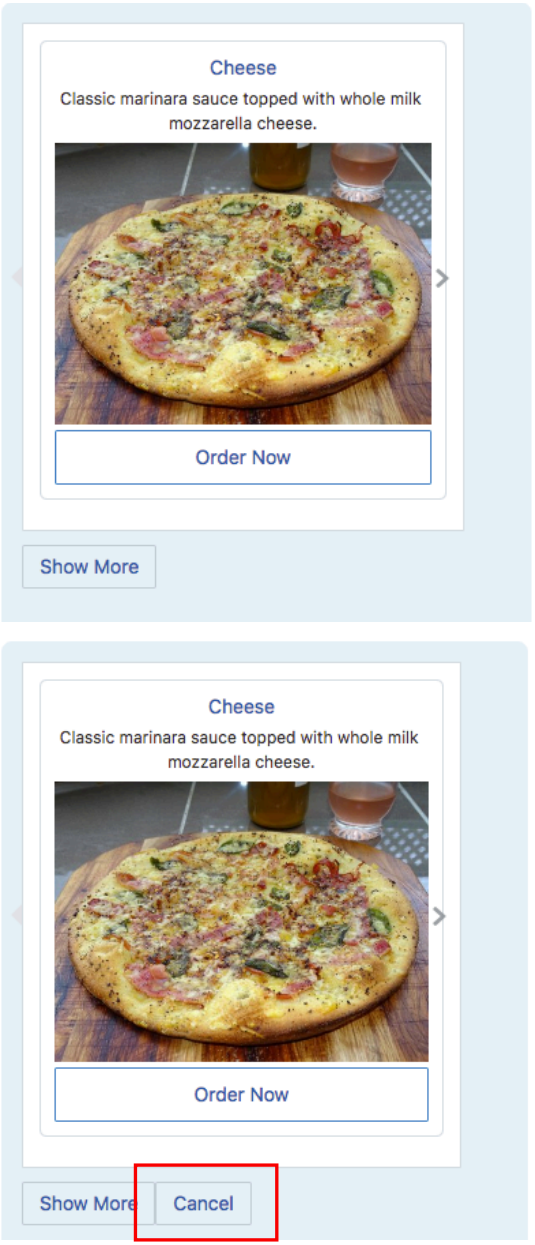
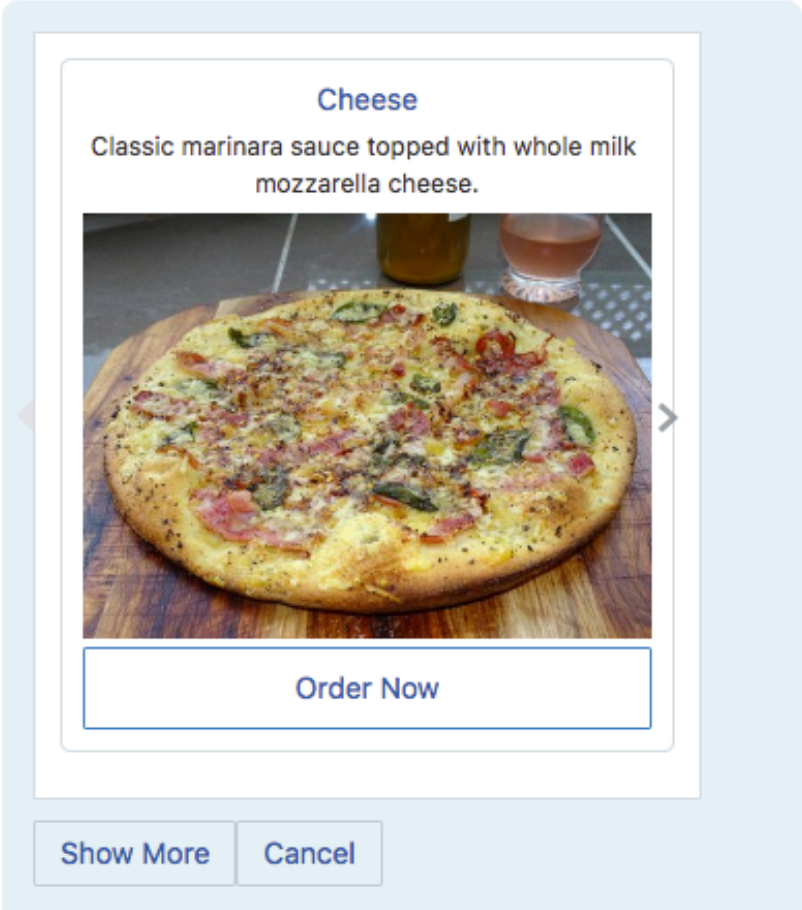
Providing help

- Composite bag entities ca show alternative prompts in case of invalid data input
- CommonResponse component can also display action items
  - Cancel button
  - Help button for written help or human agent support
- No coding required!



Display cancel button after failed data input

```
      cards:
      - title: "${enumValue}"
        description: "<#if pizzaCardInfo.value[enumValue?upper_cas
        imageUrl: "<#if pizzaCardInfo.value[enumValue?upper_case]?
        iteratorVariable: "system.entityToResolve.value.enumValues
        actions:
        - label: "Order Now"
          type: "postback"
          payload:
            variables:
              pizza: "${enumValue}"
    globalActions:
    - label: "Show More"
      type: "postback"
      visible:
        expression: "${system.entityToResolve.value.needShowMoreBu
      payload:
        variables:
          ${system.entityToResolve.value.rangeStartVar}: "${system
    - label: "Cancel"
      type: "postback"
      visible:
        onInvalidUserInput: true
      payload:
        action: "cancel"
transitions:
  next: "setPizzaDough"
  actions:
    cancel: "maxError"
```



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