Introducing Parameters for Shortcuts

Ari Weinstein, Shortcuts Engineering
Roman Efimov, Shortcuts Engineering
Suggestions
Word of the Day

Merriam-Webster's Word of the Day is 'commemorate.' The short definition is "to mark by some ceremony or observation."

commemorate
verb | kuh-MEHR-uh-ray1

to mark by some ceremony or observation

TAP TO LEARN MORE
New in iOS 13
New in iOS 13

Shortcuts app built-in to iOS
New in iOS 13

Shortcuts app built-in to iOS
Parameters enable conversational shortcuts
New in iOS 13

Shortcuts app built-in to iOS

Parameters enable conversational shortcuts

Users can customize the behavior of your shortcuts
New in iOS 13

Shortcuts app built-in to iOS

Parameters enable conversational shortcuts

Users can customize the behavior of your shortcuts

Updated Add to Siri
Add to Instacart
Bananas
Tap to Edit
Organic bananas
Organic bananas
Watch baseball
The Phillies aren't playing right now. Watch one of the following from the previous game?

- Live Stream
- Archive Game
- Game Recap
- Condensed Game
- Game Highlights
Automation
Have your devices react to changes in conditions.

Personal

When I arrive at Work
Set Do Not Disturb

When my wake-up alarm is stopped
Control My Home, Set Playback Destination, and Play Podcast

When I connect to CarPlay
Get Upcoming Events and Show Directions
Gallery

Search

Shortcuts for Accessibility

Shortcuts from Your Apps

Order 1 Clam Chowder
Get a tasty soup in minutes

Add “Do laundry” to Reminders

Add to Instacart
Add item to grocery list

Great Shortcuts for Siri
Add these shortcuts to Siri to get things done with your voice.

See All

My Shortcuts
Automation
Gallery
Order Soup

Order 1 Clam Chowder

Show More
Order Soup

SOUP CHEF

Order 1 Clam Chowder

Show More

REMINDERS

Add Pick up soup! to To-Do with Alert At Time ✨Pickup Time

Show More

+
Add to Siri
Add to Siri

Add a custom phrase Siri can use to tell Soup Chef to run this shortcut.

When I say:
Soup Time

Do:
😊 Order Soup

Add to Siri
Order 1 Clam Chowder
Shortcut customization
Shortcut customization
Parameter resolution
Shortcut customization

Parameter resolution

Related parameters
Shortcut customization
Parameter resolution
Related parameters
Dynamic options
Shortcut customization
Parameter resolution
Related parameters
Dynamic options
Outputs
Shortcut Customization
Custom Intent

Category: **Order**
Title: Order Soup
Description: Order a soup
Default Image: chicken_noodle_soup
Confirmation: User confirmation required

Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Display Name</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>soup</td>
<td></td>
<td>Soup</td>
</tr>
<tr>
<td>quantity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>toppings</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Shortcuts app

Intent is user-configurable

Suggestions
### Parameters

<table>
<thead>
<tr>
<th>Type</th>
<th>Display Name</th>
<th>User-facing</th>
<th>Dynamic Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>String</td>
<td></td>
<td></td>
<td>Valid values are provided dynamically</td>
</tr>
<tr>
<td>Array</td>
<td></td>
<td></td>
<td>Supports multiple values</td>
</tr>
<tr>
<td></td>
<td>User can supply value in Siri and Shortcuts app</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Input

- Default Value
- Multiline: Displays multiple lines of editable text

### Keyboard

- Capitalization: None
- Autocorrect: Disable autocorrect
- Smart Quotes: Disable smart quotes
- Smart Dashes: Disable smart dashes

### Siri Dialog

### Shortcuts app
Custom Intent

Category: Order
Title: Order Soup
Description: Order a soup
Default Image: chicken_noodle_soup

Display Name: 
Type: Soup
Array: Supports multiple values
User-facing: User can supply value in Siri and Shortcuts app

Shortcuts app

Intent is user-configurable
Define how this Intent appears in the Shortcuts app and Add to Siri.

Suggestions
Soup
Display Name: Soup
Type: Soup
Array: Supports multiple values
User-facing: User can supply value in Siri and Shortcuts app
CUSTOM INTENTS

OrderSoup

Category: Order
Title: Order Soup
Description: Order a soup
Default Image: chicken_noodle_soup
Confirmation: User confirmation required

Parameters

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<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>E soup</td>
<td>Soup</td>
<td></td>
</tr>
<tr>
<td>N quantity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T toppings</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

User-facing: User can supply value in Siri and Shortcuts app

Shortcuts app

- Intent is user-configurable

Suggestions
Intent is user-configurable

Define how this intent appears in the Shortcuts app and Add to Siri.
Intent is user-configurable

Define how this intent appears in the Shortcuts app and Add to Siri.
Summary

Order quantity soup

Parameters not included in the summary will be available to the

Preview

APP NAME

Order quantity soup

More Options

Toppings
Order Soup

Order 1  Clam Chowder

Show More
Parameter Resolution
Lifecycle of an Intent

- Confirm
- Handle
Lifecycle of an Intent

- Confirm
- Handle

NEW
Lifecycle of an Intent

1. Resolve
2. Confirm
3. Handle
Lifecycle of an Intent

Resolve

Order Soup
Tap to Edit

Which soup do you want? We have 3 specials today.

- Clam Chowder
- Tomato Soup
- Chicken Noodle Soup
Lifecycle of an Intent

Resolve

- Resolve Soup
  - success
- Resolve Quantity

How many soups do you want to order?
Lifecycle of an Intent

Resolve

Resolve Soup

success

Resolve Quantity

success

Resolve Store Location
Lifecycle of an Intent

Confirm

Resolve Soup

Confirm

Ready to order?

Tomato Soup
1 @ $2.95
Pickup from 7401 S Lewis Ave
Total: $2.95

Cancel  Order
Lifecycle of an Intent

Handle

Resolve Soup

Confirm

Handle

OK. Ordering. Your total is $4.55. Your Tomato Soup order will be ready in 10 minutes.
public class OrderSoupIntent: INIntent {
    public var items: [INObject]?
    public var deliveryLocation: CLPlacemark?
}

public protocol OrderSoupIntentHandling: NSObjectProtocol {
    optional func confirm(intent: OrderSoupIntent, completion: @escaping (OrderSoupIntentResponse) -> Void)
    func handle(intent: OrderSoupIntent, completion: @escaping (OrderSoupIntentResponse) -> Void)
}
public class OrderSoupIntent: INIntent {
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    public var items: [INObject]?
    public var deliveryLocation: CLPlacemark?
}

public protocol OrderSoupIntentHandling: NSObjectProtocol {
    optional func confirm(intent: OrderSoupIntent, completion: @escaping
    (OrderSoupIntentResponse) -> Void)
    func handle(intent: OrderSoupIntent, completion: @escaping (OrderSoupIntentResponse) -> Void)
    func resolveSoup(for intent: OrderSoupIntent, with completion: @escaping
    (SoupResolutionResult) -> Void)
    func resolveQuantity(for intent: OrderSoupIntent, with completion: @escaping
    (OrderSoupQuantityResolutionResult) -> Void)
    func resolveStoreLocation(for intent: OrderSoupIntent, with completion: @escaping
    (INPlacemarkResolutionResult) -> Void)
}
public class OrderSoupIntent: INIntent {
    public var items: [INObject]?
    public var deliveryLocation: CLPlacemark?
}

public protocol OrderSoupIntentHandling: NSObjectProtocol {
    optional func confirm(intent: OrderSoupIntent, completion: @escaping
(OrderSoupIntentResponse) -> Void)
    func handle(intent: OrderSoupIntent, completion: @escaping (OrderSoupIntentResponse) -> Void)
    func resolveSoup(for intent: OrderSoupIntent, with completion: @escaping
(SoupResolutionResult) -> Void)
    func resolveQuantity(for intent: OrderSoupIntent, with completion: @escaping
(OrderSoupIntentResponse) -> Void) {
        func resolveStoreLocation(for intent: OrderSoupIntent, with completion: @escaping
(INPlacemarkResolutionResult) -> Void)
    }
Lifecycle of an Intent

Resolve

```swift
func resolveSoup(for intent: OrderSoupIntent, with completion: @escaping (SoupResolutionResult) -> Void)
```
Resolve Soup
Order Soup

Resolve Soup
Order Soup

Resolve Soup

Resolution Result
SoupChef says: "What type of soup do you want?"
SoupChef says: “What type of soup do you want?”
SoupChef says: “What type of soup do you want?”

Resolution Result: Clam Chowder
SoupChef says: “What type of soup do you want?”

Resolution Result: Needs Value

Clam Chowder
SoupChef says: “What type of soup do you want?”

Clam Chowder
SoupChef says: “What type of soup do you want?”

Clam Chowder
SoupChef says: “What type of soup do you want?”

Clam Chowder
Order Soup

Order 1: Clam Chowder

Show More
Order Soup

Order 1: Clam Chowder

Resolve Soup
Order Soup

Order 1: Clam Chowder

Resolve Soup
Order Soup

Order 1: Clam Chowder

Resolve Soup

Success
public func resolveSoup(for intent: OrderSoupIntent,
    with completion: @escaping (SoupResolutionResult) -> Void) {
    if intent.soup == .unknown {
        completion(.needsValue())
    } else {
        completion(.success(with: intent.soup))
    }
}
public func resolveSoup(for intent: OrderSoupIntent,
                     with completion: @escaping (SoupResolutionResult) -> Void) {
    if intent.soup == .unknown {
        completion(.needsValue())
    } else {
        completion(.success(with: intent.soup))
    }
}
public func resolveSoup(for intent: OrderSoupIntent,
              with completion: @escaping (SoupResolutionResult) -> Void) {
    if intent.soup == .unknown {
        completion(.needsValue())
    } else {
        completion(.success(with: intent.soup))
    }
}
Handling Voice Input

Roman Efimov, Shortcuts Engineering
You asked for 10 Clam Chowders, but we don't have that many in stock.

How many soups do you want to order?
Looks like you're not near the store. There are 2 restaurants near you, which one do you want to order from?

3801 S Sheridan Blvd
7401 S Lewis Ave
Handling Voice Input

Resolve

Resolve

User Input
Handling Voice Input

Resolve

needsValue
disambiguation
unsupported
confirmationRequired
success
notRequired
Handling Voice Input

Resolve

needsValue

guard let quantity = intent.quantity else {
    completion(.needsValue())
    return
}

Prompt: How many soups do you want to order?
Handling Voice Input

Resolve

disambiguation

.disambiguation(with: storeLocations)
Disambiguation Introduction: There are **count** restaurants near you.

Disambiguation Prompt: Which one do you want to order from?
Handling Voice Input

Resolve

unsupported

```swift
if quantity > menuItem.itemsInStock {
    completion(
        .unsupported(forReason: .notEnoughInStock)
    )
}
```
<table>
<thead>
<tr>
<th>Code</th>
<th>Template</th>
</tr>
</thead>
<tbody>
<tr>
<td>negativeNumbersNegative</td>
<td>displayName can't be negative.</td>
</tr>
<tr>
<td>greaterThanMaximumValue</td>
<td>displayName can't be higher than maximumValue.</td>
</tr>
<tr>
<td>lessThanMinimumValue</td>
<td>displayName can't be lower than minimumValue.</td>
</tr>
<tr>
<td>notEnoughInStock</td>
<td>You asked for quantity soup, but we don't have that many in stock.</td>
</tr>
</tbody>
</table>
Handling Voice Input

Resolve

confirmationRequired

.confirmationRequired(with: quantity)
Parameter Confirmation

Just to confirm, you would like to order [quantity] soup?
Handling Voice Input

Resolve

success

.success(with: storeLocation)
Handling Voice Input

Resolve

success

.success(with: storeLocation)

notRequired

.notRequired()
There are 2 restaurants near you, which one do you want to order from?

- 3801 S Sheridan Blvd
- 7401 S Lewis Ave

Order Soup

Order 1 Clam Chowder for pickup from Store Location

Show More

Store Location
There are 2 restaurants near you, which one do you want to order from?

- 3801 S Sheridan Blvd
- 7401 S Lewis Ave

Cancel
Demo
My Shortcuts

- Home ETA
  - 2 actions

- Directions to Event
  - 3 actions

- Upload Last Photo
  - 4 actions

- Play Playlist
  - 1 action

- Walk to Coffee
  - 3 actions

- Log My Weight
  - 2 actions

- Make PDF
  - 2 actions

- Create Shortcut
New Shortcut

Create a shortcut to actions you do in your apps every day.

Add Action

Help
New Shortcut

Create a shortcut to actions you do in your apps every day.

Add Action

Help

Search for apps and actions
Suggestions
Based on how you use your iPhone.

Order Soup
- Clam Chowder
- Tomato Soup
- Soup
New Shortcut

SOUP CHEF
Order 1 Soup for pickup from Store Location
Show More
New Shortcut

Order 1 Soup for pickup from
Store Location

Show More
My Shortcuts

- Home ETA
  2 actions
- Directions to Event
  3 actions
- Upload Last Photo
  4 actions
- Play Playlist
  1 action
- Walk to Coffee
  2 actions
- Log My Weight
  2 actions
- Make PDF
  2 actions
- Order Soup
  3 actions
Order Soup

Order 1 Soup for pickup from Store Location

Show More
Order Soup

Order 1 Soup for pickup from
Store Location

Show More

Search for apps and actions
Order Soup

Order 1 Soup for pickup from Store Location

Soup

- Clam Chowder
- Tomato Soup
- Chicken Noodle Soup

Ask Each Time

Cancel
Order Soup

SOUP CHEF

Order 1 Clam Chowder for pickup from Store Location

Show More
Order Soup

Order 1 Clam Chowder for pickup from Store Location

Show More
My Shortcuts

- Home ETA: 2 actions
- Directions to Event: 3 actions
- Upload Last Photo: 4 actions
- Play Playlist: 1 action
- Walk to Coffee: 2 actions
- Log My Weight: 2 actions
- Make PDF: 2 actions
- Order Soup: 1 action
My Shortcuts

Store Location
There are 2 restaurants near you, which one do you want to order from?

3801 S Sheridan Blvd
7401 S Lewis Ave

Cancel
My Shortcuts

Store Location

There are 2 restaurants near you, which one do you want to order from?

3801 S Sheridan Blvd
7401 S Lewis Ave

Cancel
Building Actions with Parameter Relationships
Order Soup

Order 1 Clam Chowder for delivery to Delivery Location

Order Type
- pickup
- delivery

Ask Each Time

Cancel
Order Soup

Order 1 Clam Chowder for delivery to Delivery Location

Show More
Order Soup

1 Clam Chowder for delivery to Delivery Location
Order Soup

Order 1 Clam Chowder for pickup from Store Location

Show More

Add

Store Location

3801 S Sheridan Blvd
7401 S Lewis Ave
Ask Each Time

Cancel
Custom Intent

Category: Order
Title: Order Soup
Description: Order a soup
Default Image: chicken_noodle_soup
Confirmation: User confirmation required

Relationship

Parent Parameter: orderType
Show If Parent: has exact value
Value: delivery
Order Soup

Order 1 Clam Chowder for pickup from 7401 S Lewis Ave

Show More
Identified parent and child parameters
Established parameter relationships
Updated summaries for each parameter combination
Dynamic Options
Order Soup

Order 1: Clam Chowder for delivery to Current Location
How many soups do you want to order?
public protocol OrderSoupIntentHandling: NSObjectProtocol {
    func handle(intent: OrderSoupIntent, completion: @escaping (OrderSoupIntentResponse) -> Void)
    optional func confirm(intent: OrderSoupIntent, completion: @escaping (OrderSoupIntentResponse) -> Void)
    func resolveStoreLocation(for intent: OrderSoupIntent, with completion: @escaping (INPlacemarkResolutionResult) -> Void)
    func provideStoreLocationOptions(for intent: OrderSoupIntent, with completion: @escaping ([CLPlacemark]?, Error?) -> Void)
    optional func defaultStoreLocation(for intent: OrderSoupIntent) -> CLPlacemark?
}
public protocol OrderSoupIntentHandling: NSObjectProtocol {
    func handle(intent: OrderSoupIntent, completion: @escaping (OrderSoupIntentResponse) -> Void)

    optional func confirm(intent: OrderSoupIntent, completion: @escaping (OrderSoupIntentResponse) -> Void)

    func resolveStoreLocation(for intent: OrderSoupIntent, with completion: @escaping (INPlacemarkResolutionResult) -> Void)

    func provideStoreLocationOptions(for intent: OrderSoupIntent, with completion: @escaping ([CLPlacemark]?, Error?) -> Void)

    optional func defaultStoreLocation(for intent: OrderSoupIntent) -> CLPlacemark?
}

public func provideStoreLocationOptions(for intent: OrderSoupIntent,
                                        with completion: @escaping ([CLPlacemark]?, Error?) {

    completion(
        [CLPlacemark(location: CLLocation(latitude: 37.3348, longitude: -122.009),
                     name: "3801 S Sheridan Blvd",
                     postalAddress: nil),
        CLPlacemark(location: CLLocation(latitude: 37.3318, longitude: -122.031),
                     name: "7401 S Lewis Ave",
                     postalAddress: nil)),
        nil)
}
public func provideStoreLocationOptions(for intent: OrderSoupIntent,
    with completion: @escaping ([CLPlacemark]?, Error?) {
        completion([
            CLPlacemark(
                location: CLLocation(latitude: 37.3348, longitude: -122.009),
                name: "3801 S Sheridan Blvd",
                postalAddress: nil),
            CLPlacemark(
                location: CLLocation(latitude: 37.3318, longitude: -122.031),
                name: "7401 S Lewis Ave",
                postalAddress: nil)
        ], nil)
public func defaultStoreLocation(for intent: OrderSoupIntent) -> CLPlacemark? {
    return CLPlacemark(location: CLLocation(latitude: 37.3348, longitude: -122.009),
                        name: "3801 S Sheridan Blvd",
                        postalAddress: nil)
}
public func defaultStoreLocation(for intent: OrderSoupIntent) -> CLPlacemark? {
    return CLPlacemark(location: CLLocation(latitude: 37.3348, longitude: -122.009),
                        name: "3801 S Sheridan Blvd",
                        postalAddress: nil)
}
guard let storeLocation = intent.storeLocation else {
    completion(.needsValue())
    return
}
Building Actions with Outputs
Order Soup

Order 2 Clam Chowder for pickup from 7401 S Lewis Ave

Show More
Order Soup

SOUP CHEF

Order 2 Clam Chowder for pickup from 7401 S Lewis Ave

MESSAGES

Send "Hey, I just ordered Order Details. Please pick it up!"
to John Appleseed

Search for apps and actions

Cancel
<table>
<thead>
<tr>
<th>Property</th>
<th>Display Name</th>
<th>Type</th>
<th>Array</th>
<th>Supports multiple values</th>
</tr>
</thead>
<tbody>
<tr>
<td>soup</td>
<td>Order Details</td>
<td>Order Details</td>
<td></td>
<td></td>
</tr>
<tr>
<td>waitTime</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>orderDetails</td>
<td></td>
<td>Order Details</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Output: orderDetails

Printed Dialog: Your total is `orderDetails.total`. Your `soup` order will be ready soon.
Order Soup

- pickup from 7401 S Lewis Ave

Show More

MESSAGES

Send "Hey, I just ordered Order Details. Please pick it up!" to John Appleseed

Show More

Order Details as Order Details

Order Details
- Default
- Estimated Time
- Total
- Name

Done
Voice-Only Dialog: Your total is orderDetails.estimatedTime. Your soup order will be ready.

Printed Dialog: Your total is orderDetails.estimatedTime. Your soup order will be ready.
Enable customizable shortcuts

Parameters

Outputs
More Information

developer.apple.com/wwdc19/213

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Siri Shortcuts Lab</td>
<td>Wednesday, 10:00</td>
</tr>
<tr>
<td>SiriKit, Shortcuts, and Siri Event Suggestions Lab</td>
<td>Thursday, 12:00</td>
</tr>
<tr>
<td>Designing and Building Great Shortcuts</td>
<td>Friday, 5:20</td>
</tr>
</tbody>
</table>