Oracle Digital Assistant
The Complete Training

Conversational UX

Safe Harbor Statement

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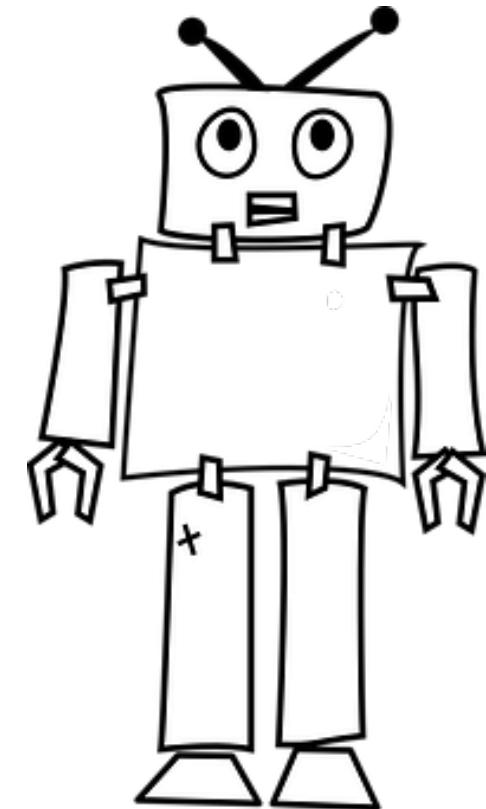
Topic agenda

1 Why language can be difficult

2 Designing a conversation

3 Voice and personality

4 Natural language intelligence

5 Help, guidance and error handling
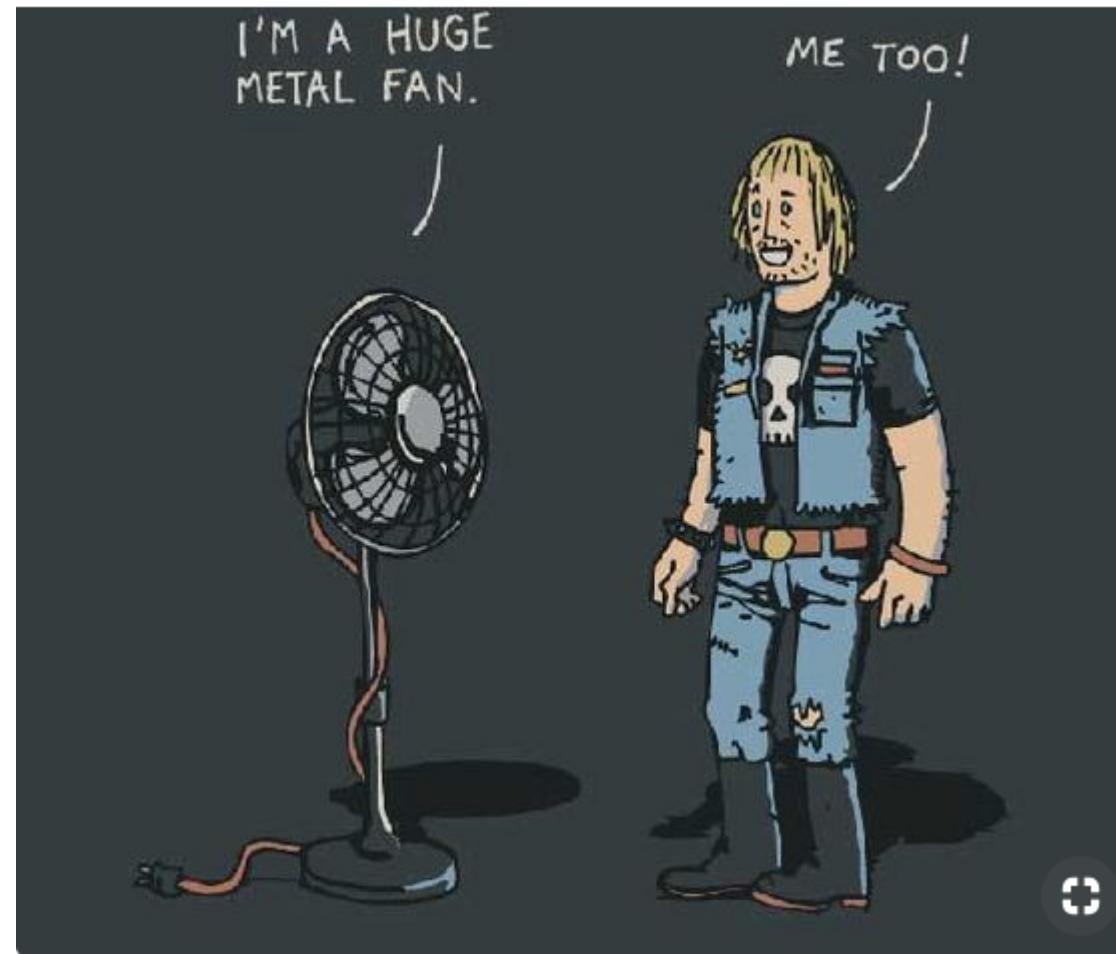
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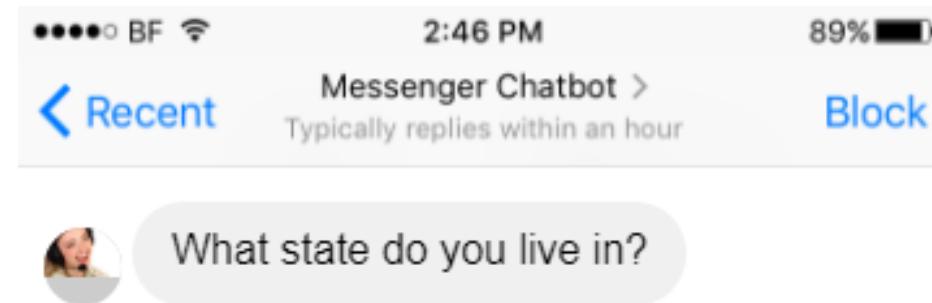
Designing a conversation is a much an **art** as it is a **science**

Why language can be difficult

Why language can be difficult

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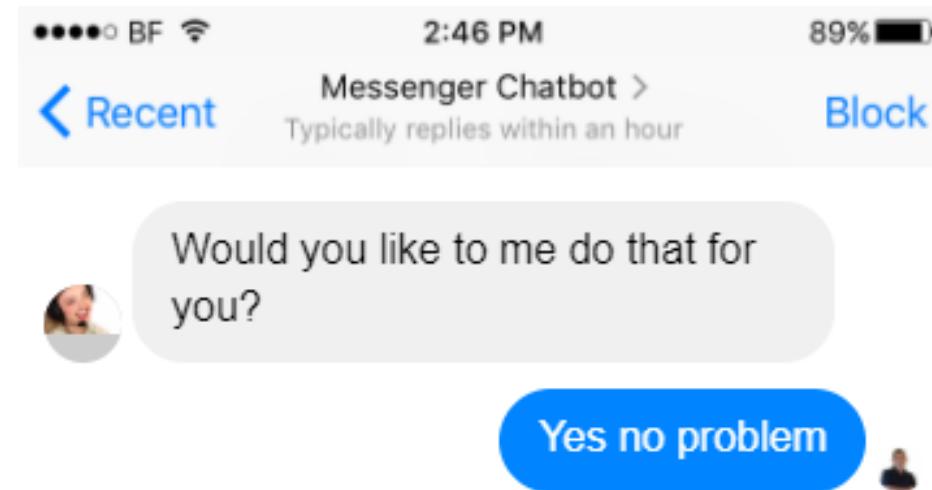
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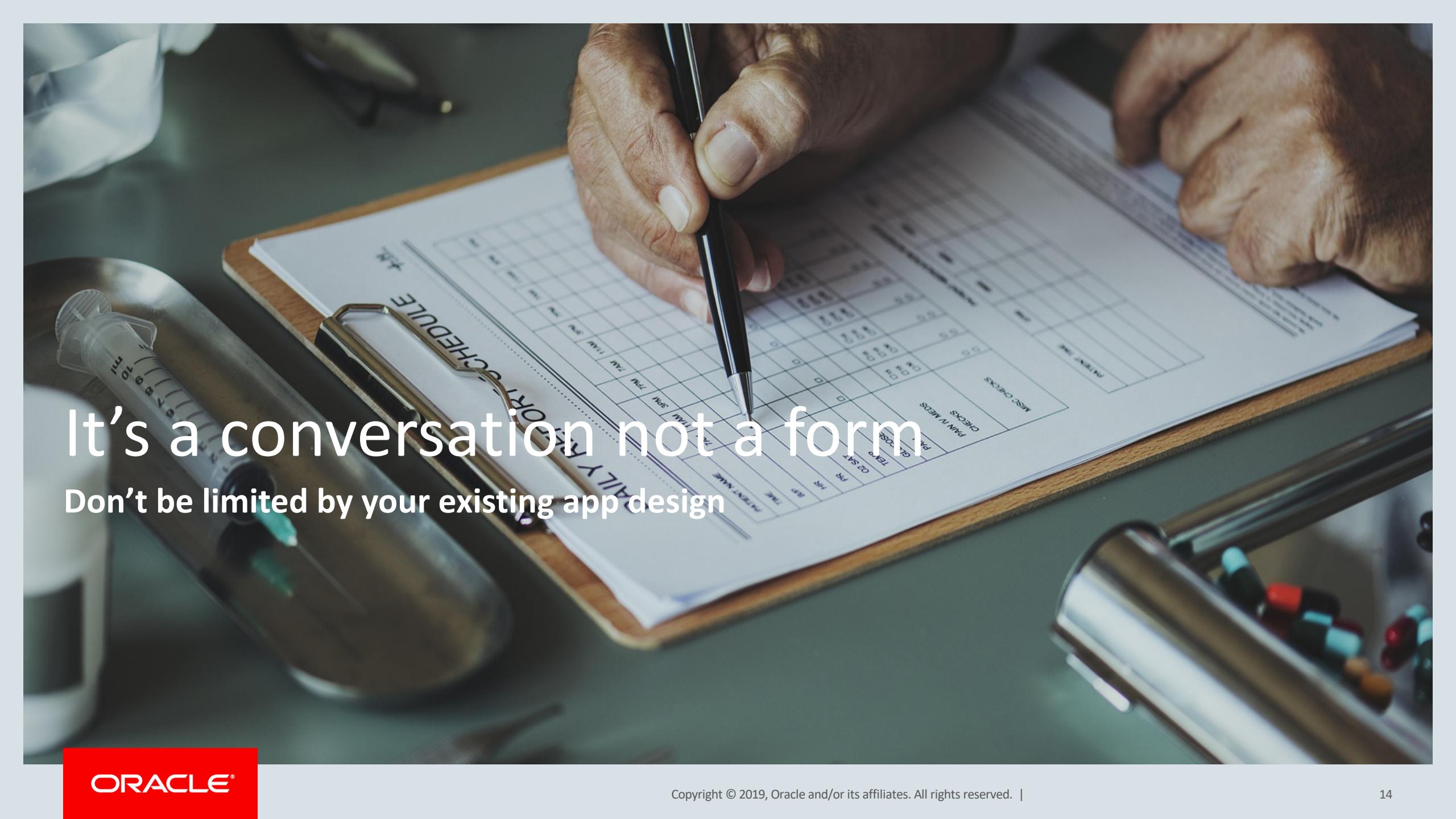
Conversational Design

A conversation doesn't design itself

You need FULL buy in from the business

- What does success look like?

- Are you targeting the right use case?

- Is the business buying into the FULL lifecycle
  - Remember: "the first day is the worst day"
  - Are you planning to iteratively test, train, release?
  - How do you plan to deal with failure?
  - Are you willing to fail?

- Do you have the right skills on the project
  - Conversational designers, business analysts, integration specialists
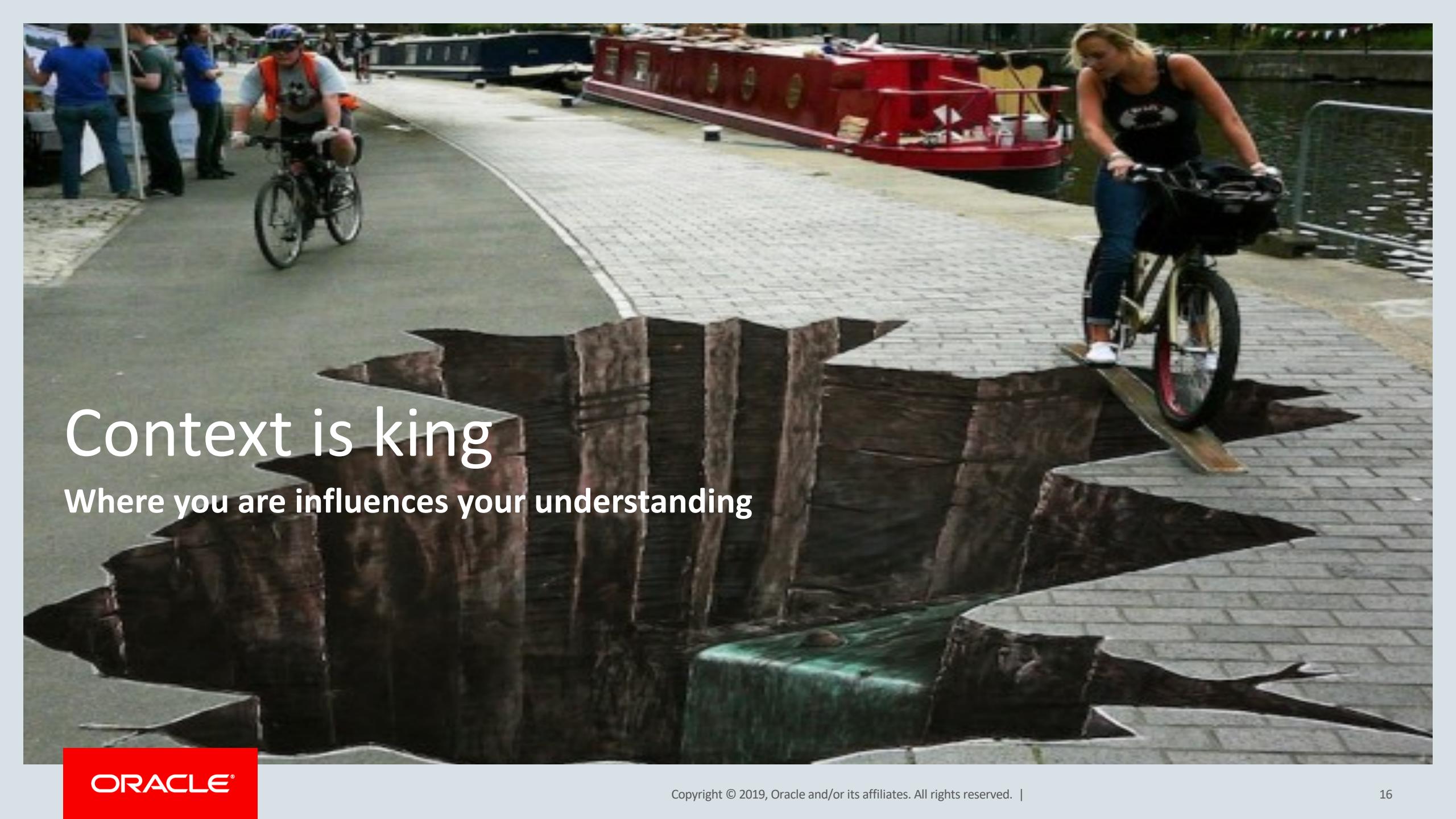
It's a conversation not a form

Don't be limited by your existing app design

It's a conversation not a form

- Think in terms of a human to human conversation
  - Don't be limited by the way you currently do things
  - Don't be limited by your technology design

- Don't replicate an IVR (press 1 for....2 for...)

- A form with 50 fields will not map well to a conversation
  - Is all that information is really needed?
  - Could data be defaulted?
    - Based on location, or knowledge about the user, or context of conversation
  - Could information be captured in a different way
    - Location information, capturing an image using phone camera
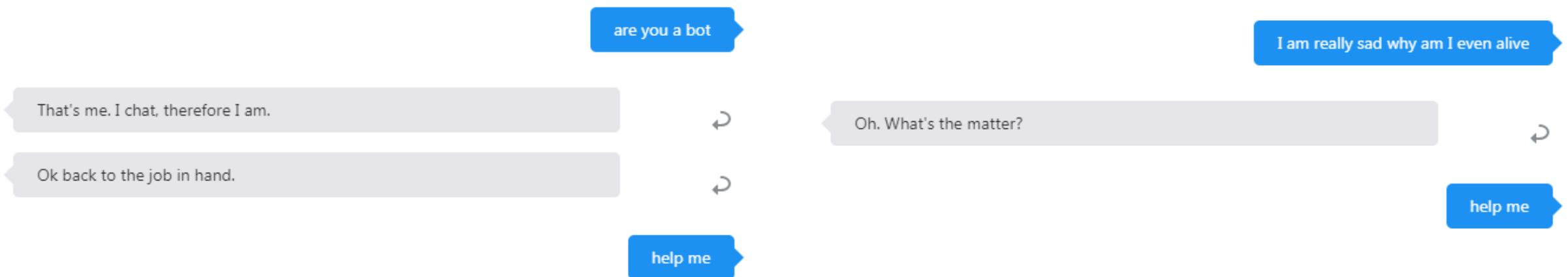
Context is king

Where you are influences your understanding

Context is king

- Context (when, who, where) is implied in human conversation, we need to explicitly manage context in bots

- Meaning is implied based on context
  - "Who is **his** manager" "What about **Friday**" "Get me a taxi **home**"

- Consider altering the conversation based on the user

Context is king

- Intent resolution MAY depend on where you are in a conversation

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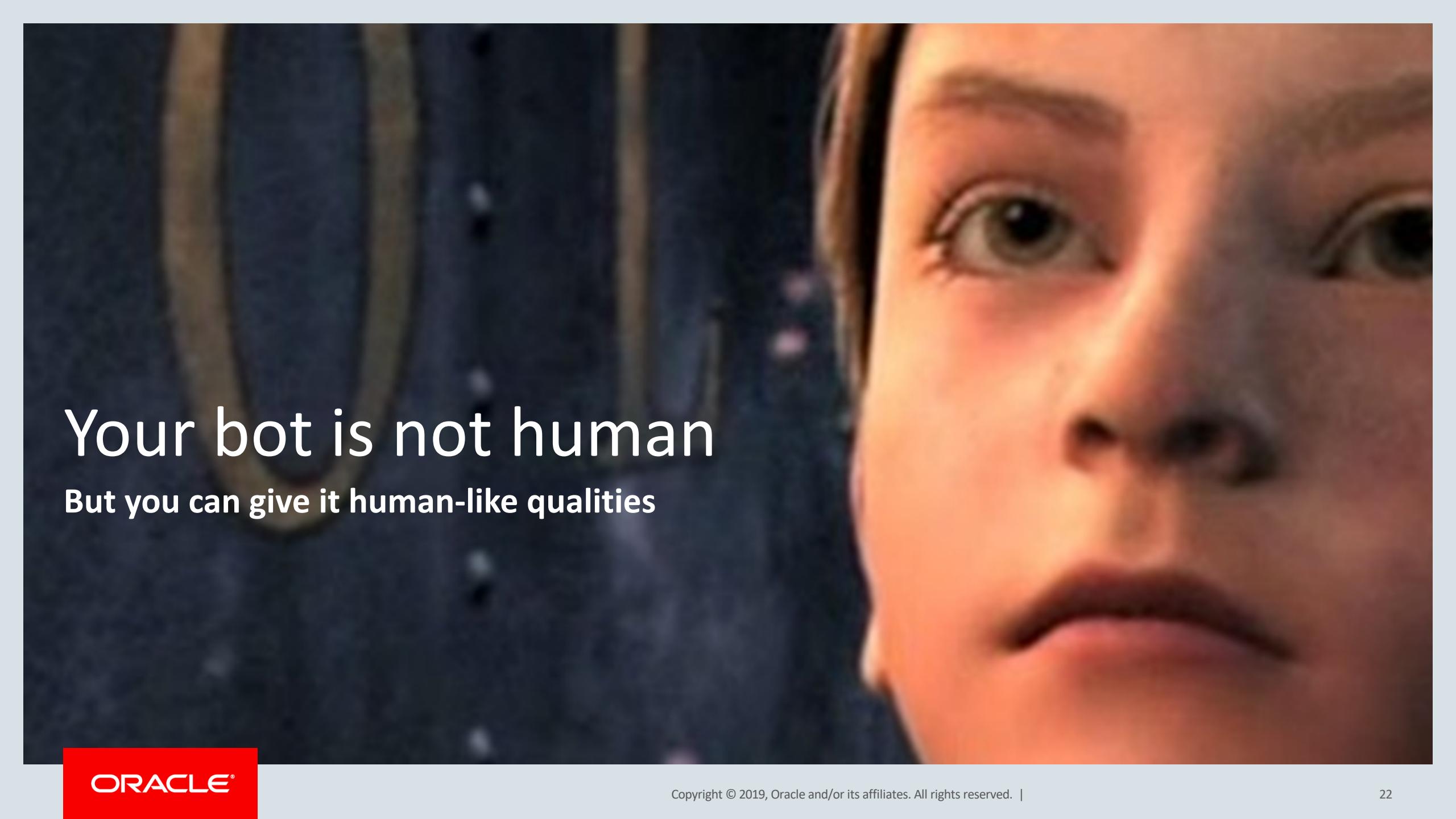
Consider your bot personality

Your voice IS your brand

Consider your bot personality

- A conversation should be engaging

- Decide on your bot persona
  - Professional but personable – let the business dictate the balance
  - Build a backstory (although not necessarily to be made public)
  - Consider a name and avatar, but not necessarily human
  - The voice and tone of your bot is your brand

- Give a positive and welcoming introduction

- Words carry emotions
  - "You neglected to supply" vs "If you could tell us.."

Your bot is not human

But you can give it human-like qualities

Your bot can still have human qualities

- If people know it's a bot, expectations are set accordingly

- However, just a like a human-to-human conversation
  - Keep messages short and to the point
  - Vary responses
  - Have a strategy for when the conversation gets "stuck"
  - Vary welcomes and greetings for a heavily used bot
  - Disclose more information as you detect the user stuck at a step
  - Don't be afraid to verify understanding

- Don't overdo the empathy or humour!
  - The wins will be small but the loses could be considerable
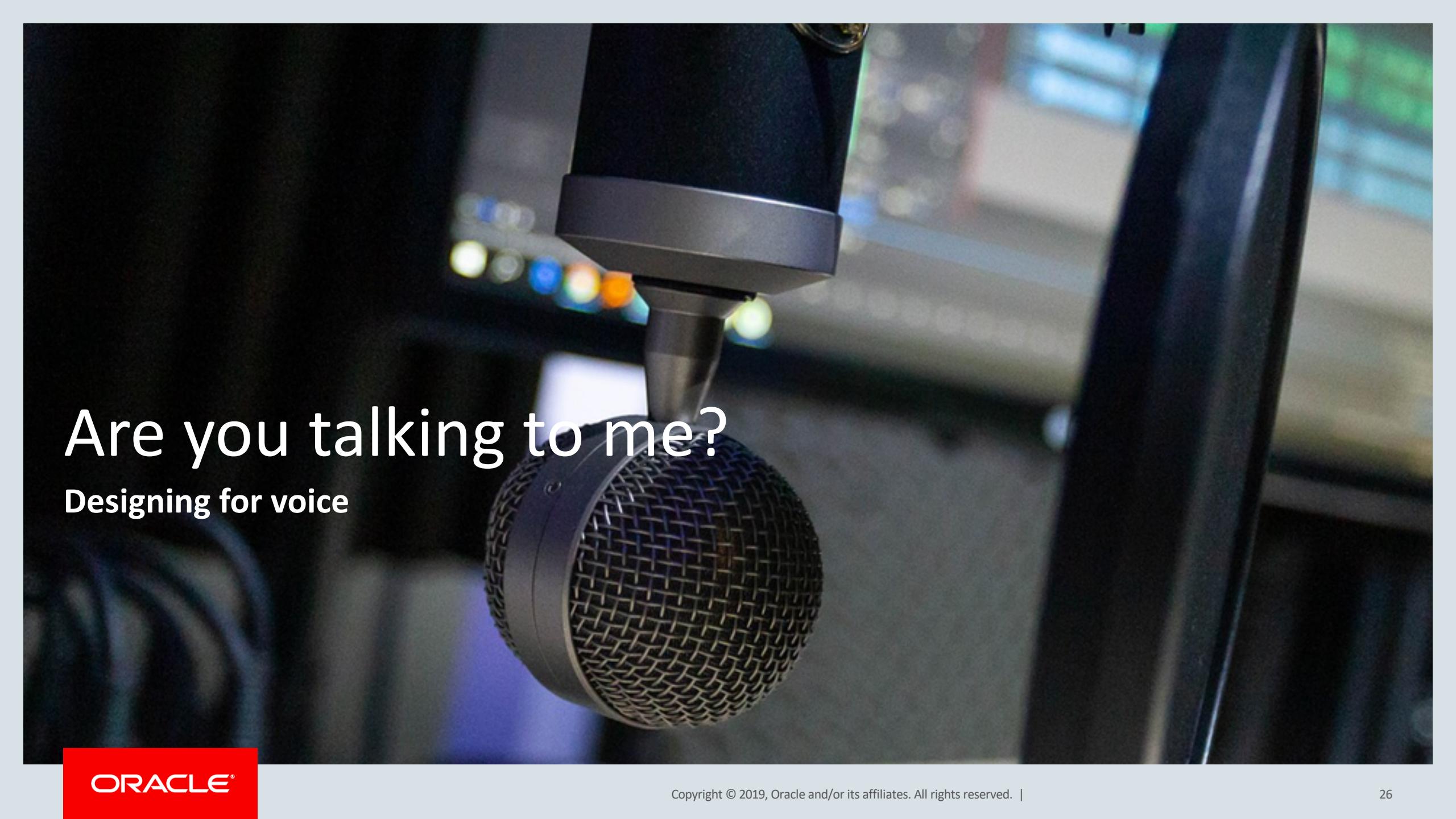
Handle smalltalk

It's part of a conversation

Handle smalltalk

- Smalltalk is a natural element of conversation
  - People DO smalltalk to bots!

- It also serves a purpose
  - Aids discovery: requests for help, what the bot can do, enquiries about the bot
  - Handles frustrations: swearing, abuse, negative sentiment about the business
  - Common actions: exit, reset, speak to human

- Prepare to handle smalltalk
  - An on-topic answer is better than a "sorry I didn't get that"

- Try to manage the conversation BACK to the known use cases
  - "Ok, so that's the best joke I've got, how about I get back to helping with your order"

Are you talking to me?
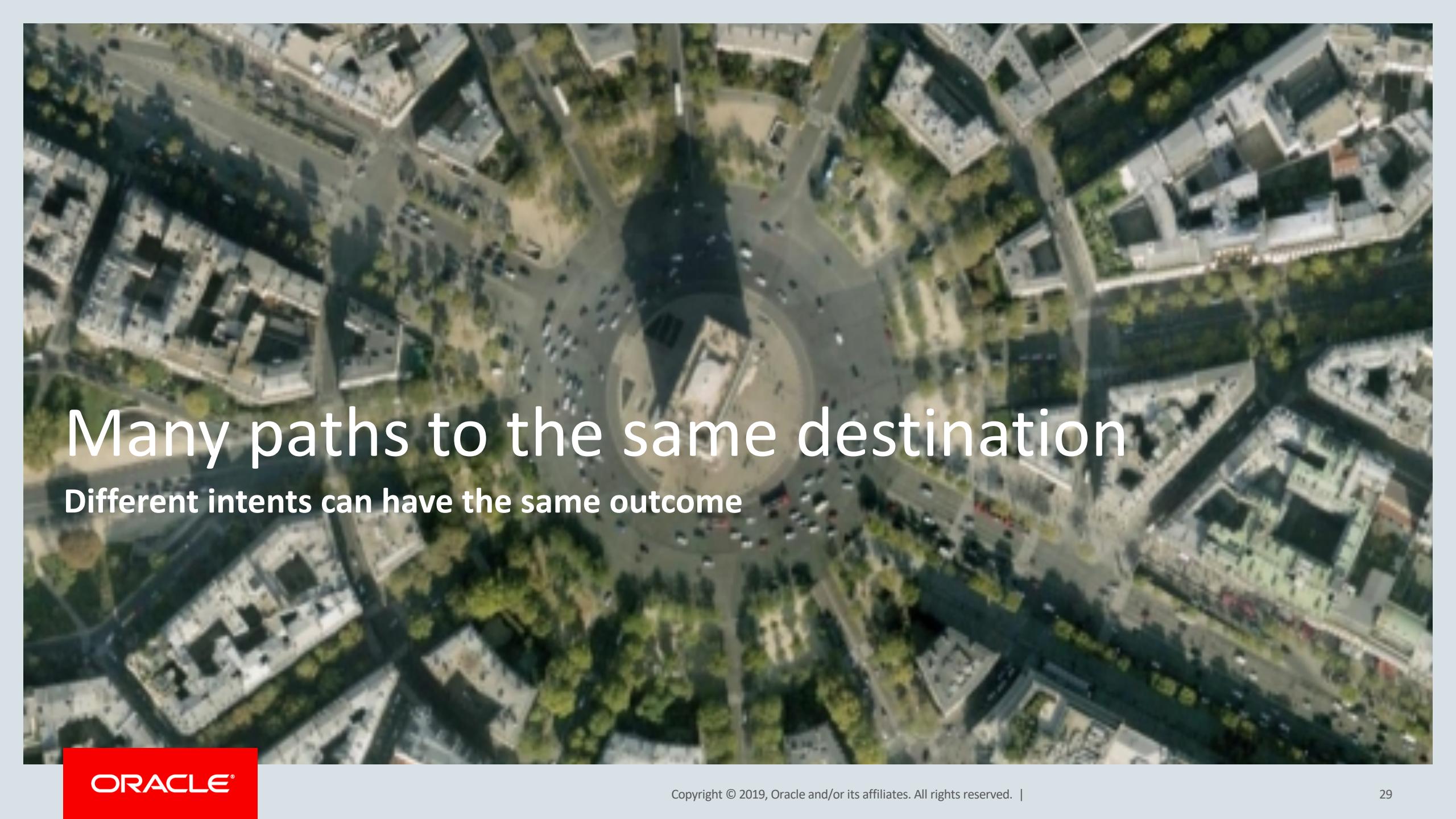
Designing for voice

Designing intents for voice

- Voice MAY involve you rethinking some of your design decisions
  - Limitations of channel
  - More concise responses/confirmations
  - Different wording
- Voice specific intents
  - "Can you repeat"/"What did you say"
- Disambiguate certain data
  - Andy or Andi?
- Build synonyms for commonly "misheard" phrases

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Many paths to the same destination

Different intents can have the same outcome

Many paths to the same destination
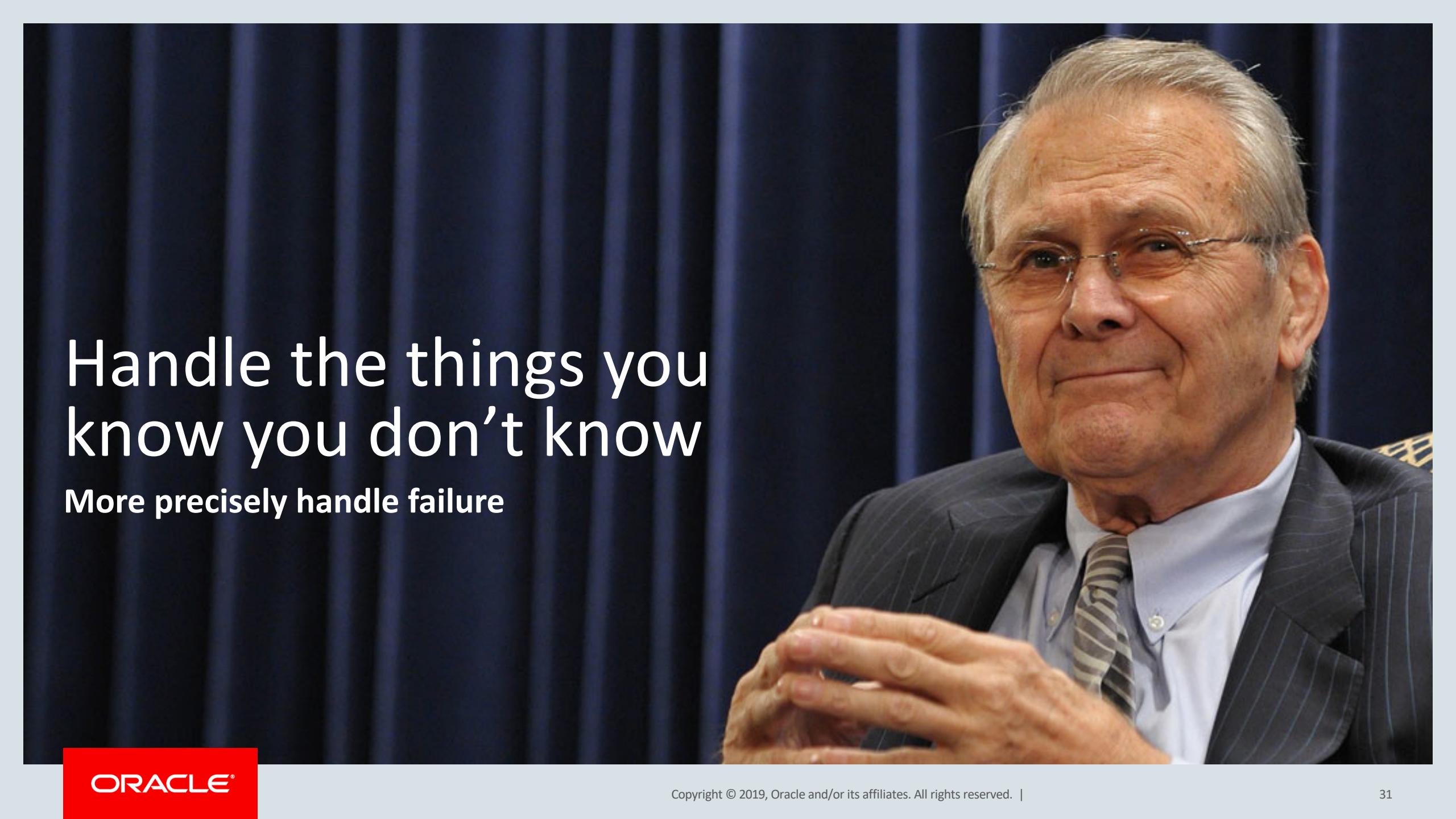
- Sometimes people state what the problem is, rather than asking the solution
  - "I can't log into my account"
  - "How do I reset my password"
- The same action could be triggered by different types of phrases
- Have different intents which all result in the same action
  - Keeps related utterances together
  - "cleaner" separation of intents
  - Possibility to treat differently in future

RETURNS POLICY

How do I return this item

Can I return my purchases

What is your returns policy

I bought a shirt and it doesn't fit

I got this coat in the wrong size

These trousers were bought as a gift but don't fit

Bought a DVD but it was scratched

Drawer on my BluRay player is broken

Got new iPhone but won't hold charge

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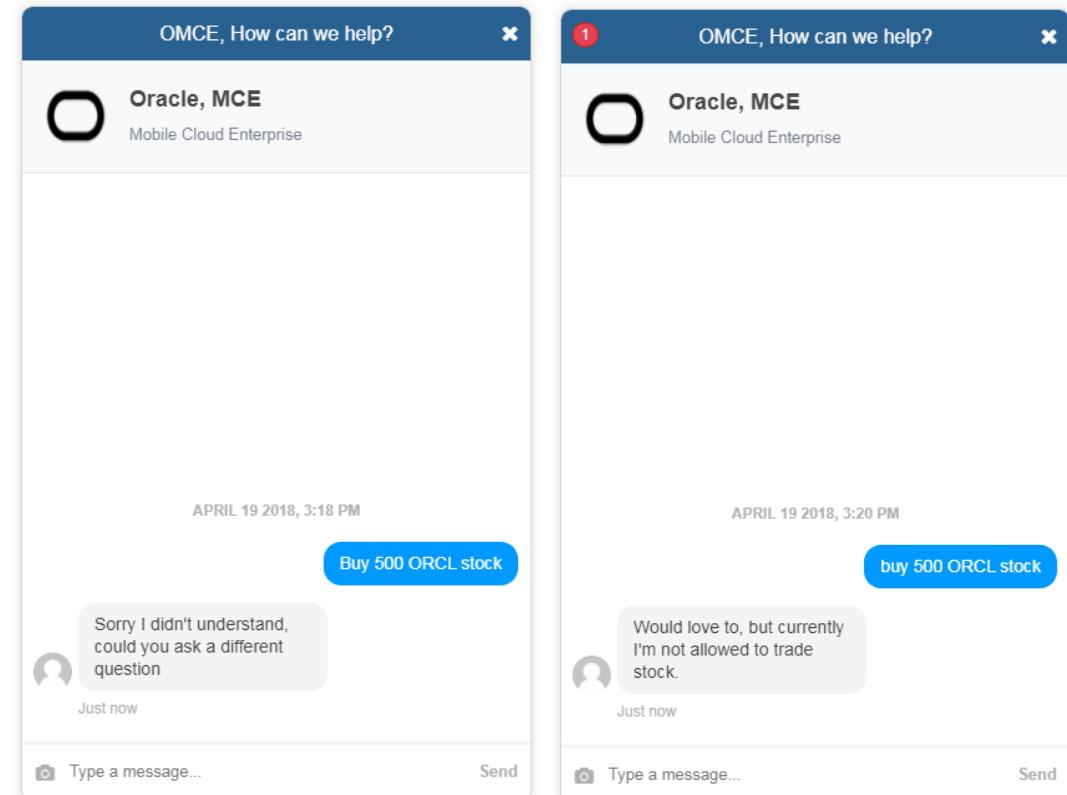
Handle the things you know you don't know

More precisely handle failure

Handle the things you know you don't know

- Create intents for the use cases you know you can't handle
  - Your bot likely handles a subset of business functions
  - Gracefully handle the business function NOT supported by the bot
- Allows the bot to more precisely handle failure
 - User knows input was understood
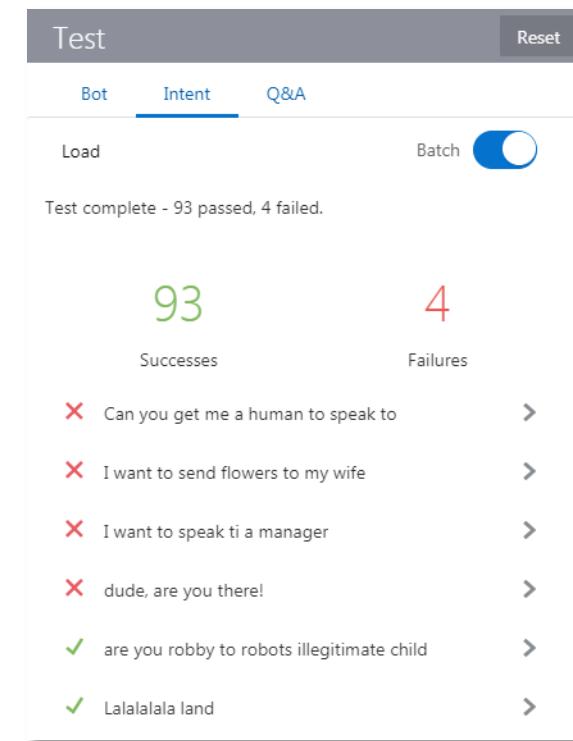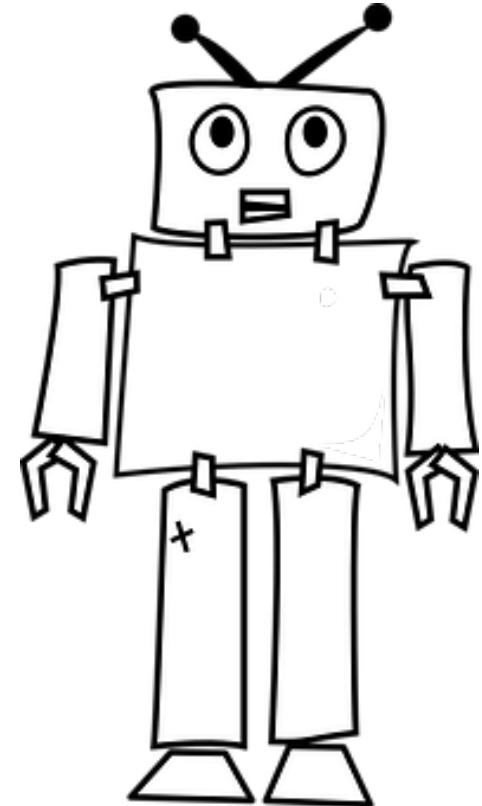
Test, fix, repeat
**Good data comes from testing**

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Test, fix, repeat (often!)

- NLP is only as good as the data you train it with

- Real data comes from real users
  - Typically complete sentences

- Harvest from logs & 80/20 split training/test data

- Use batch testing
  - Confirm a minimum baseline performance

- Use analytics and insights
  - Where does the bot fail?

- Test, fix, repeat

Test   Reset

Bot   Intent   Q&A

Load   Batch

Test complete - 93 passed, 4 failed.

93   4
Successes   Failures

✗ Can you get me a human to speak to   ›
✗ I want to send flowers to my wife   ›
✗ I want to speak ti a manager   ›
✗ dude, are you there!   ›
✓ are you robby to robots illegitimate child   ›
✓ Lalalalala land   ›

The **two** most common NLP problems are **testing the bot too early** with insufficient training data and you **didn't** train the **unresolvedIntent**!!!

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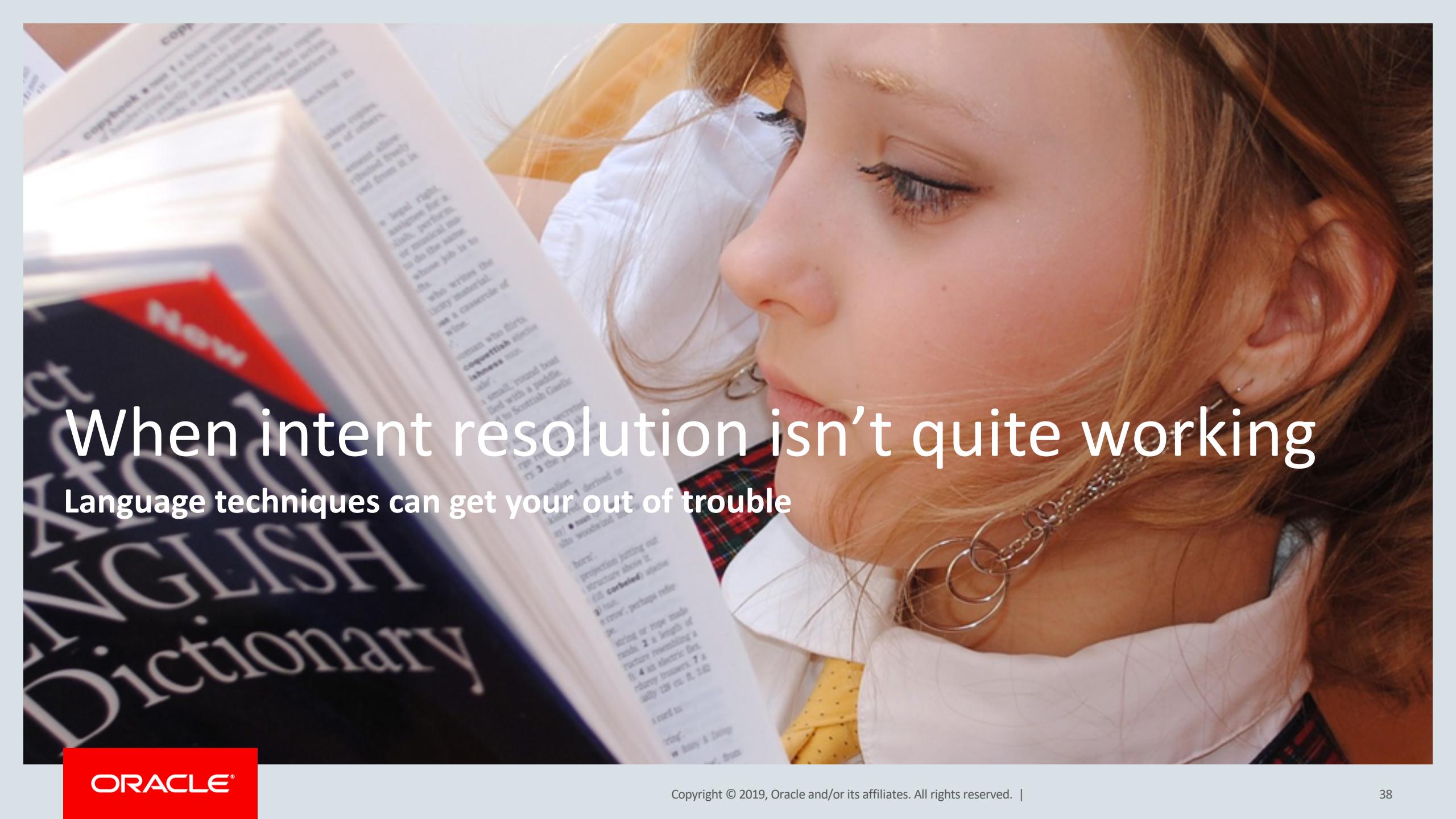
Not everything is "AI magic"

AI doesn't magically make everything work

AI doesn't magically make everything work – design time challenges

- You can't simply throw data into the bot NLP
  - You need to DESIGN your intents appropriately and classify data
  - Human logs/FAQs useful, but use CAREFULLY and generally not "as is"
- AI doesn't really "understand" language (yet!)
  - It is classifying input against known intents
  - CancelPizza and OrderPizza have a high commonality
  - Negation is a challenge ("not", "no" prefixes "un-", "in-", im-")
- If a human couldn't classify an input, don't expect a bot to
  - "Flower delivery not arrived" – complaint or check delivery status?

When intent resolution isn't quite working

Language techniques can get your out of trouble

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Using language to get you out of trouble

- It's ok to ask for clarification…humans do!
  - "Flower delivery not arrived" – complaint or check delivery status?
- Verbose user input can be difficult to classify
  - Consider asking the user to be more concise rather than failing classification
- Use conversational techniques to make the right choice
  - "Let me deal with that for you. Do you want me to first of all check the status or shall I transfer you to a manager?"
  - Can you disambiguate based on context?
  - Do you need to disambiguate at all?
- Not sure if use is asking for past or future booked time off? Give both!

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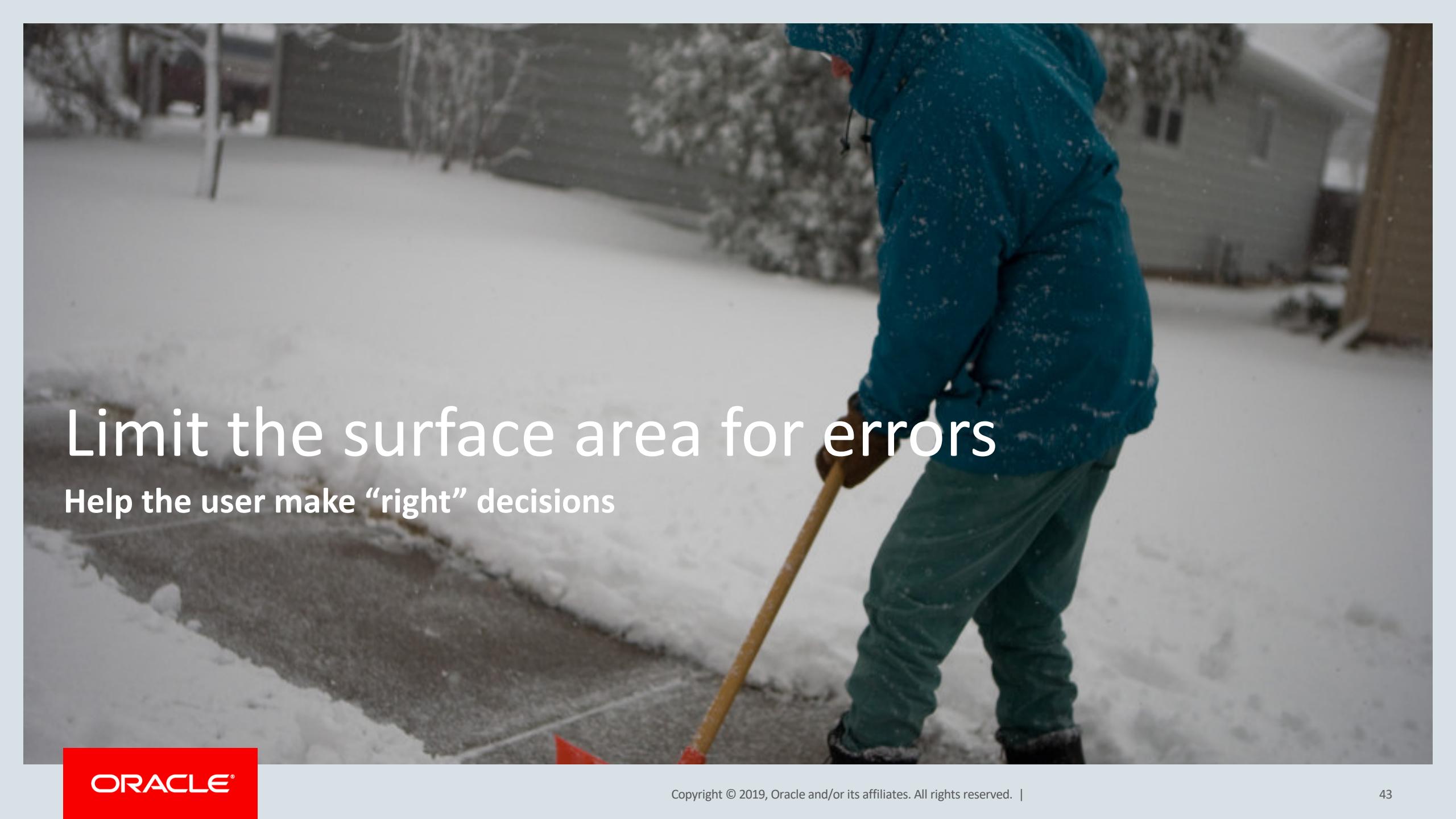
Offer guidance & help

Including human help

Offer guidance and help

- Make it clear how to start a conversation
- The bot should give guidance on what services it can support
  - Hint as to what is expected next
- Offer the most relevant actions
- Remind & offer some sort of "help" or "reset" option
- Don't leave the user "hanging"
- Offer human hand off as required
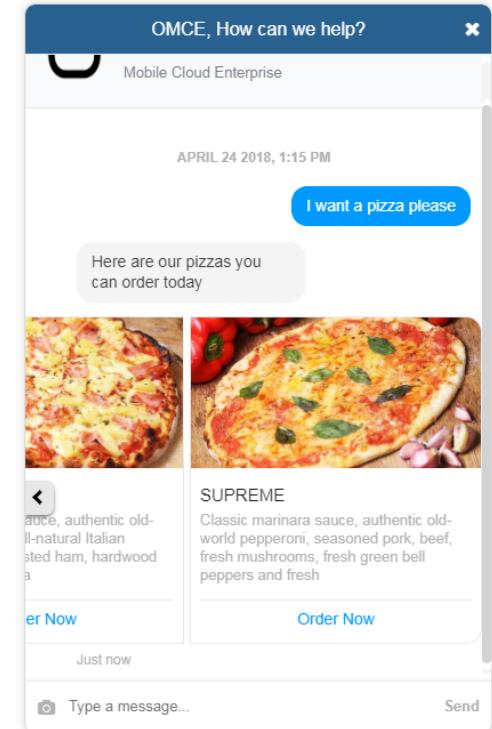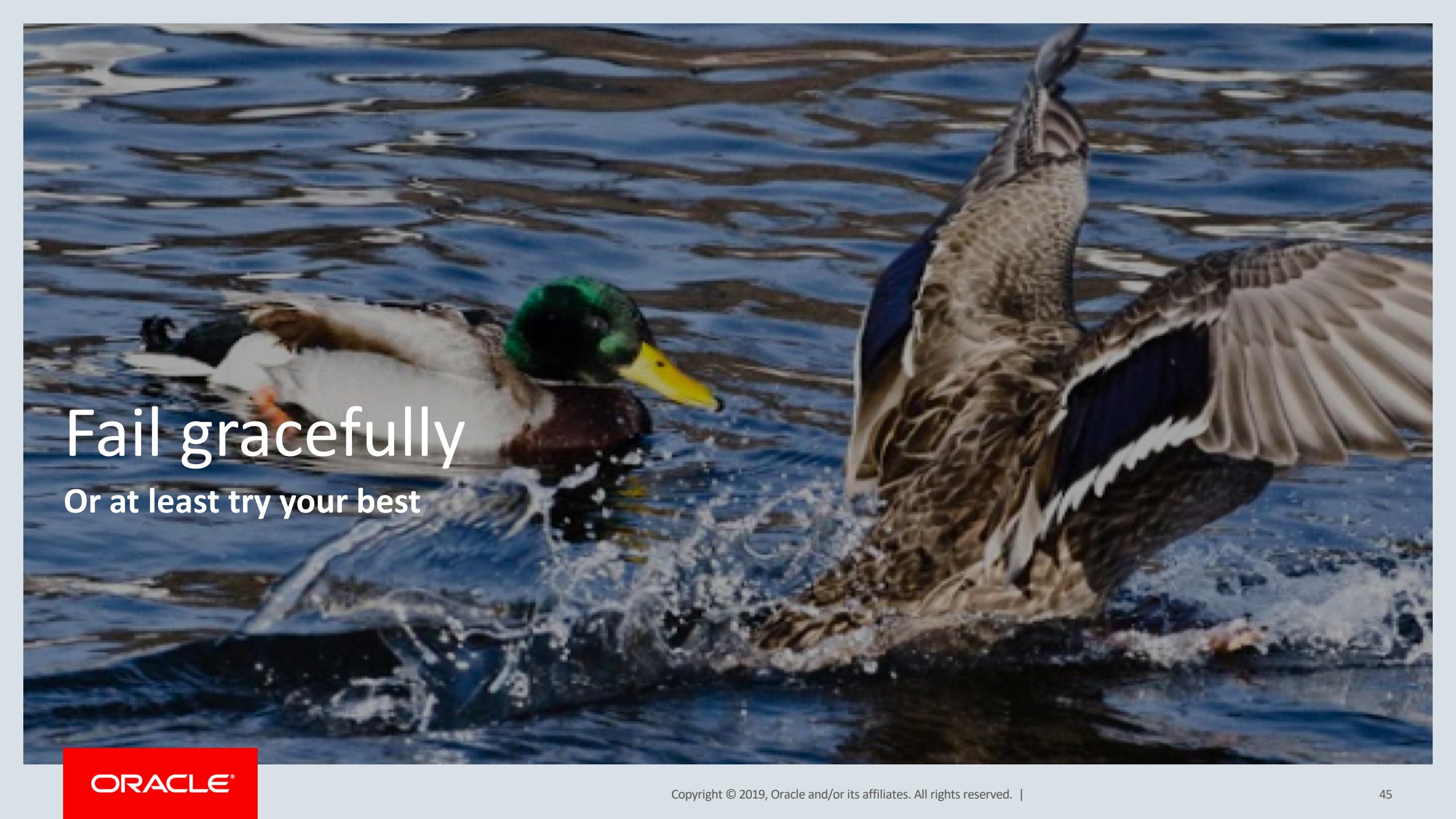
Limit the surface area for errors

Help the user make "right" decisions

Limit the surface area for errors

- Guide and give indications of what the bot is expecting

- Guide the conversation back to the happy path

- Avoid open ended questions
  – "Do you want anything else" vs "Do you want to order drinks, dips or cookies?"

- Ask before committing a transaction
  – Verbs and nouns instead of simple Yes/No

- Consider use of quick replies, cards and carousels
  – Easier to read
  – Quicker and more accurate to select

Fail gracefully

Or at least try your best

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Fail gracefully

- Fail gracefully
  - Don't blame the user
    - "You neglected to supply" vs "If you could tell us.."
    - "Invalid order id" vs "Hmm, I can't seem to find that order"

- An opportunity to re-enforce the bot personality
  - It's not that you fail, its how you deal with it that is rememberd

- Give the user intelligent options to get back on track
  - Show the nearest resolving intents
  - Give an option to reset the conversation
  - Human agent hand-off

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Integrated Cloud

Applications & Platform Services

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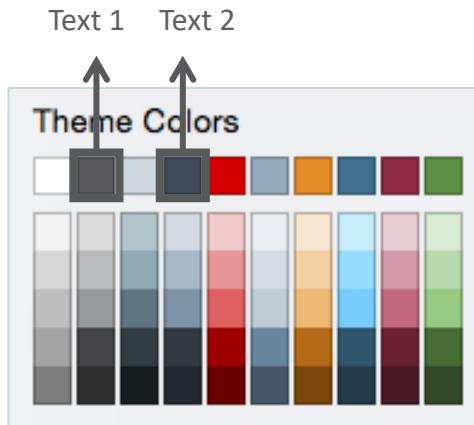
Oracle Digital Assistant Hands-On

TBD

Text and Background Contrast

Use **White** text over dark backgrounds and **Text 1** or **Text 2** over light backgrounds.

Oracle Color Palette

Text 1   Text 2

Theme Colors

Background 2	Accent 2	Accent 3	Accent 4	Accent 5	Accent 6
Text 1 Text 2	White	White	White	White	White
Text 2	Text 1 Text 2	Text 1 Text 2	Text 1 Text 2	Text 1 Text 2	Text 1 Text 2
Text 2	Text 1 Text 2	Text 1 Text 2	N/A	Text 2	Text 2
White	Text 1 Text 2	Text 1 Text 2	N/A	White	Text 2
White	White	White	White	White	White
White	White	White	White	White	White

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