

WHITE PAPER



A GUIDE TO CONVERSATIONAL UI BEST PRACTICES

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The era of artificial intelligence well and truly upon us, and it's opening new doors for businesses of all sizes. Technological advances in the quality and availability of artificial intelligence mean that conversational bots - computer programs that engage in meaningful conversations with users - are now a viable mainstream solution for streamlining business processes and customer service.

However, it's no longer enough for programmers to build bots that meet technical specs and security requirements. Today, there's a premium on getting conversational user interface (UI) right. In other words, bots need to be capable of engaging in sufficiently meaningful, responsive and realistic conversation to capture the hearts and minds of their audiences.

It's high time we said goodbye to clunky, awkward and unnatural bots. Read on for our best practice guide to designing conversational UI.

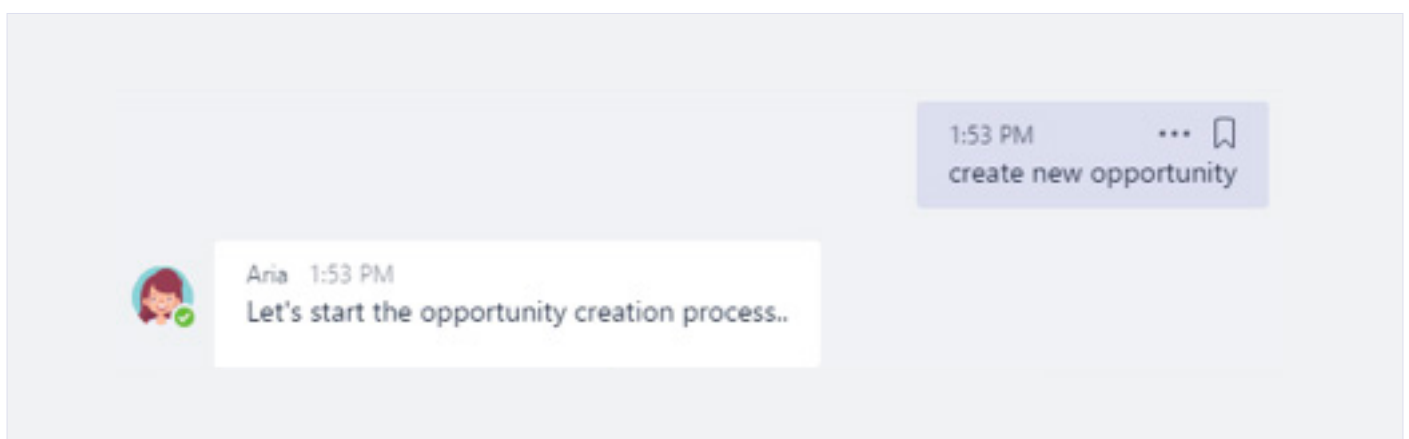
MAKE SURE YOUR CHATBOT HAS A CLEARLY DEFINED ROLE

Users will tailor their behaviour based on their expectations of a bot. Therefore, it's essential to decide and communicate the purpose of your bot. Is it a personal assistant? A team assistant? A general assistant? Making this clear from the outset will help you to design a conversational UI that engages users with minimal frustration.

HAVE AN END GOAL

Every bot conversation should have a clear purpose to ensure the user's needs are met. If a user asks your bot to create a meeting for tomorrow afternoon, the bot should seek to understand the intent (i.e. to create a meeting) and then focus on completing the goal.

The best bots direct conversation to collect all information needed to achieve the task at hand. For example, a bot may ask who should be invited to a meeting or where the meeting will be held. You can plan these scripts by writing out scenarios and use cases for common user requests, and then teach them to your bot to guide future interactions.



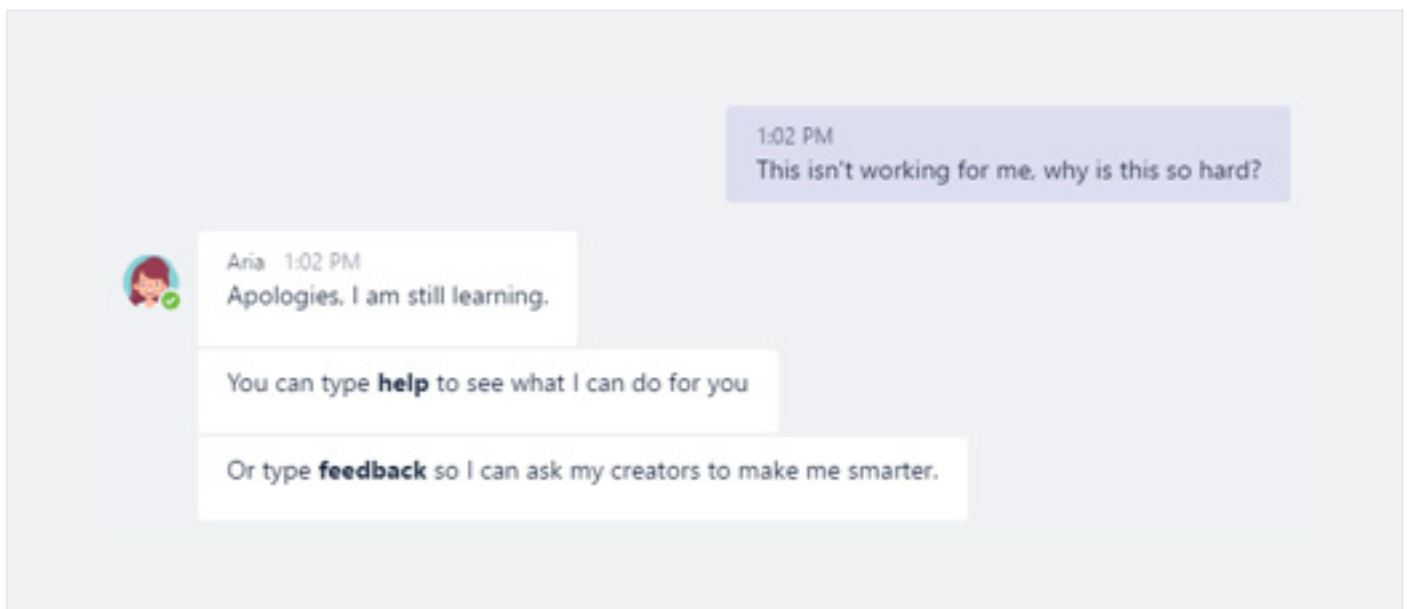
DON'T PRETEND TO BE HUMAN

Conversational bots should be human-like, not human. This distinction needs to be clear to you,

as well as your users, from the outset. But what does this mean in practice? You don't have to pretend that your bot can do anything and everything, or that it completely understands the user. It's okay to be transparent about the bot's capabilities and limitations. In fact, people tend to be more forgiving of misunderstandings when they know they're talking to a bot.

When you let your users know that they're talking to a bot and, importantly, admit when the bot doesn't understand something, you set clear and realistic expectations that lay the foundations for a positive user experience.

Below is an example of taking the opportunity to get feedback from user, and admit that you are still new.



GUIDE YOUR USER

Most people aren't used to engaging in open-ended conversations with bots. While most people are familiar with navigating a website to find what they need, they may not expect to be assisted by an intelligent bot. So, when prompted with a question from a bot such as, "Hello, how can I help you?", it's easy for users to feel overwhelmed.

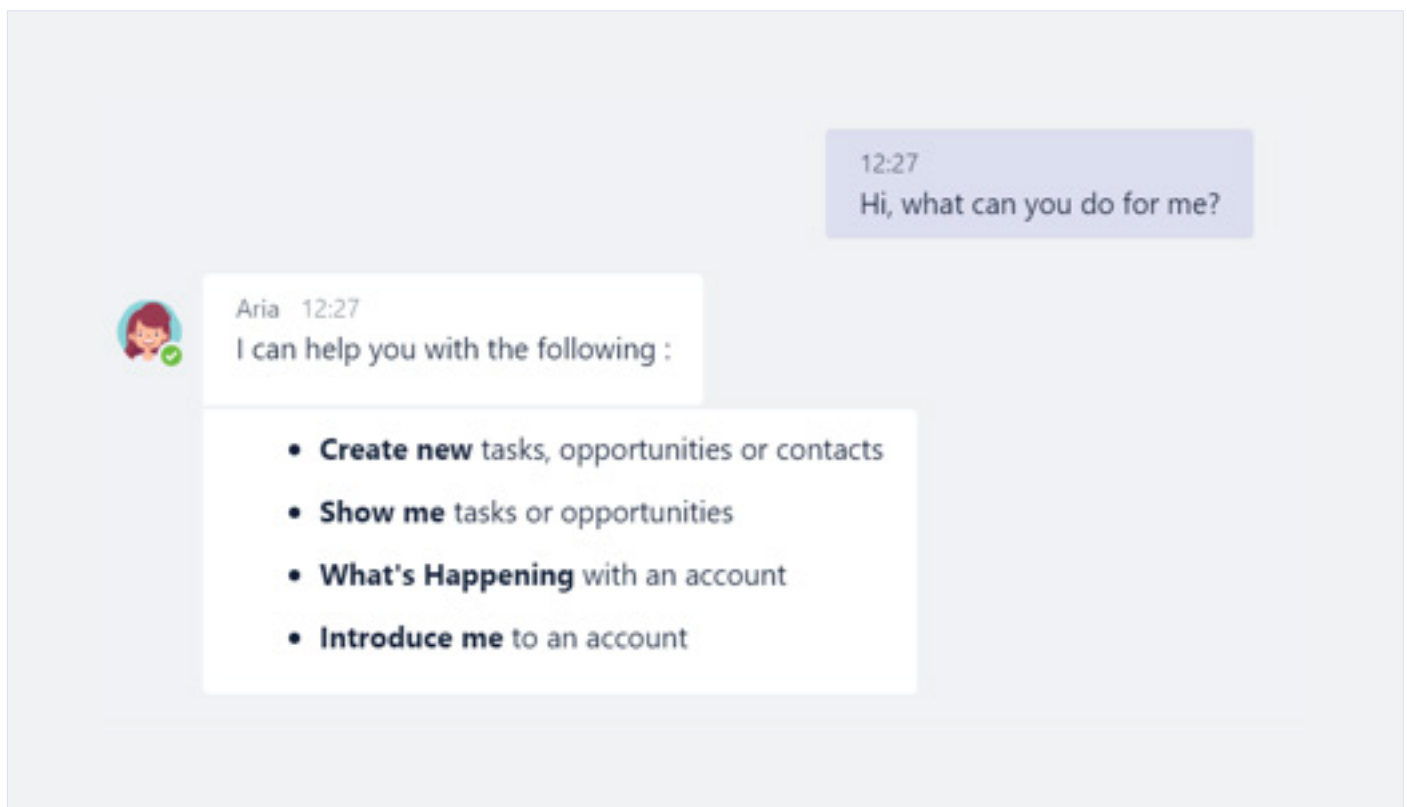
It's essential to guide your users about how best to interact with the bot. You might use familiar prompts like buttons to put users at ease, and then encourage users to type a response with a



specific guided command. It's best to use focused actionable statements ("Hello, I can help you with _____, _____ and _____") rather than open-ended ones ("Hi, what are you looking for?").

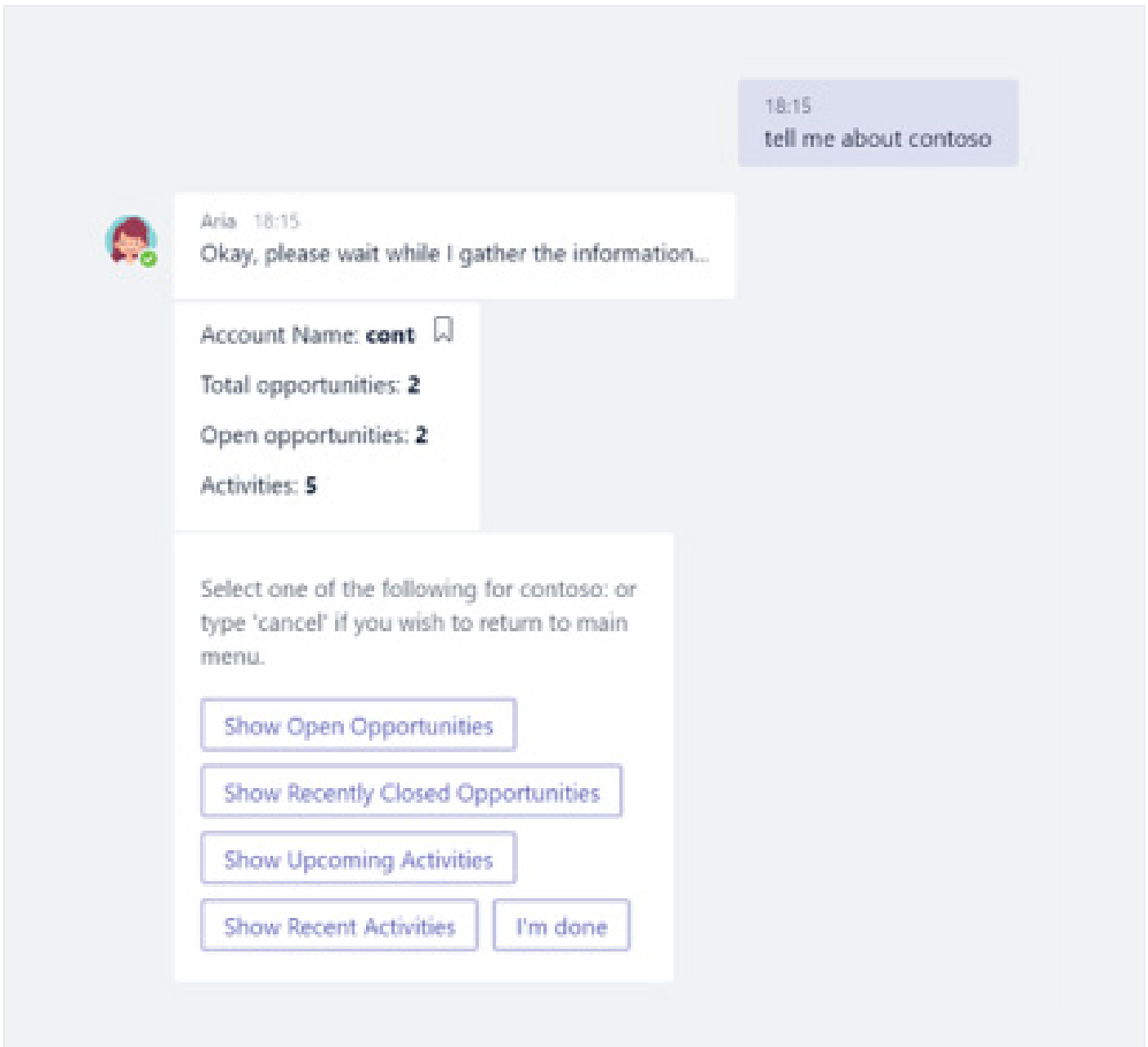
You can also educate users about how to interact with your bot. For example, you can create content blocks to catch mistakes and reroute conversation to a safe place. Similarly, you can teach your bot foundational conversation interactions and build triggers to resolve these common 'plays'. Some examples of these are listed below.

Below is an example of using "hints" to tell the user what you can do and how to interact with your bot.



Take advantage of the "limited controls", the example below presents the options as buttons to simplify user interaction.

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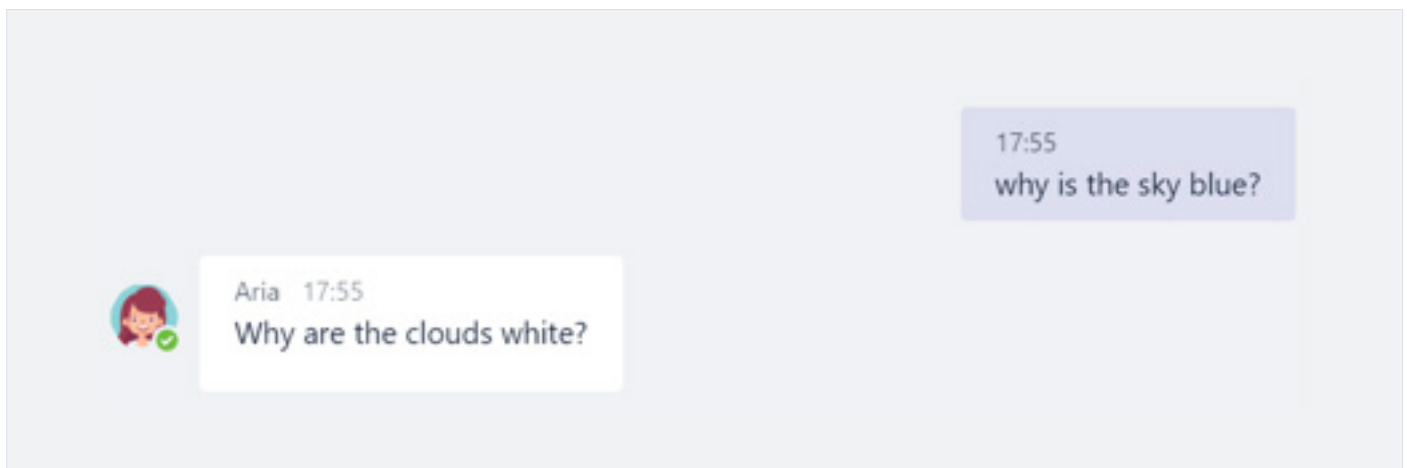
DESIGN WITH A PERSONALITY AND EMOTION

Fact: no-one likes a boring conversation, whether it's with a human or a bot. Personality and emotion are two major factors that set humans apart from computers, so when it comes to building a human-like bot, it's essential to build these in. Users will assume a personality even if you don't explicitly apply one. It's worth, then, investing time and effort in developing a personality for your bot that is consistent with your brand.

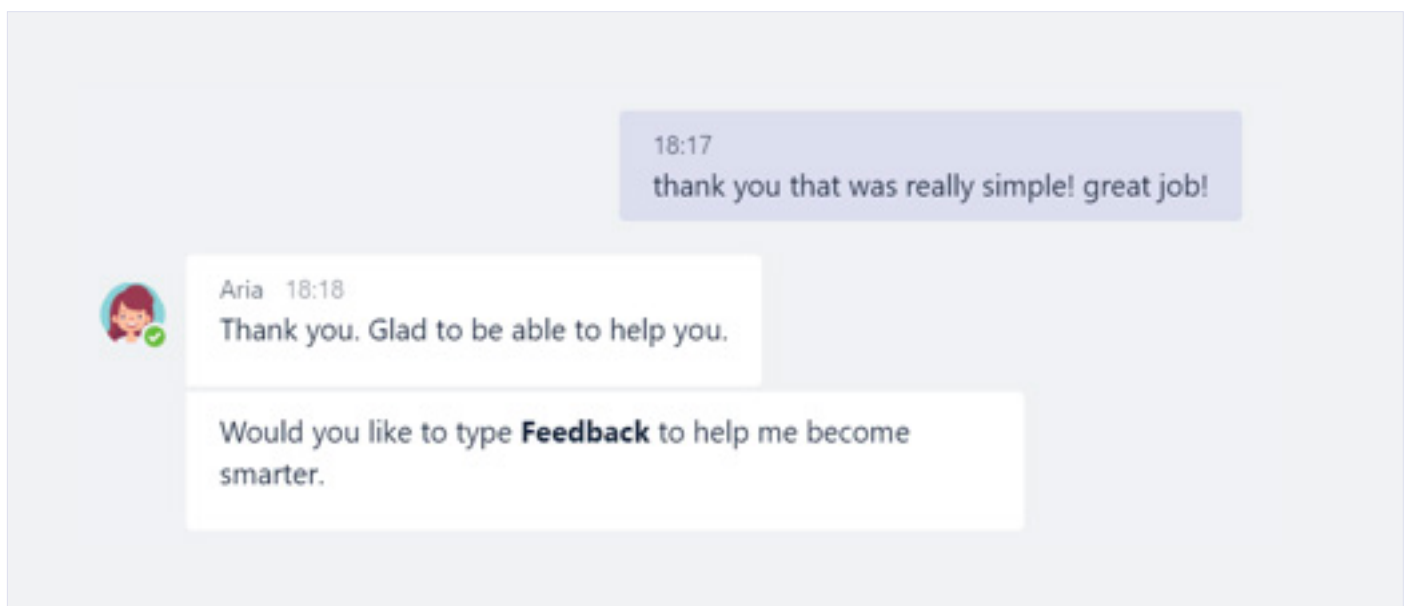
How can you make personality and emotion shine through in your bot?

- Use friendly, inclusive and polite language so users feel they can relate
- Act and respond with emotional language to build rapport
- Build trust with users by repeating inputs to confirm understanding
- Be transparent if the bot doesn't understand something
- Show that the bot is listening
- Take advantage of positive sentiments to encourage users to provide feedback
- Identify negative sentiments and seek feedback on how they can be addressed

Below is an example of small talk with the user.



Below is an example of taking a positive sentiment.



UNDERSTAND THAT NATURAL LANGUAGE CONVERSATION IS FLUID AND COMPLEX

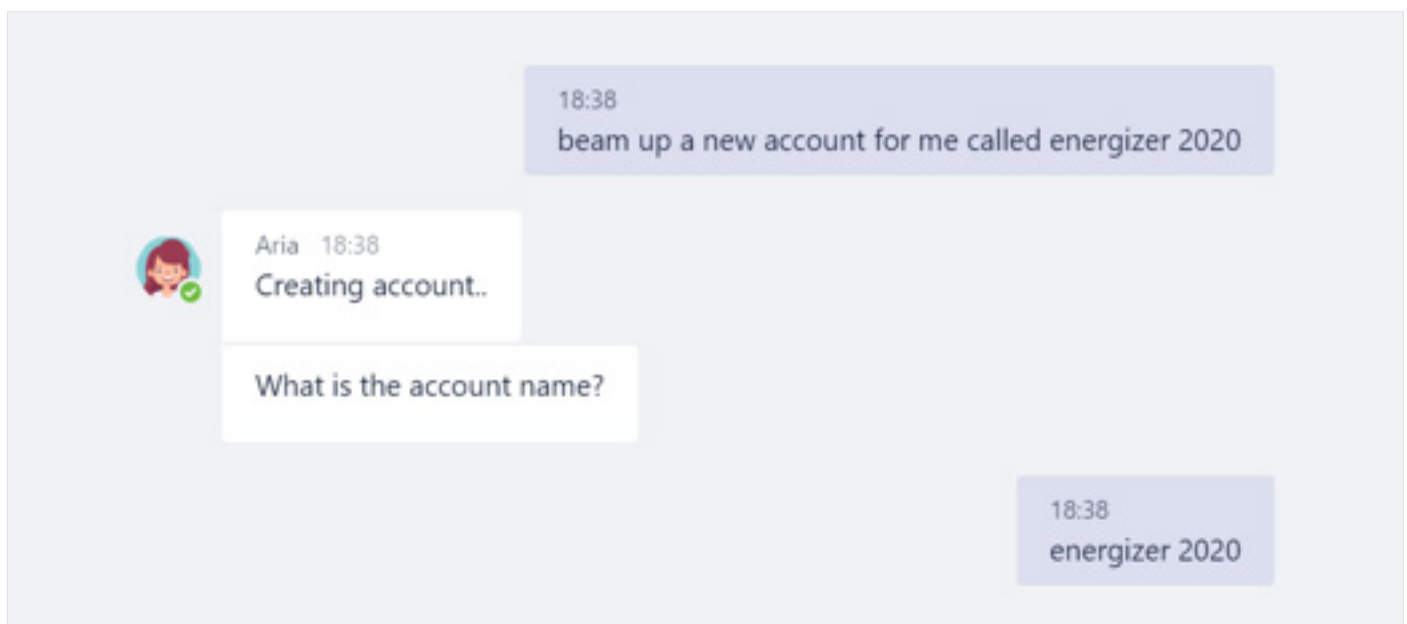
For a bot to successfully engage and re-engage users, it needs to handle the complexities of natural language. It must be prepared to handle:

- Misspellings and errors,
- Casual phrases,
- Slang words,
- Adaptations and abbreviations,
- Relative information such as date.

Moreover, bots should be able to recognise and respond to the same question or statement expressed in different ways.

The best way to improve your bot's natural language abilities is to teach it, then teach it some more. Expose your bot to different structures and show it that there are different ways to ask the same question. Be prepared to repeat this exercise continuously over time to cater for changes in words, phrases, questions and statements from users.

Make sure you design learning into your dialogs from the beginning. Below is an example of identifying learning opportunities.





The example above shows the bot didn't understand the name of the account, however, once the bot confirms the account name, we can simply check the original dialog, and now add "energizer 2020" as an account name.

PREPARE FOR YOUR BOT TO BREAK

With the potentially limitless nature of conversations, every bot will eventually encounter a situation it doesn't understand. This is inevitable. The best way to manage is by planning for breakage, and designing the experience so that it is minimally painful for users.

When your bot struggles to understand something, let the user know in clear terms and give them an opportunity to clarify ("I'm not sure I understand. Would you like to _____?"). Offering options to reroute will help your bot get back on track quickly, without frustrating the person on the other end of the conversation.

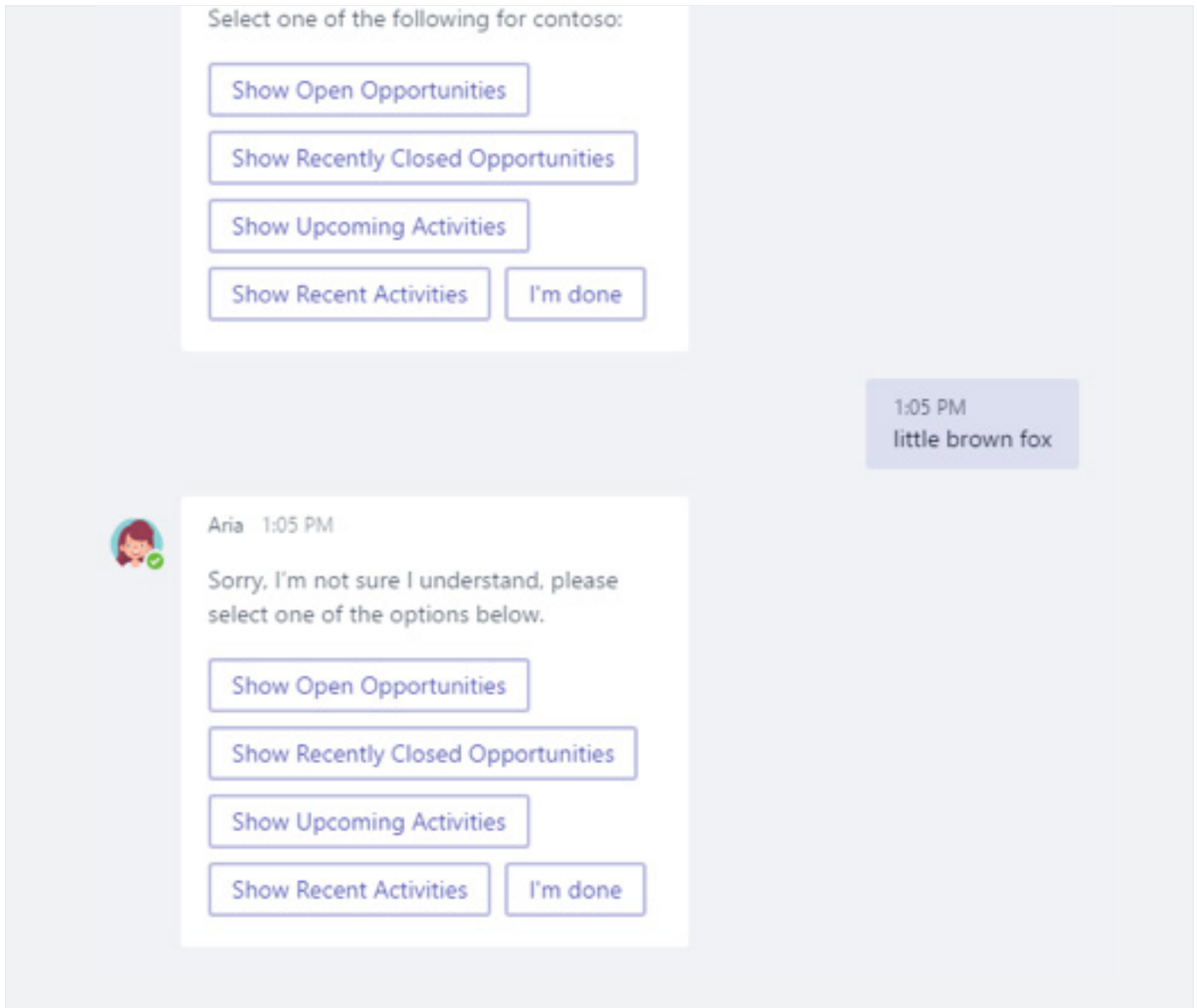
If the bot can't understand the user after seeking clarification, we recommend guiding the user to an escape route ("Would you like to restart?").

In any case, make sure your users always have a guide to help them interact with your bot - especially when the bot breaks.

The example below shows user ignore the presented options and buttons, and decides to manually enter a response that we can't match or understand.

It is important to acknowledge that we don't understand, and ask the user to select again. After certain number of retries, we should automatically take the user back to the main menu.

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TRACK AND LEARN

The single most effective way to improve your bot is to incorporate feedback from its interactions with users. To ensure your bot engages in effective and engaging conversation, it's important to understand the user experience. Identifying situations where the bot worked well are just as important as understanding situations where the bot failed.

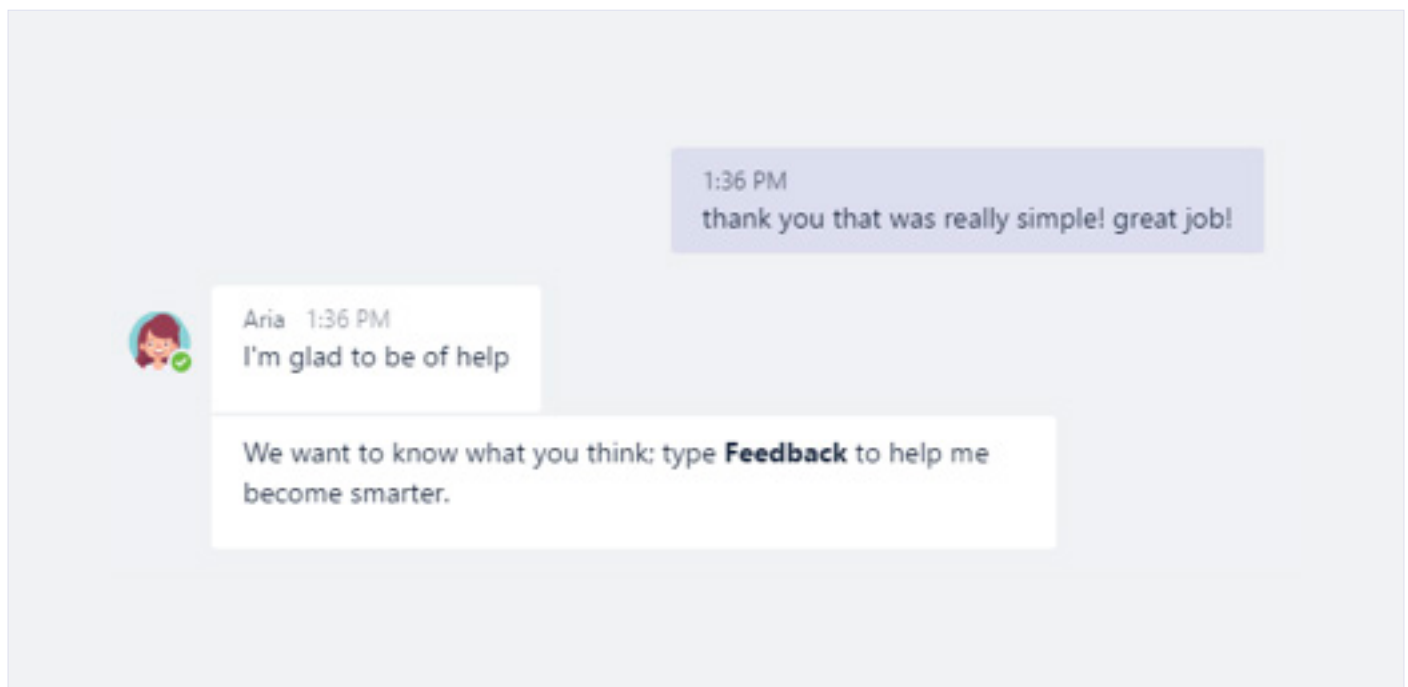
You can gather feedback on your bot by asking users directly ("Would you like to leave any feedback about our conversation today? Please type your thoughts"). If you receive negative feedback, take it as a learning opportunity and seek to understand how the issue can be



prevented in the future. For example, you can ask users to provide suggestions or links to content that the bot was missing.

Additionally, you can monitor the performance of your bot by tracking content and conversation as blocks. Look for patterns in where users leave or become stuck in loops, and target those areas to improve your bot.

It is important to identify these bottleneck or celebration moments. When designing your bot conversation, you should also consider storing all the dialogs for deeper analysis. The example above shows the bot didn't understand the name of the account, however, once the bot confirms the account name, we can simply check the original dialog, and now add "energizer 2020" as an account name.



THINK ABOUT GREETINGS

Greetings are a core ingredient of successful conversations. They contribute to people's first impressions and set the tone for the conversation that follows. Invest time in deciding how your bot will greet users, and in turn, how it will know that a user has initiated a greeting. For example, will the bot know when users address it by tagging it in a messaging platform like Slack? Defining your approach to greetings early will make sure conversations start off on the right foot.



Aria 19:40

Hi Johnny Chung, Can I help you with **Create** task, opportunity and contacts?

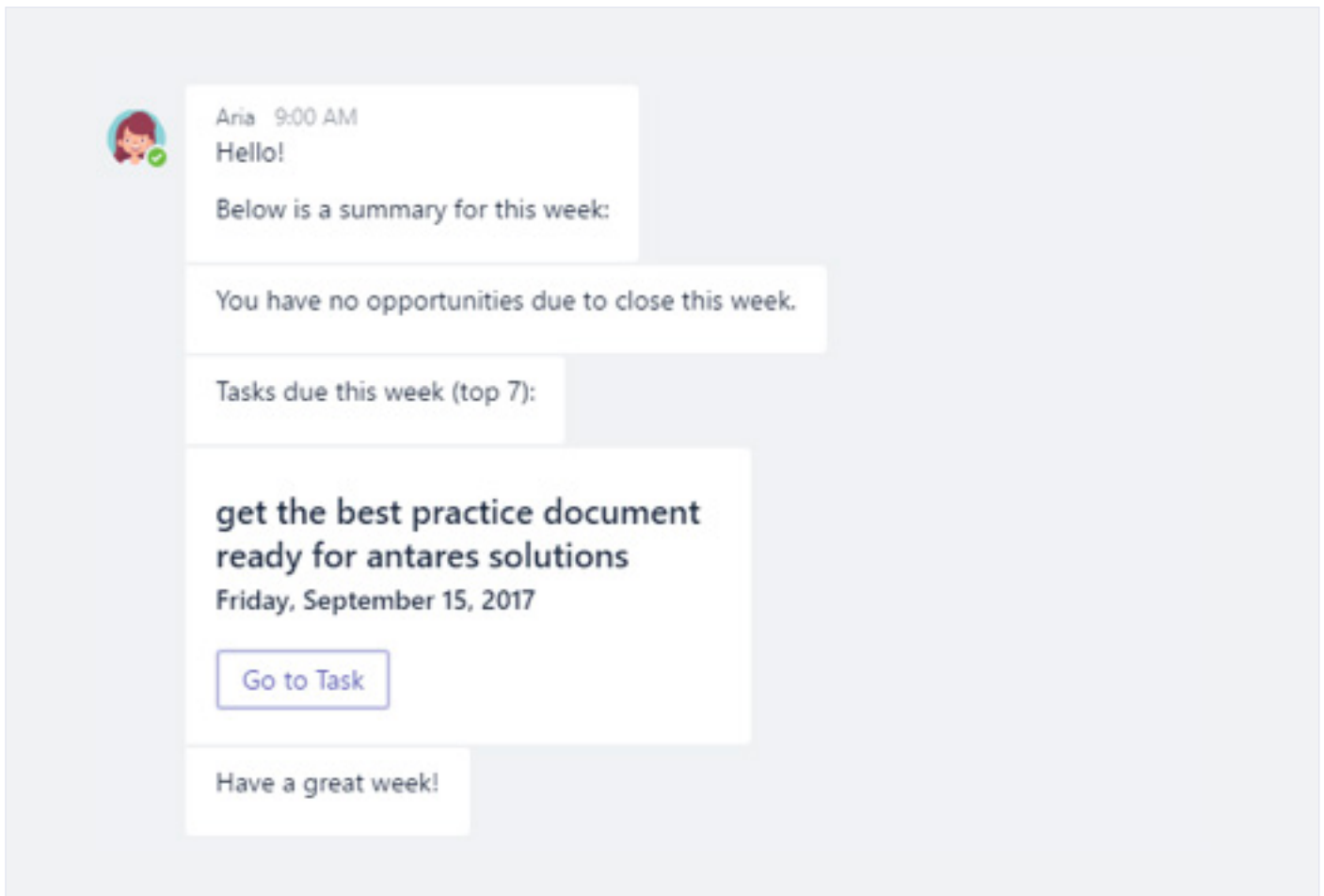
Or type **Help** to see what else I can do for you.

DECIDE WHETHER IT WILL BE PASSIVE, PROACTIVE OR BOTH

Conversational etiquette applies when users interact with bots. In social conversation, people get frustrated by others who continuously interrupt them, as well as by those who do not contribute as expected to a dialogue. Similarly with bots, it's a matter of courtesy to strike a balance between interrupting users with notifications or pop-ups, and waiting passively to be asked a question. Whichever way you lean, make sure your bot is not annoying or intrusive unless absolutely necessary.

Below is an example of a proactive message, sent at 9 AM on Monday:

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FAMILIARISE YOURSELF WITH INTENTS AND ENTITIES

For your bot to translate an array of phrases into appropriate actions, it needs to recognise both:

- User intent (what the user is trying to do)
- Entities (the key information surrounding a request)

For example, if a user says, "Can you schedule a meeting for tomorrow afternoon," the intent is to create a meeting. The entities are time (tomorrow afternoon) and a meeting that needs to be created.

Language Understanding Intelligent Services (LUIS) translate human sentences into something bots can understand by drawing out both the intent and entities from phrases and questions.

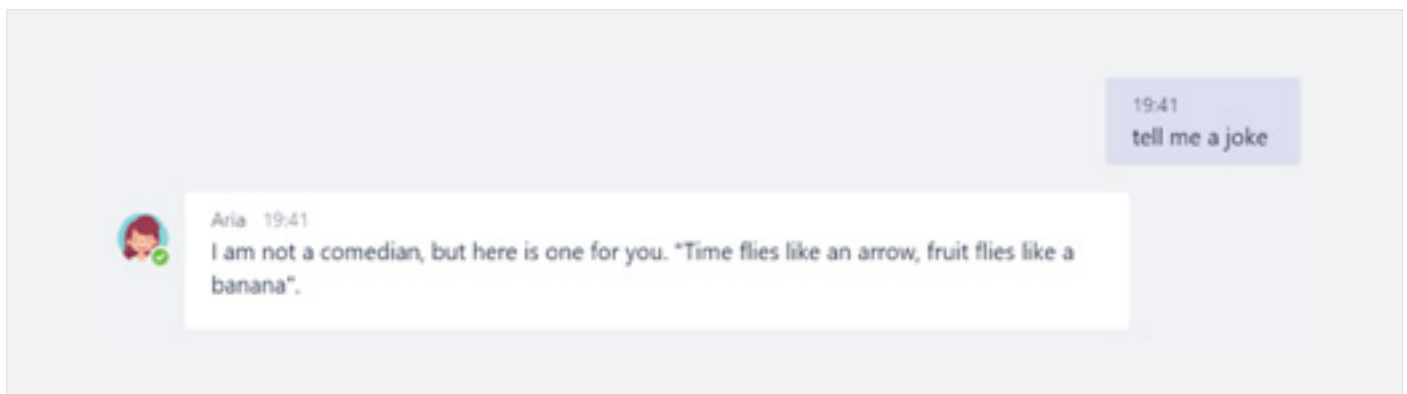


At a minimum, every bot should be able to leverage LUIS to handle common intents such as:

- Casual intents (small talk, generic)
- Greetings (hi, hello, good morning...)
- Affirmative (yes, sure...)
- Negative (no, that's not right...)
- Parting (goodbye, cya...)
- Help/purpose (help, what can you do?...)
- Joke (tell me a joke, make me laugh...)
- Weather (what's the weather like?...)

Additionally, a bot should use entities extensively so it can successfully perform the operations it is expected to complete.

Below is an example of small talk. Expect users to play with your bot.



Do your research into intent and entities early, and teach your bot to handle the components of language that are most relevant to the purpose it serves.

HAVE A CONVERSATION EXIT AND RETURN POINT

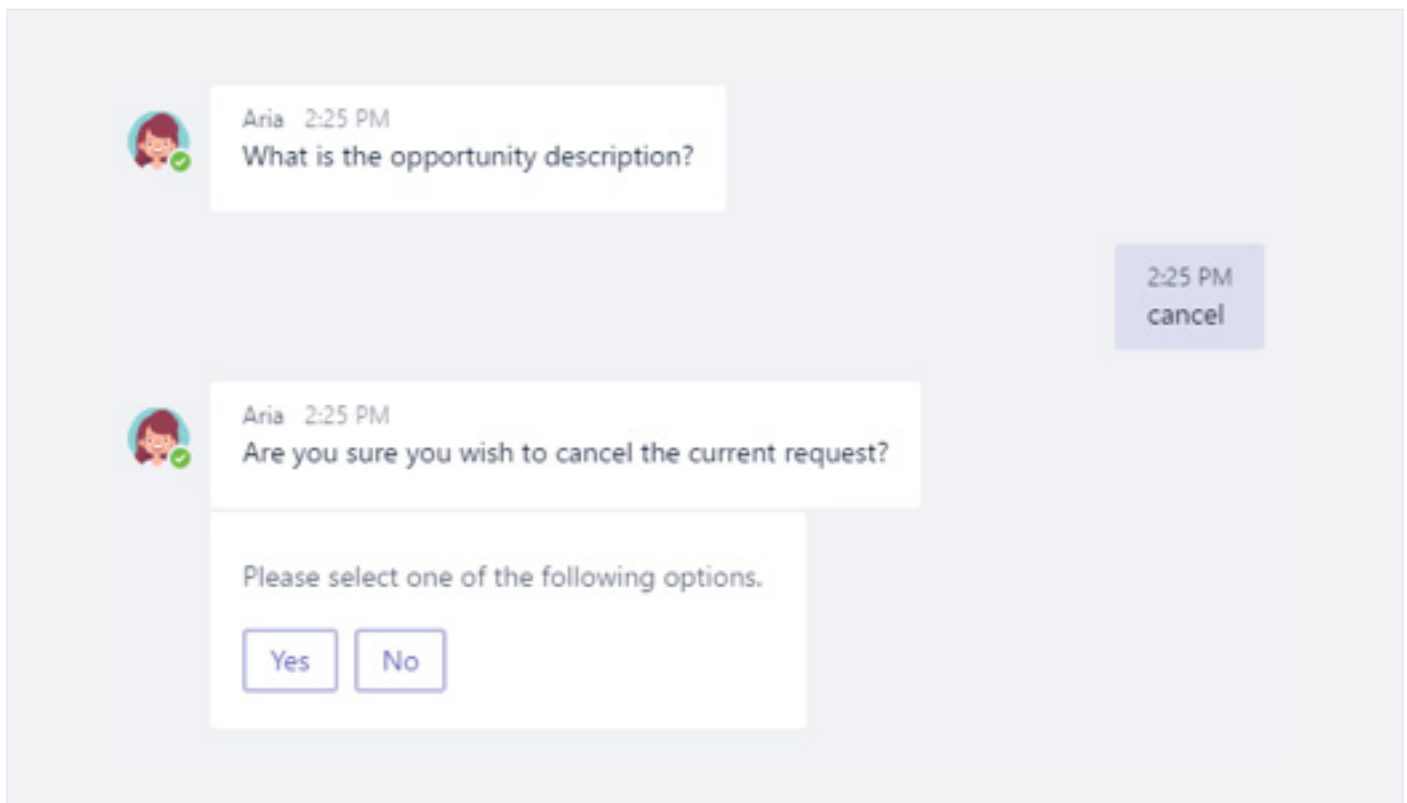
Your bot should have conversation exit and return points. This is important not only for breaks in conversation, but also for helping users to re-route when the bot doesn't understand.

A simple solution is to include a help menu that users can navigate of their own accord. You can even integrate feedback to continuously improve the bot. For example, if a user's question is not



listed in the help menu, the bot may prompt them to provide their question.

It is also useful to include breaks for the user's sake. Sometimes, the user may change their mind and want to restart. Having the option to cancel the current conversation and start a new one is vital.



THINK ABOUT HOW TO HANDLE WHEN A USER SIDETRACKS OR SAYS SOMETHING UNEXPECTED

Bots need to guide users in the best way to engage in conversation. One of a bot's most important responsibilities is keeping users focused and on track to ensure that actions are understood and completed.

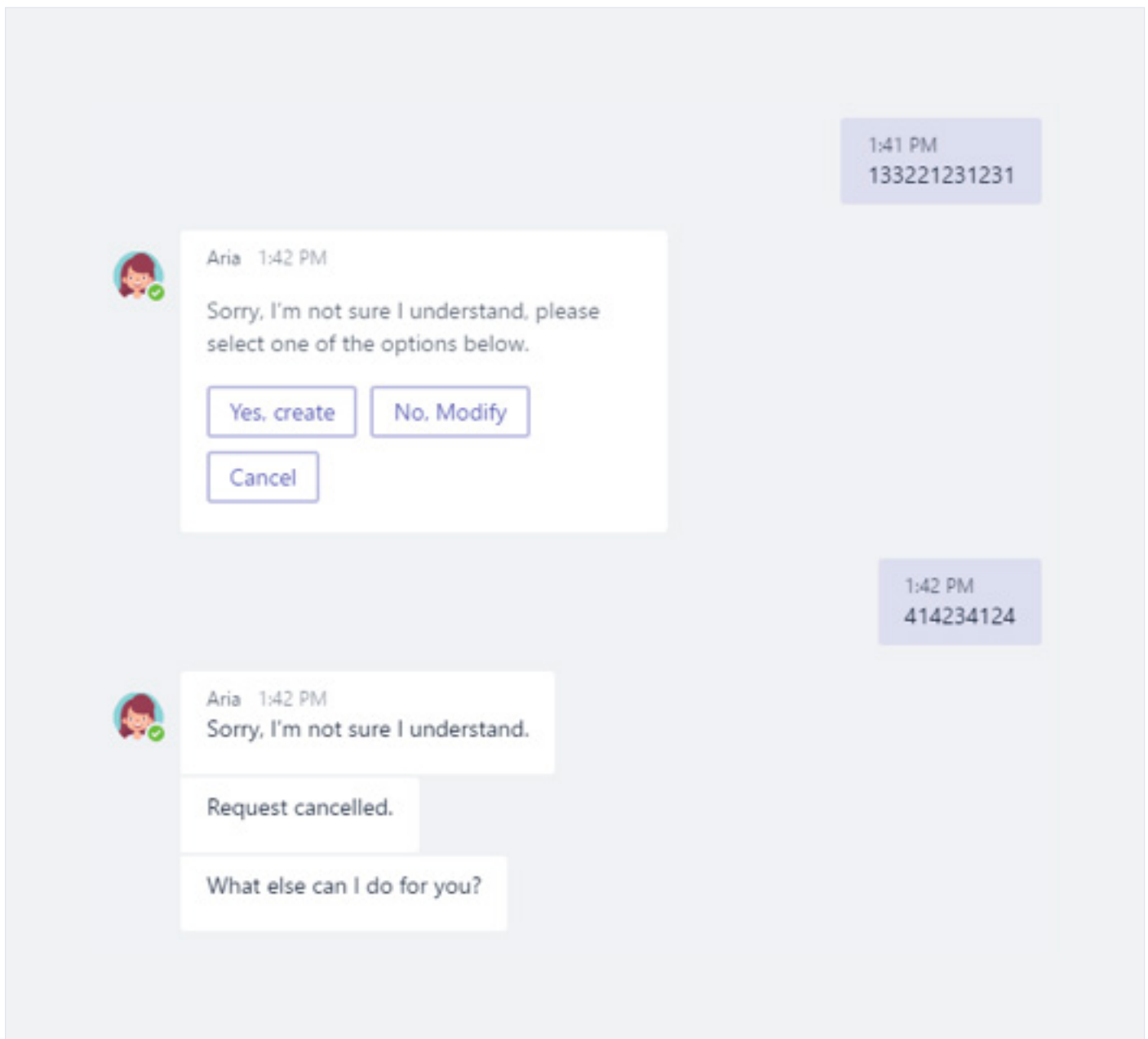
Unpredictable conversations can be challenging for bots. For example, if a bot asks a yes or no question and the user responds with a question, the bot needs to remember the conversation history and integrate multiple inputs.



Similarly, when a user sidetracks or provides an unexpected answer (i.e. If the bot says, "Do you want to meet at 9am or 10am?" and the user responds, "Wait, can we schedule for Tuesday instead?"), the bot may experience difficulties.

To prevent users from getting sidetracked, bots can maintain control over the conversation by advising users that they need to complete each task before moving on.

For example, the bot may say, "Please choose a meeting time before we change the date." If users continue to side-track the conversation, the bot should be firm and steer the conversation back to the original purpose that needs to be achieved.





CONSIDER COOPERATIVE CONVERSATION

Bots should apply principles of human cooperation to improve their effectiveness. When we acknowledge that something is correct, we tend to do so simply. However, when something is wrong, people usually provide a correction. If a bot were to ask, for example, "Your flight from Atlanta to Geneva is on 13 September at 6pm. Is that correct," the answers could include:

Yes	No
Yeah	No, not Geneva, Sydney
Correct	September 14th not 13th
That's right	AM not PM

Building cooperative conversation into your bot will increase the extent to which it is perceived as human-like. It will also help to achieve shared 'understanding' of a situation between a user and the bot.

REMEMBER THE SIX STEPS OF CONVERSATION

Human conversation is built on a six-step formula. Conversational UI can be designed around the same components to create a more natural, human-like interaction for users.

The basic mechanics of conversation to consider in conversational UI design are:

1. Open a channel to initiate conversation (A sends a message to B)
2. Commit to engage in conversation (B commits to conversation with A)
3. Construct meaning between parties (A and B connect on a series of structured ideas)
4. Evolve (A and/or B learn or gain something based on their interaction)
5. Converge on agreement (A and B reach an agreement, or move to repair the situation)
6. Act or interact (functional action may follow as a result)

While it isn't necessary to strictly follow these steps in all cases, it's useful to know before you start designing conversational user interfaces.

WHERE TO FROM HERE?

The future of bots is bright. There is enormous potential for bots to streamline processes, create efficiencies, better engage customers and simplify tasks, both in the business world and our personal lives. Understanding best practice conversational UI is instrumental in designing bots that are effective, engaging and operate in a genuinely human-like way, and in turn, enabling bots to unleash their full potential.

To find out more about chatbots and their practical applications in the workplace, visit antares.solutions. We've also built our own chatbot for Dynamics CRM. It's called Aria, and you can find out more about it [here](#).