

## **Guardian Monitor: An Overview of Dialogflow and Its Possible Use**

### **Parul Loyal**

Dialogflow is a tool that understands natural language, used mainly for creating chatbots and virtual assistants, which are conversational interfaces. Dialogflow is ideal for companies to improve customer service, automate operations, and increase user engagement. It is perfect for creating conversational interfaces that provide users with customised and simple interactions.

#### **Use of Application in Guardian monitor:**

Adding chatbots to the Guardian monitor can give users a more exciting interface. Users can receive broad advice and help in using the app, even in situations where they aren't required to communicate with a human, which reduces the effort to maintain the service.

#### **Features of Dialogflow:**

**Natural Language Processing:** Dialogflow quickly recognises and interprets user inputs in natural language, using modern NLP techniques to interpret and understand a wide range of user inquiries and intentions with their text messages.

**Knowledge of Intent:** This Intent feature allows developers to define multiple intents, which describe the various goals or reasons for what users do.

**Dialogflow's entity recognition:** These features allow the software to recognise and understand these entities, which leads to more accurate and appropriate results.

**Contextual Understanding:** Dialogflow has context understanding based on previous conversations with users. It also remembers context during a discussion to better understand follow-up questions and responses.

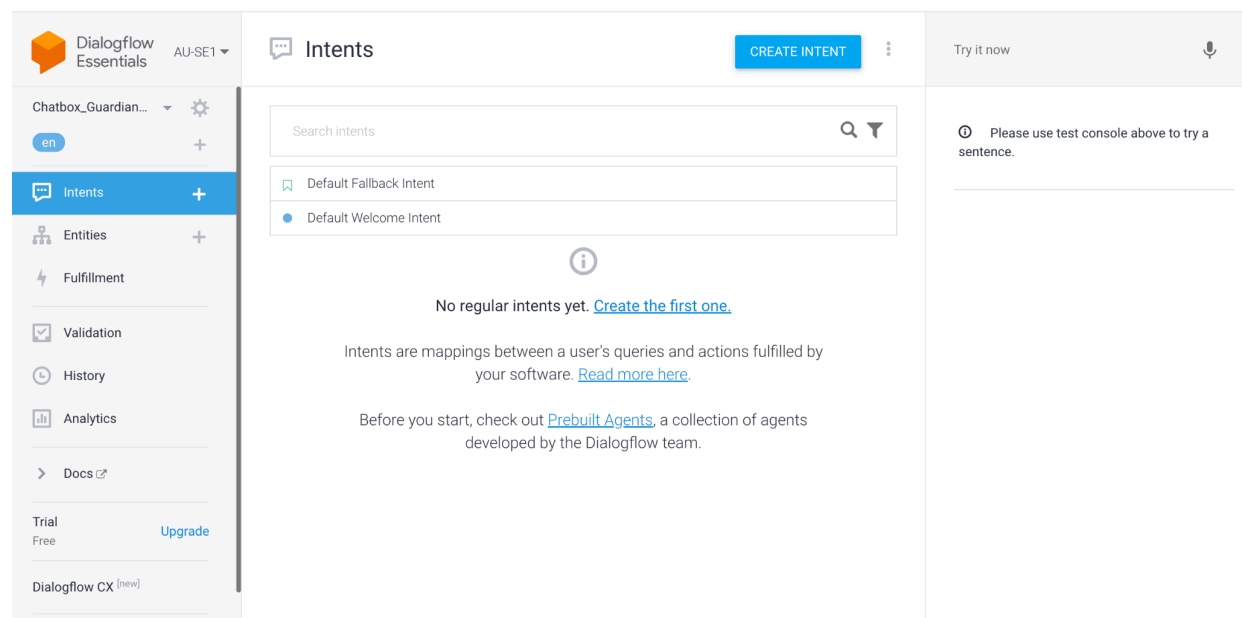
**Entity:** Entity extraction is the process of extracting important information from conversations, such as dates and numbers, so that the data can be used easily in the future and not just inside the chatbot.

**Multi-Language Support:** Chatbots can detect and respond appropriately to users in a variety of languages, as well as communicate in many languages.

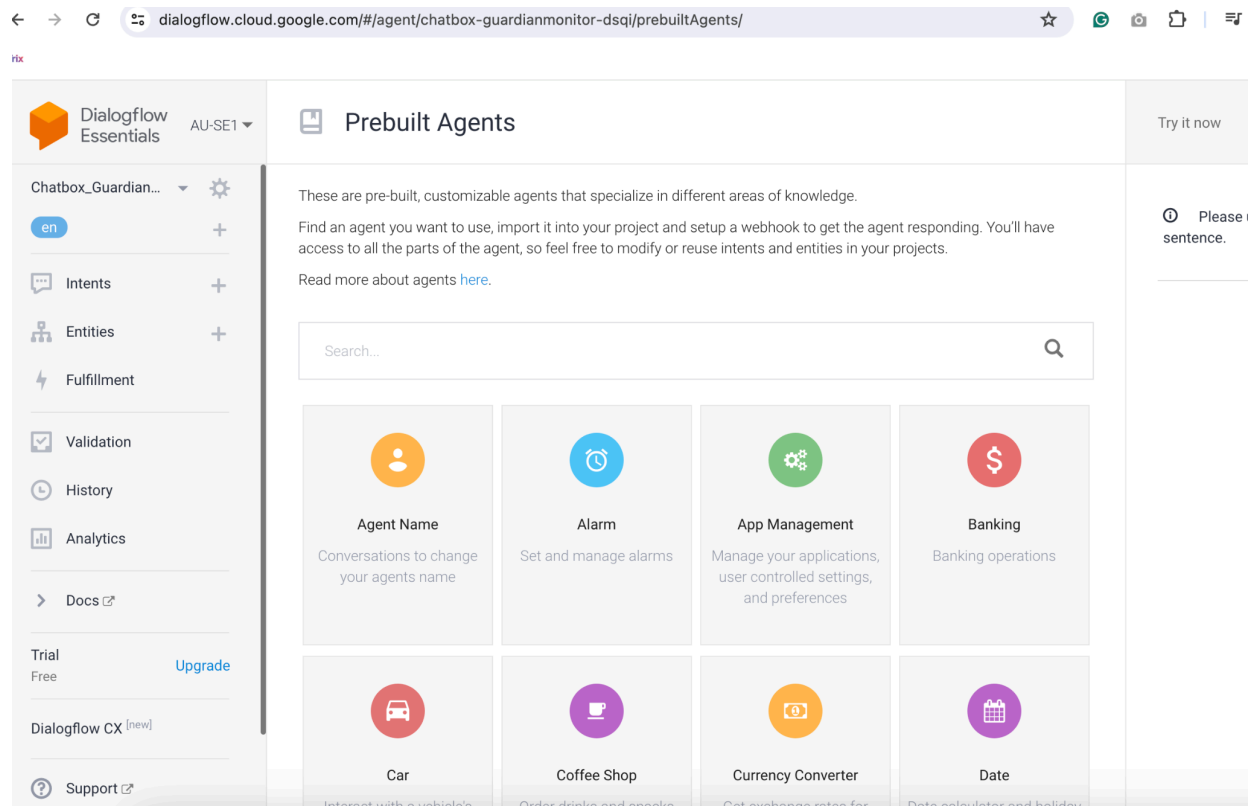
**Backend interaction:** The chatbots are capable of deciding whether to make database or API requests and using the data that they get to improve user interaction.

**Integration for Multiple Platforms:** Dialogflow facilitates the integration of conversational interfaces with a range of platforms, which includes mobile apps, websites, chat services like Facebook Messenger and Slack, and voice-activated gadgets like Amazon Echo and Google Assistant, Siri, and other voice-activated devices can be used to operate it.

### The Dialogflow Interface:-



This document contains dialogflow information, which needs to be entered into Communicate. Next, we have to get the agent's key and enter it as well. Press "Proceed." This should contain all the data required for Kommunicate to have access to the Dialogflow Agent.



Intents have a prebuilt agents template, we can import that and get all the elements regarding the template.

### Comparison between ChatGPT and Dialogflow:-

- We can use OpenAi ChatGPT for anything while Google Dialogflow is made especially for apps that deal with customers. It is possible to integrate OpenAi ChatGPT with various software applications. It is not possible to integrate Google Dialogflow with other software.
- Both ChatGPT and Dialogflow are good at conversation engagements and natural language processing, but they have different use cases and developer preferences. Dialogflow offers a comprehensive platform for creating specific chatbots and virtual assistants with advanced customisation and integration features, while ChatGPT is well-suited to generating responses that are natural and keep conversation context.

### Comparison between Dialogflow Microsoft's Bot Framework:

Although Dialogflow and Microsoft's Bot Framework are both great resources for creating conversation bots, they vary in terms of language/platform support, pricing structures, platform integration, development environment, and natural language processing (NLP) capabilities.

**A brief overview of the features that might be beneficial:**

The Guardian chatbot uses Entity extraction to gather appropriate information from user queries and deliver customised responses. Additionally, it has advanced messaging capabilities that let users interact with the chatbot using buttons and messages, pictures, and quick answers, among other forms. As a result, discussions become more vibrant and involved and the user experience is improved.

The smooth transition from chatbot to human support when needed depends on the bot-human handoff. It ensures that complex or delicate circumstances receive appropriate care in healthcare settings. Enhancing the Guardian chatbot's functionality with multi-language support and personalisation choices can appeal to a wide range of users and ensure that it conforms with project goals and branding.

**Dialogflow Useful for healthcare (Guardian Monitor Project):-**

We have the Guardian Monitor Project, which is related to the healthcare sector. Dialogflow can be a useful tool for several tasks, such as **administrative support, online help, and patient involvement.**

Healthcare organisations can improve patient involvement, access to care, and administrative operations while maintaining strict client privacy and data security rules by using Dialogflow's natural language understanding capabilities.

**Why do we need dialogflow in the healthcare sector/our project (Guardian Monitor)?****Improve Patient Engagement:**

- With Dialogflow, healthcare providers can create chatbots and virtual assistants that interact with patients.
- It can improve patient engagement and happiness by offering personalised help, responding to common questions, setting up appointments, as well as offering basic medical advice.

**Effective Scheduling of Appointments:**

- Healthcare facilities can use Dialogflow to establish chatbots that make patient scheduling easy.

**24/7 accessibility:**

- Patient satisfaction and achievements are improved by providing continuous accessibility, which ensures that patients can get quick care and help whenever they need it.

**Streamlined Communication:**

- Dialogflow handles routine tasks like medication refills, follow-up instructions, and appointment reminders, allowing healthcare providers to improve contact with patients.

**Scalability and Cost-Effectiveness:**

- Healthcare organisations may cost-effectively grow their patient engagement programmes by utilising Dialogflow to create chatbots and virtual assistance systems.

**Advantages:**

- **Simple to Use:-** Dialogflow offers a conversational interface-building interface that is easy to use for developers of different skill levels.
- **Understand natural language:-** Dialogflow's understanding abilities are provided by it, enabling developers to specify intentions and entities for precise user input recognition.
- **Multi-platform Support:-** Dialogflow allows developers to implement conversational interfaces across several platforms by supporting integration with a range of channels and platforms, such as voice assistants, mobile apps, websites, and messaging services.

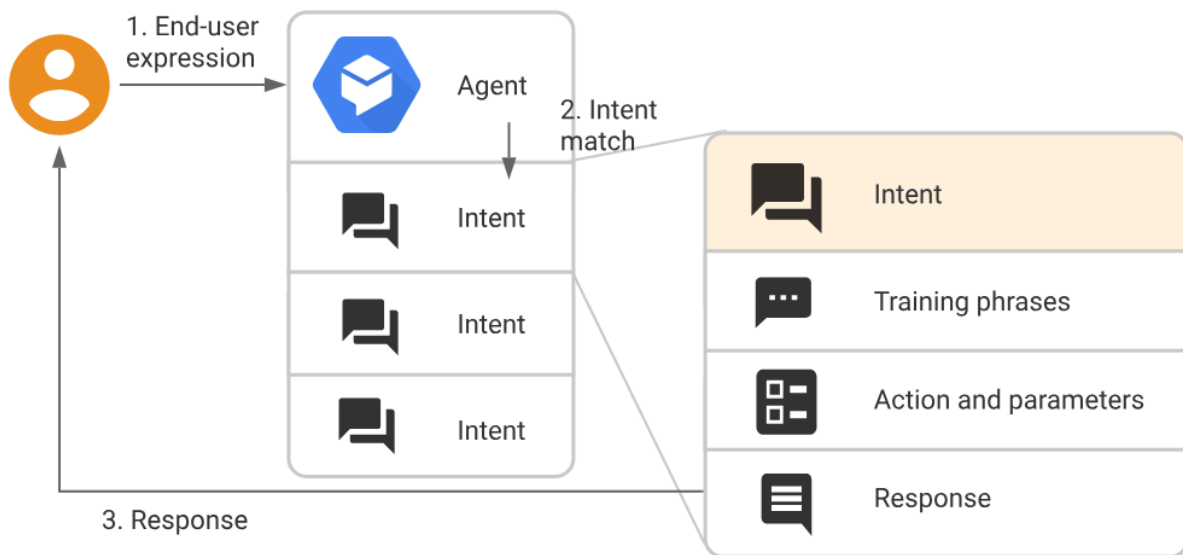
**Disadvantages:**

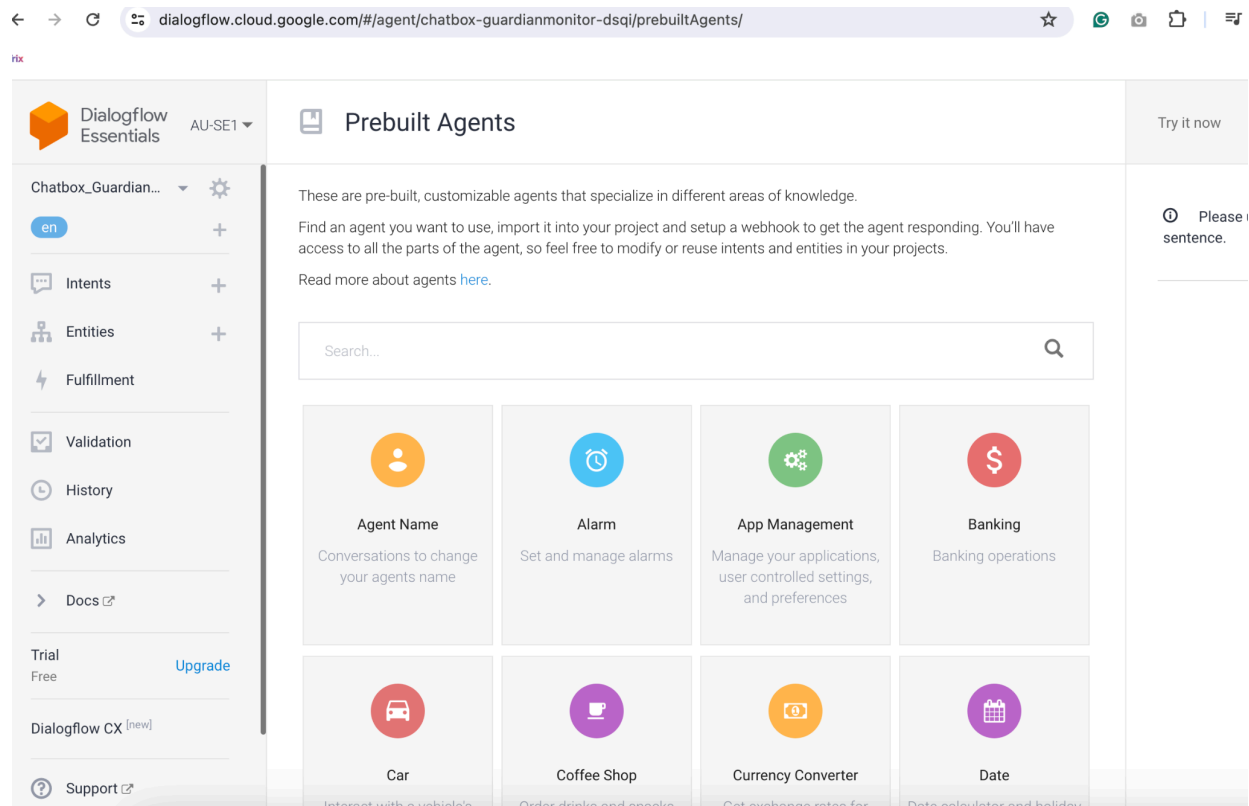
- **Dependency on Google Services:-** Given that Dialogflow is a Google product, issues with supplier lock-in and dependence on Google's services and infrastructure can arise.
- **Limited Control Over Training:-** Although Dialogflow has training features, developers might discover it difficult to adjust the underlying machine learning models and have little control over how the model is used in particular scenarios.
- **The complexity of Advanced Modification:-** While basic conversation processes are simple to start using, more complicated

dialogue management and advanced customisation may call for more work and knowledge from the development team.

### Week 6 & 7

- In week 6 and week 7. I worked on Dialogflow such as how to build on Dialogflow, such as Intents and responses.
- I had a chat with Taha and he helped to get access to Dialogflow and enabled the API for this. So could have worked on Dialogflow high-level architecture, how chatbots work in Dialogflow, with intents and responses, and how to create Agent "User Utterance". So that, I can create something relevant to Guardian/NutriHelp to showcase to you.





The above SS, Which has “Intents have a prebuilt agents template, we can import that and get all the elements regarding the template.”

## Research for how the Dialogflow is beneficial for the Guardian Monitor:

### A brief overview of the features that might be beneficial:

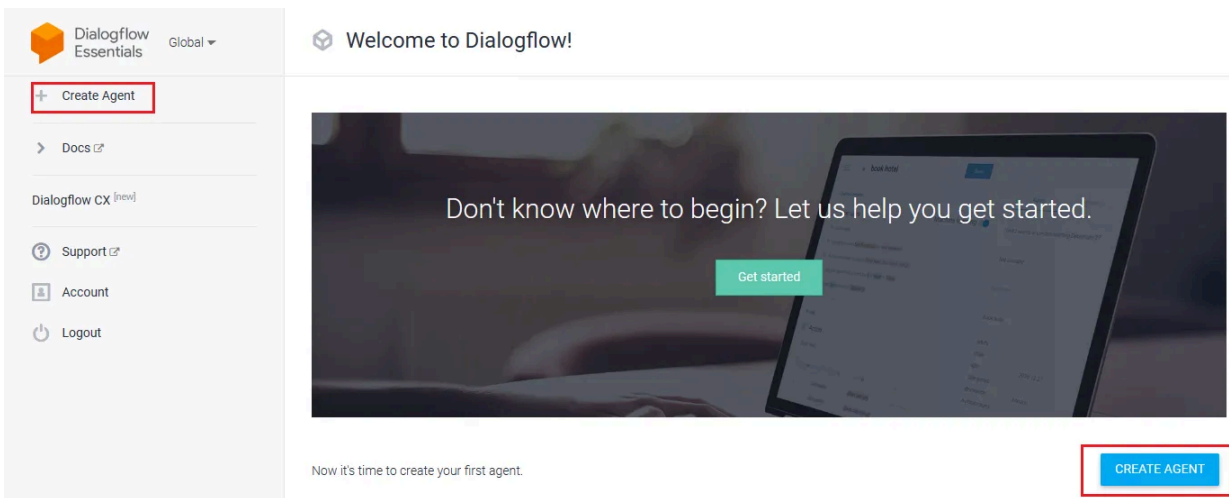
- The Guardian chatbot uses Entity extraction to gather appropriate information from user queries and deliver customised responses.
- Additionally, it has advanced messaging capabilities that let users interact with the chatbot using buttons and messages, pictures, and quick answers, among other forms.
- As a result, discussions become more vibrant and involved and the user experience is improved.

**Additional Contribution:- Take Minutes of the Meeting and share them in the group so that the Mentor will have everyone’s contribution towards the project.**

## Week 8 Progress

- Over this week, I have been working around the layout for the Guardian Monitor Chatbot and created a simple chatbot (Appointment Scheduler) with DialogFlow.
- I researched for creating a simple chatbot to implement the user's intent.
- I created the account on <https://dialogflow.cloud.google.com> and started working on this chatbot.
- I have also gone through some video links and articles. So that, I can get a complete idea of how I can implement the chatbot in our project.
- I had a chat with my peers to get more knowledge for creating the chatbot (Taha Talib). He guided me and provided some information for the dialogue flow.
- Below is the step-by-step implementation for the "**Appointment Scheduler**".

### Click on Create Agent.





## Created Agent Appointment Scheduler.

Dialogflow Essentials

AU-SE1

AppointmentSched...

en

Intents

Entities

Fulfillment

Validation

History

Analytics

Docs

Trial Free Upgrade

AppointmentScheduler

SAVE

General

Languages

ML Settings

Export and Import

Environments

Speech

Share

Advanced

DESCRIPTION

Describe your agent (will be used in Web Demo integration)

DEFAULT TIME ZONE

(GMT+10:00) Australia/Sydney

AGENT AVATAR URI

Define URI to agent avatar that will be used in Web Demo and Google Chat integrations.

GOOGLE PROJECT

Project ID chatbox-guardianmonitor-vmcd

## Dialogflow creates the following two default intents as a part of the agent:

Intents

CREATE INTENT

Search intents

Default Fallback Intent

Default Welcome Intent


No regular intents yet. [Create the first one.](#)

Intents are mappings between a user's queries and actions fulfilled by your software. [Read more here.](#)

Before you start, check out [Prebuilt Agents](#), a collection of agents developed by the Dialogflow team.

Let's test our chatbot now.

Try it now




Agent

USER SAYS

Hello

COPY CURL

 DEFAULT RESPONSE

Hello! How can I help you?

INTENT

Default Welcome Intent

ACTION

input.welcome


SENTIMENT

Query Score: 0.2

DIAGNOSTIC INFO

**Enter a phrase which is unknown to the chatbot and it will respond with Default Fallback intent.**

Try it now




Agent

USER SAYS

COPY CURL

Set an appointment

 DEFAULT RESPONSE

▼

Sorry, can you say that again?

CONTEXTS

RESET CONTEXTS

\_\_system\_counters\_\_

INTENT

Default Fallback Intent

ACTION

input.unknown

SENTIMENT

Query Score: 0.1

DIAGNOSTIC INFO

## Create a custom intent and add the training phrases.

Schedule Appoitment

SAVE

Contexts ?

Events ?

Welcome

Add event

Training phrases ?

Search training phrases

Template phrases are deprecated and will be ignored in training time. More details [here](#).

When a user says something similar to a training phrase, Dialogflow matches it to the intent. You don't have to create an exhaustive list. Dialogflow will fill out the list with similar expressions. To extract parameter values, use [annotations](#) with available [system](#) or [custom](#) entity types.

Add user expression

Please schedule my appointment for 9 AM on Wednesday.

I need to book an appointment for 3 PM tomorrow.

I would like to set an appointment for 3 PM on Tuesday.

Need an appointment for 4 PM tomorrow

Set an appointment on Wednesday at 2 PM

PARAMETER NAME	ENTITY	RESOLVED VALUE	
date	@sys.date	Wednesday	×
time	@sys.time	2 PM	×

Action and parameters

Enter action name

REQUIRED	PARAMETER NAME	ENTITY	VALUE	IS LIST
<input type="checkbox"/>	date	@sys.date	Sdate	<input type="checkbox"/>
<input type="checkbox"/>	time	@sys.time	Stime	<input type="checkbox"/>

+ New parameter

Added some responses.

Responses

DEFAULT

Text Response

1

You are all set. See you then!

2

You are all set for Sdate at Stime. See you then!

3

Enter a text response variant

ADD RESPONSES

☐

Set this intent as end of conversation

## Tested the newly created intent using the chatbot.

Schedule Appointment

SAVE

Template phrases are deprecated and will be ignored in training time. More details [here](#).

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” Add user expression

” Please schedule my appointment for 9 AM on Wednesday.

” I need to book an appointment for 3 PM tomorrow.

” I want to fix an appointment for 4 PM on Friday.

” Set an appointment on Thursday at 4 PM

Try it now

Agent

USER SAYS

COPY CURL

Set an appointment on Thursday at 4 PM

DEFAULT RESPONSE

Great, all set for 2024-05-05T15:00:00+10:00. See you then!

INTENT

Schedule Appointment

ACTION

input.welcome

## Slot filling.

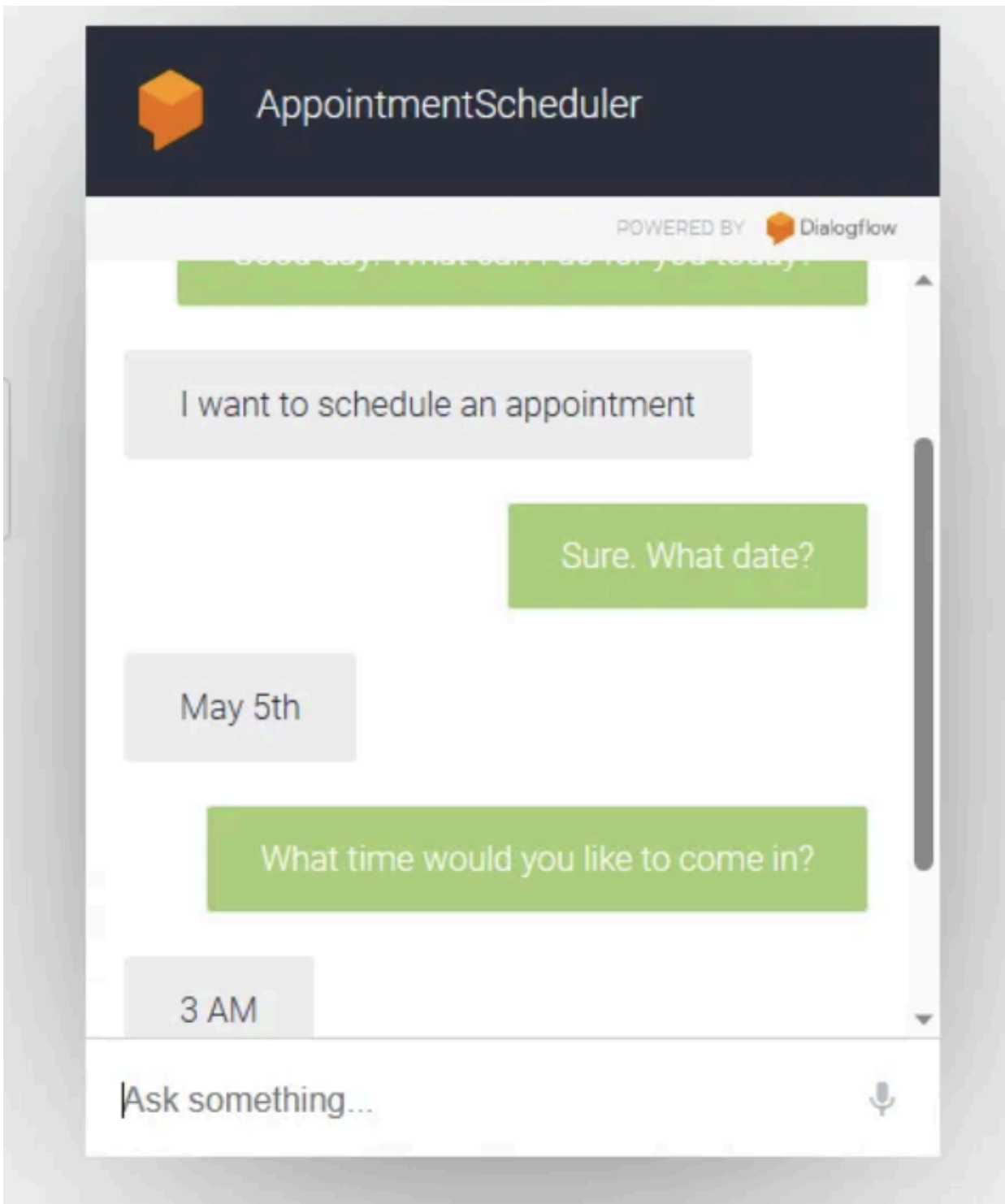
### Action and parameters

input.welcome

REQUIRED ?	PARAMETER NAME ?	ENTITY ?	VALUE	IS LIST ?	PROMPTS ?
<input checked="" type="checkbox"/>	date-time	@sys.date-time	\$date-time	<input type="checkbox"/>	What time would...
<input checked="" type="checkbox"/>	date	@sys.date	\$date	<input type="checkbox"/>	What date? [1]
<input type="checkbox"/>	Enter name	Enter entity	Enter value	<input type="checkbox"/>	—

+ New parameter

Unfortunately, I could not complete this step for my chatbot this week as I could not find the way to go to the console.



In the upcoming week, I will for sure try to complete this "Appointment Scheduler chatbot."

**Additional Contribution:-** Take the minutes of meetings and also manage the contribution sheet for weekly mentor calls.