

¿CÓMO FUNCIONA UN CHATBOT? EL SISTEMA DE NLU

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#PyLadiesNLP

AGENDA

1. NLU
2. Estructura básica y lingüística
3. Sistemas de NLU
 - Dialogflow
 - Lex
 - Watson
 - LUIS
 - Más
4. Conclusiones

NATURAL LANGUAGE UNDERSTANDING (NLU)

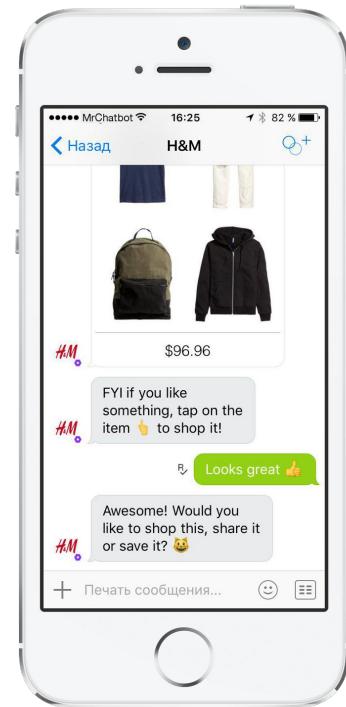
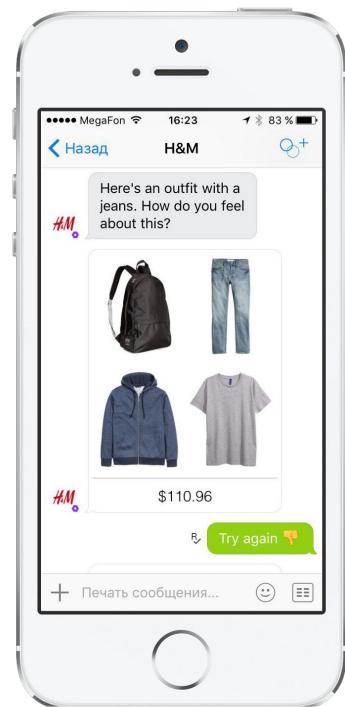
Ejemplo: chatbot para una tienda de ropa

ASR: reconocimiento del lenguaje oral

NLU: recibe mensajes y devuelve mensajes

Conexión al catálogo

UI: interfaz gráfica



ESTRUCTURA BÁSICA COMÚN

Intent = Intención del hablante.

Por ejemplo: "hacer un pedido", "pedir ayuda técnica", "comprobar un vuelo"

Intención, unidad de la pragmática ("cierra la ventana" = "pasa mucho fresco, ¿no?")

Entidades = Tipo de información necesaria para satisfacer la intención.

Por ejemplo: "talla", "navegador", "hora"

Valores = Las instancias de las entidades en cada query

Por ejemplo: "una 38", "Chrome", "las 18:00"

Resma o información nueva (vs. tema o información conocida)

Contexto = Información que se puede obtener sin input del usuario.

Situación comunicativa

DIALOGFLOW

The screenshot shows the Dialogflow web interface for managing a conversational agent named "Reserbot".

Left Sidebar:

- Agent name: Reserbot
- Language: en
- Navigation menu:
 - Intents** (selected)
 - Entities
 - Training [beta]
 - Integrations
 - Analytics [new]
 - Fulfillment
 - Prebuilt Agents
 - Small Talk
 - Docs

Top Bar:

- Dialogflow logo
- Project name: Reserbot
- Region: en
- Settings icon

Intents Page:

- Header: Intents
- Buttons: CREATE INTENT, More options
- Search bar: Search intents
- List of intents:
 - Default Fallback Intent
 - Default Welcome Intent
 - ReserveRestaurant

Right Panel:

- Text input field: Try it now
- Microphone icon
- Info message: Please use test console above to try a sentence.
- Link: See how it works in Google Assistant.

DIALOGFLOW

Dialogflow

Reserbot en

Intents +

Entities +

Training [beta]

Integrations

Analytics [new]

Fulfillment

Prebuilt Agents

Small Talk

Docs

ReserveRestaurant

SAVE

Try it now

Contexts ?

Events ?

Training phrases ?

Add user expression

Can you make a reservation at Alfredo's, please?

A table for 3 people, please

I want a table at Goiko Grill

I want a table for two at Goiko Grill

I want to make a reservation for Thursday, 2 pm

A table for five

Please use test console above to try a sentence.

See how it works in Google Assistant.

DIALOGFLOW

Dialogflow

Reserbot en Intents Entities Training [beta] Integrations Analytics [new] Fulfillment Prebuilt Agents Small Talk Docs

• ReserveRestaurant

SAVE

Action and parameters

ReserveRestaurant

| REQUIRED | PARAMETER NAME | ENTITY | VALUE | IS LIST | PROMPTS |
|-------------------------------------|----------------|------------|-------------|--------------------------|---------------------|
| <input checked="" type="checkbox"/> | number | @number | Snumber | <input type="checkbox"/> | Okay, for how m... |
| <input checked="" type="checkbox"/> | restauran | @restauran | Srestaura | <input type="checkbox"/> | Okay, wh ere do ... |
| <input checked="" type="checkbox"/> | time | @sys.tim | Stime | <input type="checkbox"/> | And what time? ... |
| <input type="checkbox"/> | date | @sys.dat | Sdate | <input type="checkbox"/> | — |
| <input type="checkbox"/> | Enter nan | Enter enti | Enter value | <input type="checkbox"/> | — |

+ New parameter

Responses

Try it now

Please use test console above to try a sentence.

See how it works in Google Assistant.

DIALOGFLOW

The screenshot shows the Dialogflow web interface for configuring an intent named "ReserveRestaurant".

Intent Configuration:

- Name:** ReserveRestaurant
- Actions:** Reservar restaurante
- Entities:** number
- Prompts:** A list of 5 prompts for the "number" entity.

Prompts for "number":

| NAME | ENTITY | VALUE |
|--------|---------|----------|
| number | @number | \$number |

PROMPTS:

- 1 Okay, for how many people?
- 2 Okay! Let me see if we have tables at Stime in Srestaurant... How many people are coming?
- 3 Ok, how many people are coming to Srestaurant?
- 4 Ok, Stime. Now, how many people are coming?
- 5 Enter a prompt variant

Buttons:

- SAVE
- Try it now
- Close

Side Panel:

- Reserbot
- en
- Intents
- Entities
- Training [beta]
- Integrations
- Analytics [new]
- Fulfillment
- Prebuilt Agents
- Small Talk
- Docs

Right Panel:

- Please use test console above to try a sentence.
- See how it works in Google Assistant.

DIALOGFLOW

The screenshot shows the Dialogflow web interface for managing a conversational agent named "Reserbot".

Left Sidebar:

- Dialogflow logo
- Project name: Reserbot
- Language: en
- Intent tab (selected)
- Entities
- Training [beta]
- Integrations
- Analytics [new]
- Fulfillment
- Prebuilt Agents
- Small Talk
- Docs

Main Content Area:

Intent: ReserveRestaurant

Responses:

- DEFAULT: Okidoki, I've made a reservation for \$number people at \$restaurant \$time!
- GOOGLE ASSISTANT: I just got you a table at \$restaurant for \$number people, \$date at \$time
- Text response variant: Enter a text response variant

Add Responses

Set this intent as end of conversation (checkbox checked)

Fulfillment:

Try it now (with microphone icon)

Please use test console above to try a sentence.

See how it works in Google Assistant (with link icon)

DIALOGFLOW

Dialogflow Entities

CREATE ENTITY

Reserbot en Intents Entities +

Search entities

@number
@restaurant

restaurant

SAVE

Define synonyms ? Allow automated expansion

| | |
|--------------------------|--------------------|
| Gino's | Gino's |
| Foster's Hollywood | Foster's Hollywood |
| Goiko Grill | Goiko Grill |
| Alfredo's | Alfredo's |
| Click here to edit entry | |

Delete
Cancel
Switch to raw mode

+ Add a row

DIALOGFLOW

Try it now

SAVE

Agent Domains

USER SAYS COPY CURL

A table for six, please

DEFAULT RESPONSE PLAY

Ok, now where do all 6 of you want to go?

CONTEXTS RESET CONTEXTS

1941b904-6ab9-4e73-911e-b59e50e33a
cc_id_dialog_context

reserverestaurant_dialog_context

reserverestaurant_dialog_params_restau
rant

INTENT ReserveRestaurant

INTENT
ReserveRestaurant

ACTION
ReserveRestaurant

PARAMETER VALUE
number 6
restaurant
time
date

SHOW JSON

DIALOGFLOW

| Agent | Domains |
|--|----------------|
| USER SAYS To Alfredo's | COPY CURL |
| DEFAULT RESPONSE Tell me a time so I can make the reservation at Alfredo's for all 6 of you, honey | PLAY |
| CONTEXTS 1941b904-6ab9-4e73-911e-b59e50e33a cc_id_dialog_context | RESET CONTEXTS |
| reserverestaurant_dialog_params_time | |
| reserverestaurant_dialog_context | |
| INTENT ReserveRestaurant | |

| INTENT |
|-------------------|
| ReserveRestaurant |

| ACTION |
|-------------------|
| ReserveRestaurant |

| PARAMETER | VALUE |
|------------|-----------|
| restaurant | Alfredo's |
| number | 6 |
| time | |
| date | |

| SHOW JSON |
|---|
| { "intent": "ReserveRestaurant", "action": "ReserveRestaurant", "parameters": { "restaurant": "Alfredo's", "number": 6, "time": null, "date": null } } |

| Agent | Domains |
|---|-------------------|
| USER SAYS 10 pm? | COPY CURL |
| DEFAULT RESPONSE Okidoki, I've made a reservation for 6 people at Alfredo's 22:00:00! | PLAY |
| CONTEXTS | RESET CONTEXTS |
| INTENT ReserveRestaurant | |
| ACTION | ReserveRestaurant |
| PARAMETER | VALUE |
| time | 22:00:00 |
| number | 6 |
| restaurant | Alfredo's |

DIALOGFLOW

Dialogflow

Reserbot en

Intents Entities Training [beta] Integrations Analytics [new] Fulfillment Prebuilt Agents Small Talk Docs

Small Talk

SAVE

Enable

Small Talk Customization Progress

| | |
|---------------|------|
| About agent | 16% |
| Courtesy | 50% |
| Emotions | 0% |
| Hello/Goodbye | 100% |
| About user | 0% |
| Confirmation | 0% |

Try it now

Agent Domains

USER SAYS COPY CURL
10 pm?

DEFAULT RESPONSE PLAY
Okidoki, I've made a reservation for 6 people at Alfredo's 22:00:00!

INTENT ReserveRestaurant

ACTION ReserveRestaurant

PARAMETER VALUE
time 22:00:00

number 6

restaurant Alfredo's

DIALOGFLOW

Intents

CREATE INTENT

Search intents

Default Fallback Intent

Default Welcome Intent

Default Welcome Intent - yes

Default Welcome Intent - no

ReserveRestaurant

A screenshot of the Dialogflow interface, specifically the 'Intents' section. At the top, there's a search bar labeled 'Search intents' with a magnifying glass icon and a dropdown arrow. To the right of the search bar is a blue button labeled 'CREATE INTENT'. Below the search bar is a list of intents. The first intent is 'Default Fallback Intent' with a green bookmark icon. The second intent is 'Default Welcome Intent', which has a blue circle icon and a dropdown arrow indicating it has sub-intents. Underneath it are two sub-intents: 'Default Welcome Intent - yes' and 'Default Welcome Intent - no', both preceded by blue circle icons and right-pointing arrows. The final intent listed is 'ReserveRestaurant', also preceded by a blue circle icon.

DIALOGFLOW

• Default Welcome Intent

SAVE



Contexts ?

Add input context

2 DefaultWelcomeIntent-followup × Add output context X

Events ?

WELCOME × Add event

Training phrases ?

Search training ph 🔍 ▲

“ Add user expression

“ good evening

“ good afternoon

“ good morning

“ good day!

“ greetings!

“ hi there

“ hi

“ hello

DIALOGFLOW

- Default Welcome Intent

SAVE

⋮

Try it now

Responses

DEFAULT GOOGLE ASSISTANT +

| | Text response | ⋮ |
|---|--|-----|
| 1 | Hi! Would you like to make a reservation? | |
| 2 | Hello! Are you looking for a table? | |
| 3 | Good day! Do you want me to reserve a table for you? | |
| 4 | Greetings! Would you like to make a reservation? | |
| 5 | Enter a text response variant | ↑ ↓ |

ADD RESPONSES

Set this intent as end of conversation

See how it works in [Google Assistant.](#)

| Agent | Domains |
|--|----------------|
| USER SAYS | COPY CURL |
| hello there! | |
| DEFAULT RESPONSE | PLAY |
| Greetings! Would you like to make a reservation? | |
| CONTEXTS | RESET CONTEXTS |
| defaultwelcomeintent-followup | |
| INTENT | |
| Default Welcome Intent | |

DIALOGFLOW

- Default Welcome Intent - yes

SAVE

Contexts

DefaultWelcomeIntent-followup  Add input context

Add output context 

Events

Training phrases

Search training ph  

 Add user expression

 that's correct

 of course

- Default Welcome Intent - yes

SAVE

Responses

DEFAULT GOOGLE ASSISTANT 

Text response

- Ok, where do you want to go?
- So, tell me the details of your desired table.
- Alright, just tell me how many of you want to go where.
- I see. I need a restaurant name, a number of people and a time, please.
- Enter a text response variant

ADD RESPONSES

 Set this intent as end of conversation

DIALOGFLOW

USER SAYS
of course

COPY CURL

DEFAULT RESPONSE ▾
Ok, where do you want to go?

PLAY

CONTEXTS

RESET CONTEXTS

defaultwelcomeintent-followup

INTENT
Default Welcome Intent - yes

ACTION
DefaultWelcomeIntent.DefaultWelcomeIntent-yes

USER SAYS
To Alfredo's

COPY CURL

DEFAULT RESPONSE ▾
Ok, how many people are coming to Alfredo's?

PLAY

CONTEXTS

RESET CONTEXTS

1941b904-6ab9-4e73-911e-b59e50e33a
cc_id_dialog_context

reserverestaurant_dialog_params_number

defaultwelcomeintent-followup

reserverestaurant_dialog_context

INTENT
ReserveRestaurant

| ACTION | PARAMETER | VALUE |
|-------------------|------------|-----------|
| ReserveRestaurant | number | |
| ReserveRestaurant | restaurant | Alfredo's |
| ReserveRestaurant | time | |
| ReserveRestaurant | date | |

DIALOGFLOW

USER SAYS
twelve!

COPY CURL

DEFAULT RESPONSE

PLAY

Tell me a time so I can make the reservation
at Alfredo's for all 12 of you, honey

CONTEXTS

RESET CONTEXTS

1941b904-6ab9-4e73-911e-b59e50e33a
cc_id_dialog_context

reserverestaurant_dialog_params_time

defaultwelcomeintent-followup

reserverestaurant_dialog_context

INTENT

ReserveRestaurant

USER SAYS

2pm

COPY CURL

DEFAULT RESPONSE

PLAY

Okidoki, I've made a reservation for 12 people
at Alfredo's at 14:00:00!

CONTEXTS

RESET CONTEXTS

defaultwelcomeintent-followup

INTENT

ReserveRestaurant

ACTION

ReserveRestaurant

PARAMETER

VALUE

time

14:00:00

PARAMETER

VALUE

number

12

restaurant

Alfredo's

date

DIALOGFLOW API

1. Accede a [Dialogflow](#) y pulsa en 'Ir a la consola'
2. Haz login con tu cuenta de Google
3. Crea un agente
4. En Ajustes puedes ver la Developer access token (vamos a usar la V1 de la API)
5. Ponla detrás de 'bearer' en las llamadas a la API

```
import json
import requests
from time import sleep

# Upload entity types out of a list
def dialogflow_client_put_entity_types(all_entity_types):
    for entity_type in all_entity_types:
        entity_type_json = json.dumps(entity_type)
        res = requests.put(
            'https://api.api.ai/v1/entities?v=20170712',
            headers = {"Authorization": "bearer XXXXXXXXXXXXXXXXXXXXXXXX",
                       "Content-Type": "application/json; charset=utf-8"},
            data = entity_type_json)
        print(res.status_code)
        if not res.status_code == 200:
            print(entity_type_json)
        sleep(1)
```



1

Subir entidades

DIALOGFLOW API

```
entity_types = [
    {
        "name": "enable",
        "entries": [
            {
                "synonyms": [],
                "value": "turn on"
            }, {
                "synonyms": [],
                "value": "switch on"
            }, {
                "synonyms": [],
                "value": "activate"
            }
        ]
    }, {
        "name": "device",
        "entries": [
            {
                "synonyms": [],
                "value": "alarm"
            }, {
                "synonyms": [],
                "value": "TV"
            }
        ]
    }
]
```

```
import json
import requests
from time import sleep

# Upload intents out of a list
def dialogflow_client_put_intents(all_intents):
    for intent in all_intents:
        intent_json = json.dumps(intent)
        res = requests.post(
            'https://api.api.ai/v1/intents?v=20170712',
            headers={"Authorization" : "bearer
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX",
            "Content-Type": "application/json; charset=utf-8" },
            data=intent_json)
        if not res.status_code == 200:
            print(intent_json)
        print(res.status_code)
        sleep(1)
```

2

Subir intents

DIALOGFLOW API

```
intents = [
    {
        "name": "EnableDevice",
        "auto": True,
        "templates": [
            "@enable @device",
            "@device",
            "@enable the @device",
            "@enable the @device, please"
        ],
        "userSays": [],
        "contexts": [],
        "responses": [
            {
                "messages": [
                    {
                        "type": 0,
                        "speech": [
                            "Ok, I will $enable the $device!",
                            "Ok, I will turn on the $device!"
                        ],
                        "lang": "en"
                    }
                ],
                "affectedContexts": [],
                "speech": []
            }
        ]
    }
]
```

DIALOGFLOW API

```
        "action": "EnableDevice",
        "parameters": [
            {
                "prompts": [
                    "what should I $enable?"
                ],
                "name": "device",
                "required": True,
                "dataType": "@device",
                "value": "$device"
            },
            {
                "name": "enable",
                "required": False,
                "dataType": "@enable",
                "value": "$enable"
            }
        ],
        "resetContexts": True
    }
],
"priority": 500000
}
```

DIALOGFLOW



Ventajas:

- El más completo
- Apto para cualquier persona con cualquier nivel de dominio de programación



Desventajas:

- Small talk
- No se puede asignar una respuesta a un valor de parámetro determinado

LEX

AWS Services Resource Groups Botijo Latest ▾ Build Publish ?

Editor Settings Channels Monitoring

Intents TodaysWeather Latest ▾

TodaysWeather

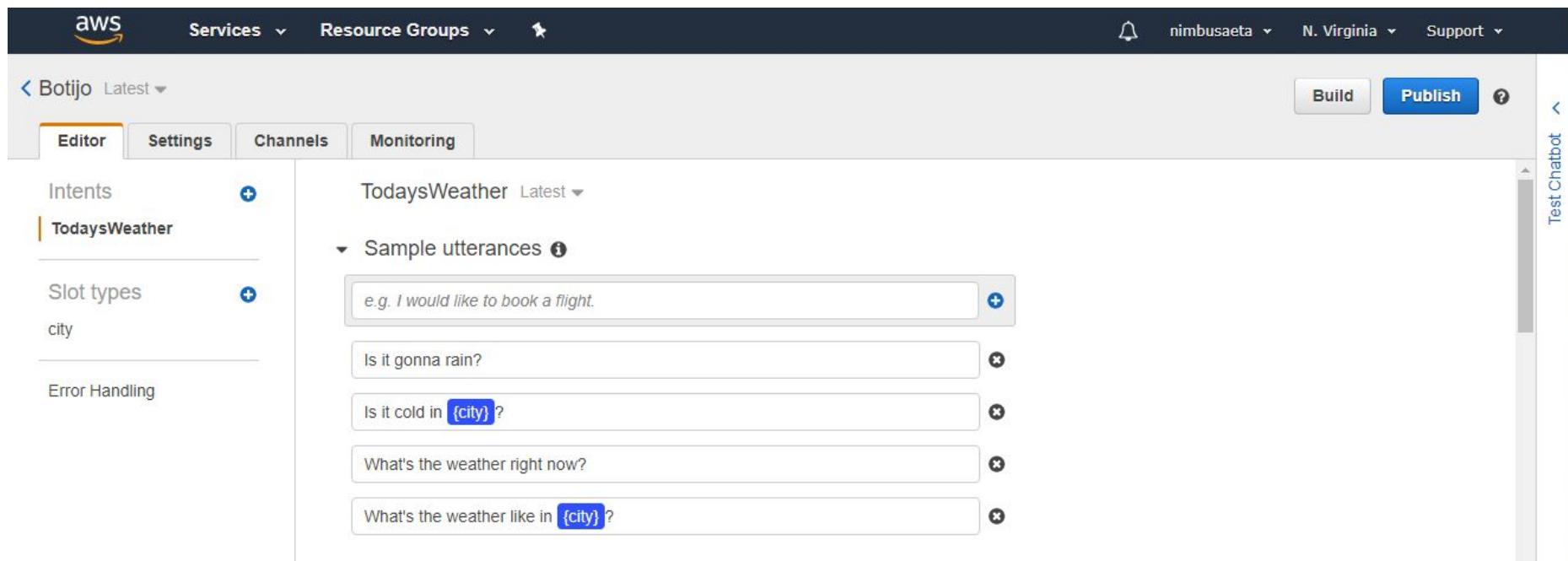
Slot types city

Error Handling

Sample utterances ⓘ

- e.g. I would like to book a flight. +
- Is it gonna rain? ×
- Is it cold in {city} ? ×
- What's the weather right now? ×
- What's the weather like in {city} ? ×

Test Chatbot <



LEX

AWS Services Resource Groups ▾ 🔍

nimbueta N. Virginia Support ▾

Botijo Latest ▾

Build Publish ?

Editor Settings Channels Monitoring

Intents + ↴

TodaysWeather

SLOTS

Slot types + ↴

city

Error Handling

Lambda initialization and validation ⓘ

Slots ⓘ

| Priority | Required | Name | Slot type | Prompt |
|----------|-------------------------------------|---------------|----------------|-----------------------------------|
| | | e.g. Location | e.g. AMAZ... ▾ | e.g. What city? ⚙️ + |
| 1. | <input checked="" type="checkbox"/> | city | city ▾ | What city? ⚙️ ✖️ |

Confirmation prompt ⓘ

Fulfillment ⓘ

AWS Lambda function Return parameters to client

Test Chatbot

LEX

AWS Services Resource Groups ▾ 🔍

nimbusaeta N. Virginia Support ▾

Botijo Latest ▾

Build Publish ?

Editor Settings Channels Monitoring

Intents

TodaysWeather

Slot types

city

Error Handling

Response i

Preview

Message Custom Markup i trash

One of these messages will be presented at random.

e.g. Thank you. Your {Drink_Name} has been ordered. plus

So you want to know the weather in {city}! minus

plus Add Message

Enable response card

Wait for user reply
If the user says "no," the following message will be presented.

* Required Field

Test Chatbot

LEX

aws Services ▾ Resource Groups ▾ 🔍

nimbueta nimbueta ▾ N. Virginia ▾ Support ▾

Botijo Latest ▾

Editor Settings

Intents

TodaysWeather

Slot types +
city

Error Handling

"rain?" in utterance "Is it gonna rain?" for intent "TodaysWeather" contains an unsupported character or word. An utterance can consist only of Unicode characters, spaces, and valid punctuation marks. Valid punctuation marks are: periods for abbreviations, underscores, apostrophes, and hyphens. If there is a slot placeholder in your utterance, ensure that it's in the {slotName} format and has spaces at both ends.

Sample utterances ⓘ

- e.g. I would like to book a flight. +
- Is it gonna rain? ✎
- Is it cold in {city} ? ✎
- What's the weather right now? ✎
- What's the weather like in {city} ? ✎

Test Chatbot ↗

> Test Bot (Latest)

READY

is it gonna rain?

What city?

Clear

Chat to your bot...

Inspect Response

Dialog State: ElicitSlot

Summary Detail

Intent: TodaysWeather

Slots (0/1)

city null

LEX

is it gonna rain?

What city?

Clear

Chat to your bot...

Inspect Response

Dialog State: ElicitSlot

Summary Detail

```
{  
  "dialogState": "elicitSlot",  
  "intentName": "TodaysWeather",  
  "message": "What city?",  
  "messageFormat": "PlainText",  
  "responseCard": null,  
  "sessionAttributes": {},  
  "slotToElicit": "city",  
  "slots": {  
    "city": null  
  }  
}
```

> Test Bot (Latest)

READY

is it gonna rain?

What city?

Madrid

So you want to know the weather in
Madrid!

Clear

Chat to your bot...

Inspect Response

Dialog State: Fulfilled

Summary Detail

Intent: TodaysWeather

Slots (1/1)

city Madrid

LEX

AWS Services Resource Groups ⚡

nimbusaeta N. Virginia Support

Lex

Bots

Intents

Slot types

Bots

Create Actions ▾

Filter: Filter by Bot name

| | Name | Status | Last updated | Date Created |
|--|--------|--------|---------------------------------------|----------------------------------|
| | Botijo | READY | February 24, 2018 at 9:34:55 PM UTC+1 | February 22, 2018 at 11:00:40 PM |

LEX

AWS Services Resource Groups 🔍

Botijo Latest Build Publish ?

Editor Settings Channels Monitoring

Intents +
TodaysWeather

Slot types +
No slots created

Error Handling

is it cold in {city}
What's the weather right now
What's the weather like in {city}

▶ Lambda initialization and validation ⓘ

▼ Slots ⓘ

| Priority | RequiredName | Slot type | Prompt |
|----------|--|-----------|----------------------------|
| 1. | <input checked="" type="checkbox"/> city | AM... ▾ | Built-in ▾ What city? ⚙️ ✎ |

▶ Confirmation prompt ⓘ

▼ Fulfillment ⓘ

Test Bot (Latest) READY

is it cold in Weimar?
So you want to know the weather in Weimar!

Clear Chat to your bot...

Inspect Response

Dialog State: Fulfilled

Summary Detail

RequestID: 8f15ba8a-1994-11e8-9294-1bce0d648fd1

```
{ "dialogstate": "Fulfilled", "intentName": "TodaysWeather", "message": "So you want to know the weather in Weimar!", "messageFormat": "PlainText", }
```

LEX

nimbueta ▾ N. Virginia ▾ Support ▾

> Test Bot (Latest) READY

What's the weather like?

What city?

In Qwertyuiop

So you want to know the weather in Qwertyuiop!

Is it gonna rain in Lkjhgfl?

So you want to know the weather in Lkjhgfl!

Clear

Chat to your bot...

Inspect Response

Dialog State: Fulfilled

Summary Detail

Intent: TodaysWeather

| Slots | (1/1) |
|-------|---------|
| city | Lkjhgfl |

LEX SDK

1. Crear una [cuenta en AWS](#)
2. Ir a IAM, crear un grupo de usuarios con permisos AmazonLexFullAccess, crear un usuario y añadirlo al grupo
3. Generar las claves
4. Crear un archivo llamado 'config' en la carpeta .aws con este contenido:

```
[default]
aws_access_key_id = XXXXXXXXXXXXXXXXXXXXXXXX
aws_secret_access_key =
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX/XXXXXXX
region = us-east-1
```

5. Instalar el SDK de Lex:

```
> pip3 install boto3
```

Subir slots

```
import boto3
client = boto3.client('lex-models')

response = client.put_slot_type(
    name='device',
    description='',
    enumerationValues=[
        {
            "value": "alarm",
            "synonyms": [
                "alarm"
            ]
        },
        {
            "value": "TV",
            "synonyms": [
                "TV"
            ]
        }
    ]
)
```

LEX SDK



Subir intents

```
response = client.put_intent(
    name="EnableDevice",
    description="",
    slots=[
        {
            "name": "device",
            "slotConstraint": "Required",
            "slotType": "device",
            "slotTypeVersion": "$LATEST",
            "valueElicitationPrompt": {
                "messages": [
                    {
                        "contentType": "PlainText",
                        "content": "What do you want me to {enable}?"
                    },
                    {
                        "contentType": "PlainText",
                        "content": "What should I {enable}?"
                    }
                ],
                "maxAttempts": 3,
                "responseCard": "string"
            },
            "priority": 3,
            "sampleUtterances": [
                "a {device}",
                "the {device}"
            ],
            "responseCard": "string"
        }
    ]
)
```

LEX SDK

```
    },
    "name": "enable",
    "slotConstraint": "Required",
    "slotType": "enable",
    "slotTypeVersion": "$LATEST",
    "valueElicitationPrompt": {
        "messages": [
            {
                "contentType": "PlainText",
                "content": "What should I do with the {device}?"
            }
        ],
        "maxAttempts": 3,
        "responseCard": "string"
    },
    "priority": 3,
    "sampleUtterances": [
        "{enable} it"
    ],
    "responseCard": "string"
},
],
sampleUtterances=[
    "{enable} the {device}",
    "{enable} a {device}",
    "{enable} something",
    "{device}",
    "{enable}"
]
```

LEX SDK

```
],
confirmationPrompt={
    "messages": [
        {
            "contentType": "PlainText",
            "content": "So you want me to {enable} the {device}?"
        }
    ],
    "maxAttempts": 3,
    "responseCard": "string"
},
rejectionStatement={
    "messages": [
        {
            "contentType": "PlainText",
            "content": "Ok, I won't {enable} anything"
        }
    ],
    "responseCard": "string"
},
conclusionStatement={
    "messages": [
        {
            "contentType": "PlainText",
            "content": "Ok, I will {enable} the {device}!"
        }
    ]
}
)
```

LEX



Ventajas:

- Control sobre versiones
- Robusto
- Muchas entidades predeterminadas



Desventajas:

- Poco intuitivo
- Solo para inglés
- Tarda bastante en construir

WATSON

Watson Conversation / Elgatoconbot / Build

① ⌂ ⋮

Intents Entities Dialog

Add intent ↕

| | Description | Modified ▾ | Examples |
|---------------------------------------|-------------|---------------|----------|
| <input type="checkbox"/> Intent (2) ▾ | | | |
| <input type="checkbox"/> #buy_clothes | | 8 minutes ago | 9 |
| <input type="checkbox"/> #see_catalog | | 3 hours ago | 4 |

WATSON

☰ | #see_catalog

Last modified a few seconds ago   

Description
Add a description to this intent

Add user examples
Add user examples to this intent

[Add example](#)

User examples (5) ▾

Do you have skirts?

I want to see dresses

I want to see what dresses you have

See catalog

What do you have?



WATSON

Watson Conversation / Elgatoconbot / Build

① ⌂ ⚡

Intents Entities Dialog

My entities System entities

Add entity ↕ ⌂ ⌂ ⌂

| <input type="checkbox"/> Entity (3) ▾ | Values | Modified ▾ |
|---------------------------------------|-----------------------------|---------------|
| <input type="checkbox"/> @cloth | shirt, skirt, dress, jacket | 5 minutes ago |
| <input type="checkbox"/> @color | blue, red, yellow, black | 8 minutes ago |
| <input type="checkbox"/> @size | XL, S, XS, M, L | 9 minutes ago |

WATSON

Watson Conversation / Elgatocoobot / Build

Intents Entities Dialog

My entities System entities

These are common entities created by IBM that could be used across any use case. They are ready to use as soon as you add them to your workspace. *System entities cannot be edited. [Learn more](#)

| Name (7) ▾ | Description | Status |
|--------------------------------------|--|------------------------------|
| > @sys-currency | Extracts currency values from user examples including the amount and the unit. (20 cents) | <input type="checkbox"/> Off |
| > @sys-date | Extracts date mentions (Friday) | <input type="checkbox"/> Off |
| > @sys-location BETA | The @sys-location system entity extracts place names (country, state/province, city, town, etc.) from the user's input. (Boston) | <input type="checkbox"/> Off |
| > @sys-number | Extracts numbers mentioned from user examples as digits or written as numbers. (21) | <input type="checkbox"/> Off |
| > @sys-percentage | Extracts amounts from user examples including the number and the % sign. (15%) | <input type="checkbox"/> Off |
| > @sys-person BETA | The @sys-person system entity extracts names from the user's input. (Anna) | <input type="checkbox"/> Off |
| > @sys-time | Extracts time mentions (at 10) | <input type="checkbox"/> Off |

WATSON

Watson Conversation / Elgatoconbot / Build

Intents Entities Dialog

Add node Add child node

Elgatoconbot

- Welcome
welcome
1 Response / 0 Context set
- See_catalog
#see_catalog
1 Response / 0 Context set
 - Buy_clothes
#buy_clothes
1 Response / 3 Context set / 3 Slots
- Buy_clothes
#buy_clothes
1 Response / 3 Context set / 3 Slots
- Anything else
anything_else
1 Response / 0 Context set

The screenshot shows the Watson Conversation interface in build mode. The left sidebar has icons for Intents, Entities, and Dialog, with Dialog selected. Below the sidebar, there's a toolbar with 'Add node' and 'Add child node' buttons. The main area displays a tree structure under the node 'Elgatoconbot'. The tree includes nodes for 'Welcome', 'See_catalog', 'Buy_clothes', and 'Anything else', each with their respective intents, context sets, and slot details. The 'See_catalog' node has a dropdown arrow indicating it has children, which are the 'Buy_clothes' nodes.

WATSON

Watson Conversation / Elgatoconbot / Build

Intents Entities Dialog

Add node Add child node

Elgatoconbot

- Welcome welcome 1 Response / 0 Context set
- See_catalog #see_catalog 1 Response / 0 Context set
 - Buy_clothes #buy_clothes 1 Response / 3 Context set / 3 Slots
- Buy_clothes #buy_clothes 1 Response / 3 Context set / 3 Slots
- Anything else anything_else

Buy_clothes

If bot recognizes:
#buy_clothes

Then check for:

| Check for | Save it as | If not present, ask | Type |
|-----------|------------|----------------------|----------|
| 1 @cloth | \$cloth | What do you want? | Required |
| 2 @color | \$color | What color do you w | Required |
| 3 @size | \$size | What's your size? XE | Required |

+ Add slot

If no slots are pre-filled, ask this first:
What would you like to buy?

WATSON

Configure slot 1

Check for: @cloth Save it as: \$cloth

If \$cloth is not present then ask:
What do you want?

When user responds, if @cloth is...

Found:
Enter a response...

Not found:

Cancel Save

Enable condition
Enable conditional responses
Open JSON editor

What would you like to buy?

Configure slot 2

Check for: @color Save it as: \$color

If \$color is not present then ask:
What color do you want your \$cloth?

When user responds, if @color is...

Found:
If bot recognizes Respond with
1 @color:red Yeah, baby! Red's the color to shir

+ Add a response

Cancel Save

What would you like to buy?

WATSON

Buy_clothes

Customize X

What would you like to buy?

Enter a variation

Then respond with:

| If bot recognizes | Respond with |
|-------------------|---|
| 1 #buy_clothes | Ok, this is your order: a \$color \$cloth of size \$size. |

Add response

And finally

Wait for user input ▾

Configure response 1

If bot recognizes:

#buy_clothes

Then respond with:

1. Ok, this is your order: a \$color \$cloth of size \$size. Updating your shopping cart...

Add a variation to this response

Cancel Save

WATSON



Ventajas:

- Se le puede asignar una respuesta a un valor de parámetro determinado



Desventajas:

- El diálogo puede llegar a ser lioso

LUIS

Language Understanding My apps Docs Pricing Support About Leticia Martín

Mancebot (v 0.1) ▾ DASHBOARD BUILD PUBLISH SETTINGS Train Test

^ App Assets Intents Entities ^ Improve app performance

Review endpoint utterances Phrase lists

PREVIEW Prebuilt Domains

Intents ?

Create new intent Add prebuilt domain intent Search intents

| Name | Utterances |
|----------------------|------------|
| Music.SkipBack | 9 |
| Music.IncreaseVolume | 10 |
| Music.Repeat | 10 |
| Music.Unmute | 9 |
| Music.Mute | 10 |
| Music.Dance | 10 |

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Mancebot (v0.1) ▾ DASHBOARD BUILD PUBLISH SETTINGS Train Test

^ App Assets

Intents

Entities

^ Improve app performance

Review endpoint utterances

Phrase lists

PREVIEW

Prebuilt Domains

Music.PlayMusic

Type about 5 examples of what a user might say to trigger this task and hit Enter.

Delete Intent

Search for an utterance Reassig... Delete utterance(s)

Filters: Errors Entity Entities view Prefix search

| Utterance | Labeled intent | ... |
|--|----------------------|------------------------|
| <input type="checkbox"/> play Song by Music.ArtistName | Music.PlayMusic 1 | <input type="button"/> |
| <input type="checkbox"/> play Song | Music.PlayMusic 1 | <input type="button"/> |
| <input type="checkbox"/> play saw Music.Genre | Music.PlayMusic 0.99 | <input type="button"/> |

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Mancebot (V 0.1) ▾ DASHBOARD BUILD PUBLISH SETTINGS Train Test

^ App Assets

Intents

Entities

^ Improve app performance

Review endpoint utterances

Phrase lists

PREVIEW

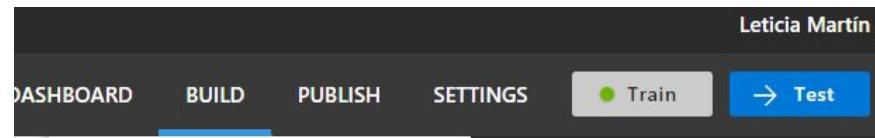
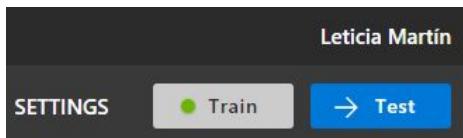
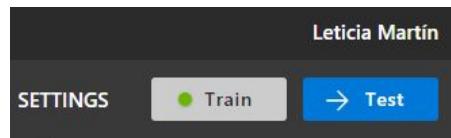
Prebuilt Domains

1 2 3 Next >

Entities used in this intent ?

| Name | Labeled utterances |
|------------------|--------------------|
| Music.Genre | 10 |
| Music.ArtistName | 10 |
| Song | 2 |

Luis



Test

Start over Batch testing panel

Type a test utterance

play hello by adele

Music.PlayMusic (1) Inspect

Utterance
play hello by adele

Top scoring intent
Music.PlayMusic (1) [Edit](#)

Entities
Song --> "hello"
Music.ArtistName --> "adele"

Inspect

Compare with published

Currently Editing
version 0.1

Utterance
play hello by adele

Top scoring intent
Music.PlayMusic (1) [Edit](#)

Entities
Song --> "hello"
Music.ArtistName --> "adele"

LUIS

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DASHBOARD BUILD PUBLISH SETTINGS Train → Test

Test Start over Batch testing panel

Type a test utterance

play hello by adele

Music.PlayMusic (1) Inspect

Utterance play hello by adele

Top scoring intent Music.PlayMusic (1) Edit

Entities

Song --> "hello"
Music.ArtistName --> "adele"

This screenshot shows the LUIS Build tab interface. It displays a single utterance "play hello by adele" with its corresponding entities: "Song" mapped to "hello" and "Music.ArtistName" mapped to "adele". The entities section is currently expanded.

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DASHBOARD BUILD PUBLISH SETTINGS Train → Test

Test Start over Batch testing panel

Type a test utterance

play hello by adele

Music.PlayMusic (1) Inspect

Utterance play hello by adele

Top scoring intent Music.PlayMusic (1) Edit

Entities

Song --> "hello"
Music.ArtistName --> "adele"

This screenshot shows the LUIS Build tab interface. It displays a single utterance "play hello by adele" with its corresponding entities: "Song" mapped to "hello" and "Music.ArtistName" mapped to "adele". The entities section is currently expanded, showing the list of entities and their mappings.

Luis



Ventajas:

- Muchas entidades predefinidas



Desventajas:

- ~~No se pueden hacer diálogos~~ (con el resto del [Microsoft Bot Framework](#), sí!)
- ~~No se pueden etiquetar multipalabras~~ (ahora sí!)



RECAST.AI

snips

My Assistant

nimbusaeta / harry

No description provided

Train

Code

Moni

Your



←

Efobot
✓ SAVED

m.me/10554...



leticiamfm ▾

Type a query to try your assistant

TEST THIS CHATBOT

2 Bundles in Assistant

See



Automate



Set Up AI



People



Broadcast

You



Configure



Grow



Analyze

Updates



Leticia

IF USER SAYS SOMETHING SIMILAR TO:

Press "← Enter" to add more phrases

BOT REPLIES WITH TEXT ▾

RANDOM

Enter text

IF USER SAYS SOMETHING SIMILAR TO:

What's up?

BOT REPLIES WITH TEXT ▾

RANDOM

Not much, being a robot and all. What about you?

IF USER SAYS SOMETHING SIMILAR TO:

Hello!

BOT REPLIES WITH TEXT ▾

RANDOM

Hi there!

OR BLOCK ▾

Welcome message Enter block name

27MB



RASA (SOFTWARE LIBRE)

 Rasa (1)

Open source conversational AI for enterprise to build intelligent applications. Machine learning based NLU & dialogue management

📍 Berlin 🌐 <https://rasa.com> 📩 hi@rasa.ai

Repositories 9 People 6

Pinned repositories

rasa_nlu
turn natural language into structured data

Python 2.7k ⚡ 707

rasa_core
machine learning based dialogue engine for conversational software

Python 564 ⚡ 241

TERMINOLOGÍA

| terminology | Dialogflow | Lex | Watson | LUIS |
|---|------------------|-------------|---------------|------------|
| restaurant | entities | slot types | entities | entities |
| Goiko Grill | values | slots | values | utterances |
| ReserveTable | intents | intents | intents | intents |
| \$restaurant | parameters | slot values | variables | - |
| "Now you have a table for \$number at \$restaurant at \$time" | responses | responses | responses | - |
| "A table for two, please" | training phrases | utterances | user examples | utterances |
| "How many people are coming?" | prompts | prompts | prompts | - |

LENGUAS

| languages | EN (gen) | EN (US) | DE | ES (gen) | ES (MX) | FR (gen) | FR (CA) | IT | JA | KO | NL | PT | PT (BR) | RU | UK | ZH | ZH (HK) | ZH (TW) | AR | CZ |
|------------|-------------|------------|----|-------------|------------|-------------|------------|----|----|----|------|----|------------|----|------|----|------------|------------|------|----|
| Dialogflow | ✓ | | ✓ | ✓ | | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| Lex | | ✓ | | | | | | | | | | | | | | | | | | |
| Watson | | ✓ | ✓ | ✓ | | ✓ | | ✓ | ✓ | ✓ | beta | ✓ | | | beta | | beta | ✓ | beta | |
| LUIS | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | | | | | |



THANKS FOR
LISTENING!

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