

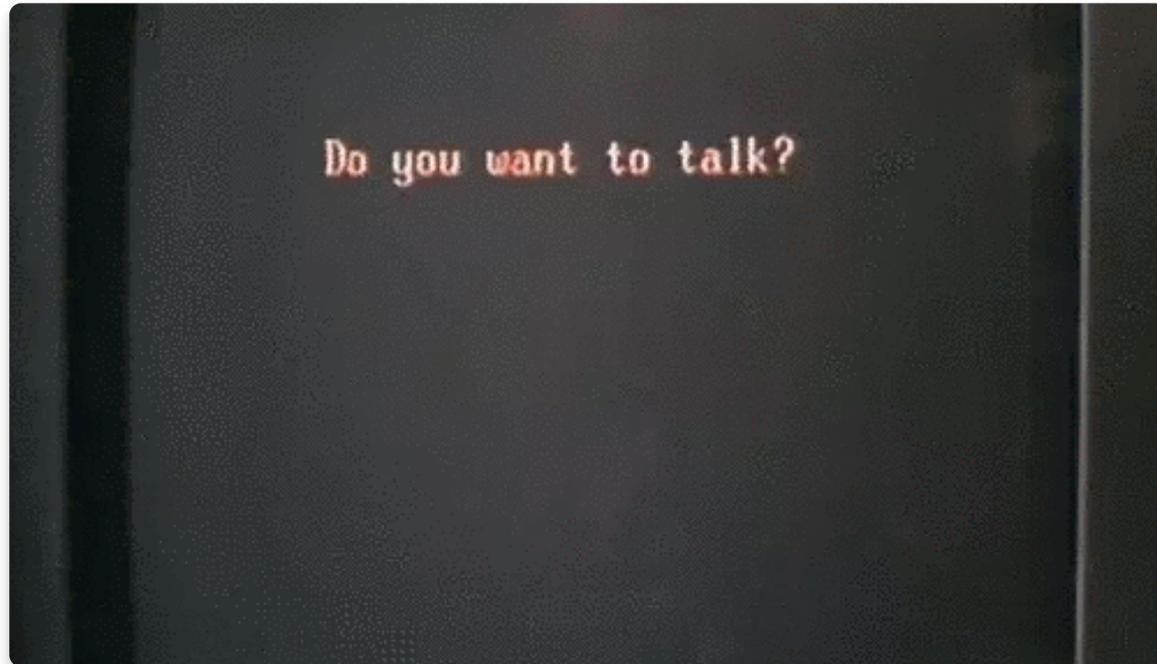
# Conversational Interfaces using Dialogflow



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# Conversational Interfaces

- # CLI (Command Line Interface)
- # GUI (Graphical User Interface)
- # Human to Human alike Conversation

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# The Beginning

# Eliza (1966)

# Interactive Voice Response (IVR)

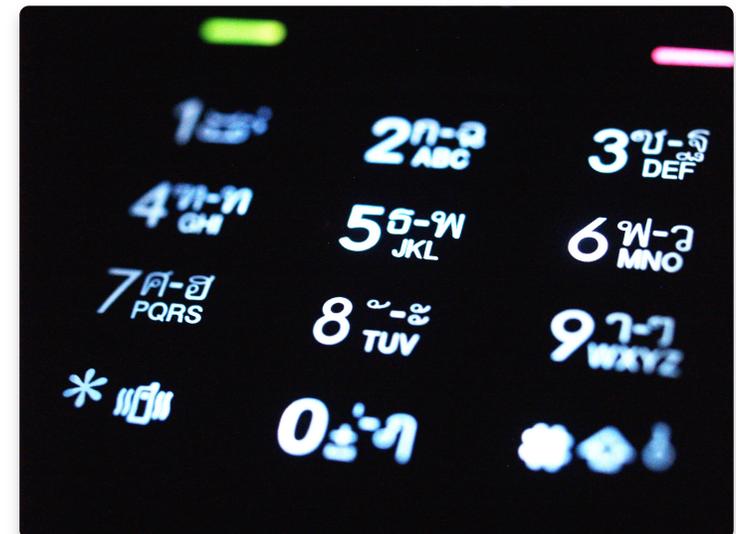
Approaches:

# Pattern Matching

# Rule based

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```
=====
EEEEEEEE L      IIIIII ZZZZZZZ AAA
E         L      I      Z      A  A
E         L      I      Z      A  A
EEEEEE   L      I      Z      A  A
E         L      I      Z      AAAAAA
E         L      I      Z      A  A
EEEEEEEE LLLLLLL IIIIII ZZZZZZ  A  A
=====
ELIZA > (PLEASE TYPE IN ALL CAPS) WHAT'S YOUR NAME DEAR ?
AMIT
ELIZA > HI, I'M ELIZA. WHAT DO YOU WANT TO TALK ABOUT ?
AMIT > CAN I TALK ABOUT MY PROBLEM ?
ELIZA > SURE... !
AMIT > DUE TO ON GOING EXAMS IN COLLEGE, I HAVE A LOT OF STRESS.
ELIZA > PLEASE RELAX A LITTLE. SLEEP WELL.
AMIT > THANKS FOR YOUR ADVICE.
ELIZA > NO MENTION.
AMIT > BYE
ELIZA > BYE AND KEEP IN TOUCH...
=====
```





## State of the Art

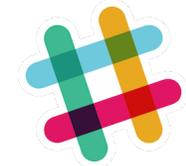
- # Diversity of Frontends
- # Machine Learning
- # NLP Frameworks
- # Cheap
- # Simple

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# Dialogflow Integrations

# Tightly coupled with Google Assistant

# One click



# Frontends

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# Google Assistant

- # Available on Android/iOS
- # Smart Speakers/Displays
- # Rich Responses

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# Telegram Messenger

- # 200M Monthly Active Users
- # Multi Platform
- # Text Messages or Files
- # Bot API
- # Custom Keyboards

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# Facebook Messenger

- # 1,3B Monthly Active Users
- # Text Messages or Files
- # Rich Responses

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Message us on WhatsApp

---

# WhatsApp Messenger

- # Ideal Frontend
- # 1,5B Active Monthly Users
- # 75% of all Germans
- # **Currently:** Closed Beta

# Use Cases

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“  
OK Google,  
Mit FES Frankfurt sprechen



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## FES Frankfurt Action

- # Goal: Reduce Load on Call-Center
- # Focus: Bulky-Waste Appointments
- # Challenges:
  - # SAP Integration
  - # Google Transaction API

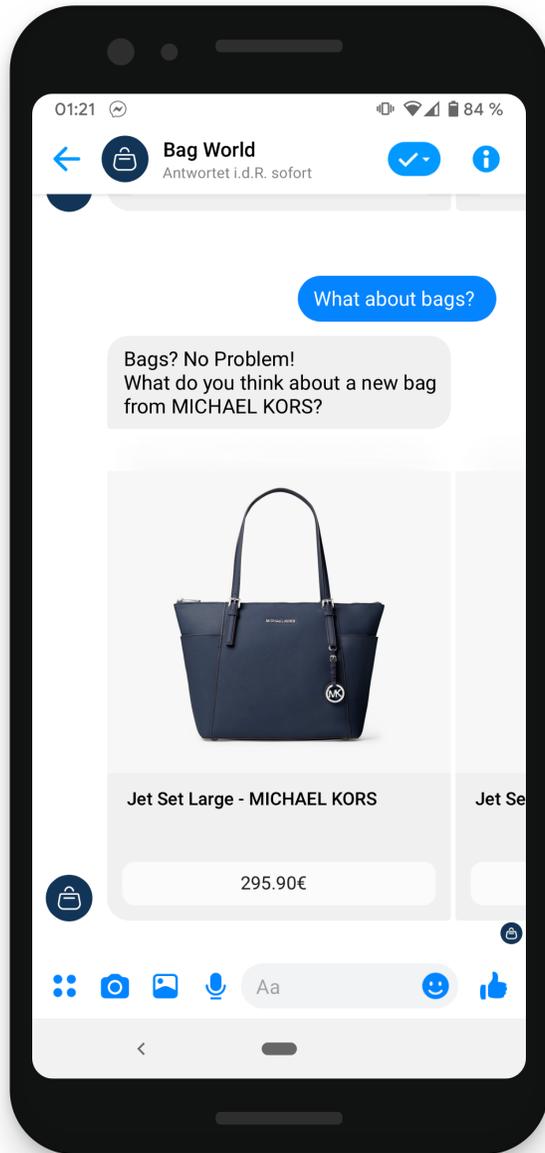
# Software & Digital Business Group Bot

# Goal: Reduce Load on Employees

# Focus: Teaching

# Challenge: Data Management





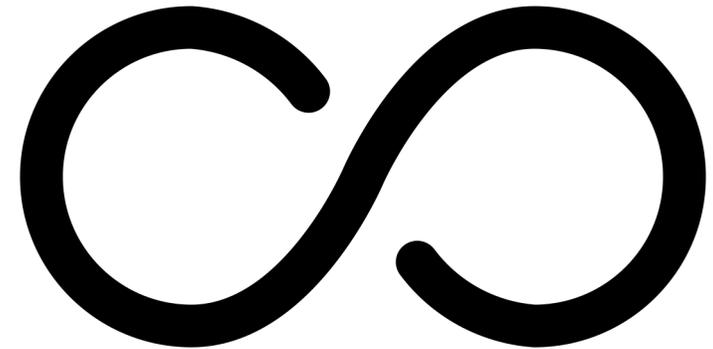
# Shopping Bot

- # Goal: Enable automatic Consulting
- # Focus: Product Information
- # Challenge: Integration into Shop Backend

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# Potential Use Cases

- Order Food
- Reservation at a Bar/Restaurant
- Customer Support
- Lunch Menu
- ...



# Dialogflow

Released as API.ai from Speaktoit in 2014

Acquired by Google in September 2016

Renamed in 2017

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# Intents Training Phrases

- # Should match the Intention of the User
- #  $\geq 10$  Training Phrases (advised)
- # Used to train the Intention Model

## Bot for your favorite bar

### Opening Hours Intent

What are the opening hours?

---

When do you open?

---

How long are you open?

---

...



Our opening hours are Monday - Thursday from 18:00 - 01:00 and Friday - Saturday from 18:00 - 03:00.



Days	From	Until
Mo - Th	18:00	01:00
Fr - Sa	18:00	03:00

# Intent Responses

# Can be defined in Dialogflow

# Specific for Frontend

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# Intent Parameters

- # Extraction from User Saying
- # Defined in Training Phrases
- # Required / Slot Filling

What are the opening hours?

---

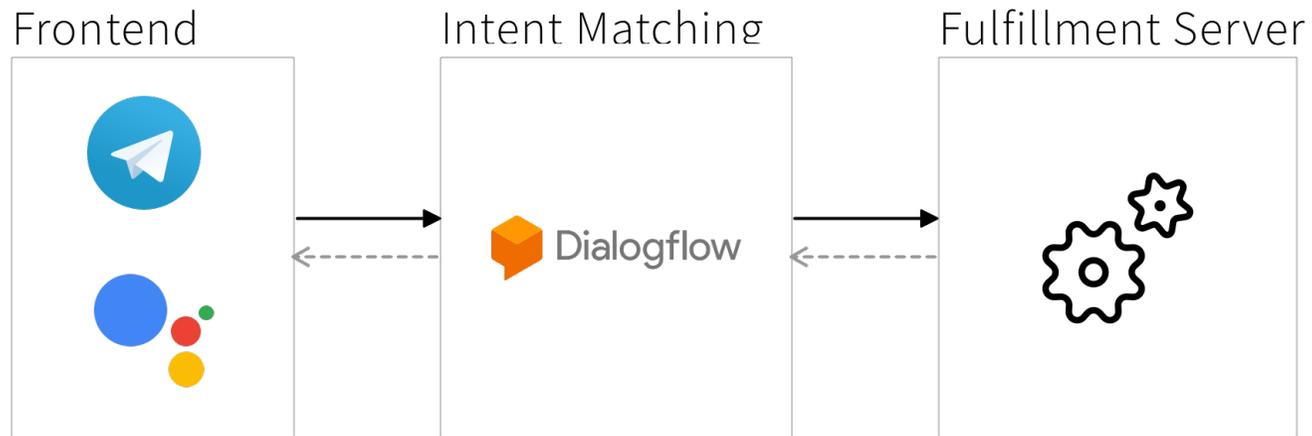
When do you open **on Monday**?

---

How long are you open?

---

...



# Fulfillment

- # Dynamic Response Building
- # Responses based on Data
- # Dynamic Conversation Structure

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# Live Demo

“ You do not need to know every detail, but at least get a glimpse about what’s going on.

(Prof. Dr.-Ing. Andreas Koch)

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# Let's talk about it

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