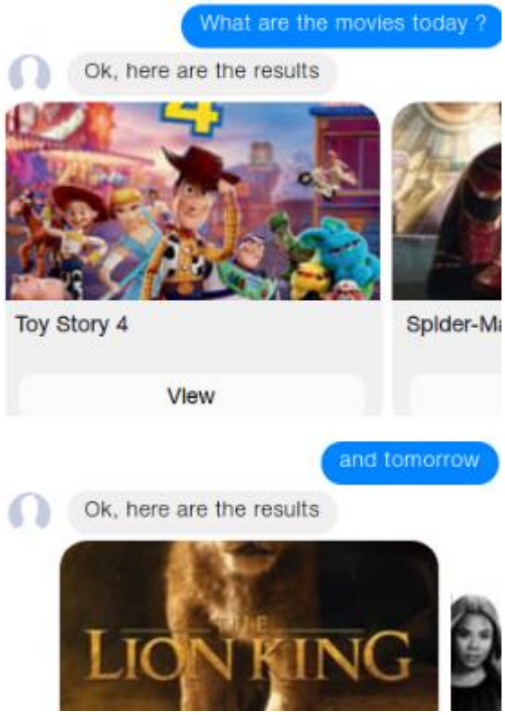
Chatbot Features

Features for a chatbot capable of understanding human language

Create your own context



What are the movies today ?

Ok, here are the results

and tomorrow

Ok, here are the results

Trigger intentions according to well-defined context. Create the intentions tree.

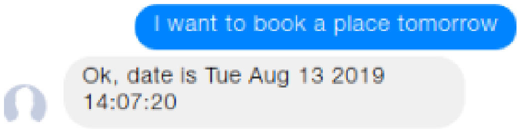
If the user continues the conversation by changing some data, the chatbot automatically understands that the context is always the same.

We can change the context of the movie results by type and limit.

Other examples of searches:

- Top 10 horror movies today
- Top drama movies of all time
- Movies today and tomorrow (combined aswers)

Extraction of Entities



I want to book a place tomorrow

Ok, date is Tue Aug 13 2019 14:07:20

From the start of a conversation with the chatbot, a session begins. It is possible to recover already existing entities. For example, a number, a date, a dimension, etc.

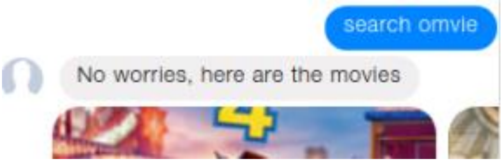
Get the structured data in a sentence.

Use of the **magic variable** named `:intent`. Created by the framework, usable after a situation.
If the user puts a date, then it will be possible to know it with `:intent.date.value`

"Issue" encountered in FB Messenger

When a user starts a conversation with the chatbot connected to a page a session starts with the chatbot that doesn't seem to end even when the server of the chatbot is restarted. In this case, any data saved regarding the conversation is lost (a need for a database to store this data) and the chatbot doesn't greet the user again when he returns to the chat after a couple of days.

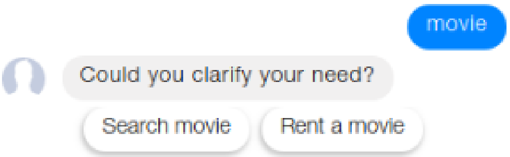
Understanding of mistakes


search omvie

No worries, here are the movies

Even when a spelling mistake or a typo is made, the chatbot is always able to understand the intention.

Doubt management


movie

Could you clarify your need?

If confused between several intentions, it will automatically offer several possibilities to reorient the user towards a conversation.

Another Example: Ask the user which category of movies he wants to see.

The chatbot can offer some answers:

- Either in the form of quick answer (see picture above). In this case, if we want to display all the categories, a big section of the screen will be filled. The user can either pick one of the quick answers, or write the category he desires. After the user answers, the corresponding list of movies will be displayed.
- Either in the form of carousel, where each node will include a link to a list of movies of a different category (eg. first a list of action movies, then dramas etc.)

Self-understanding in other languages

Able to understand the intentions in all available languages. No need to rewrite all the training phrases.

- ✓ At the moment the chatbot languages are English and French. More to come soon.

Create and host Webviews

- Universal. Work an Messenger, Slack, Google Assistant etc.
- With Newbot Cloud SDK, interact between the WebView and the chatbot.

NLP Integration

Native system makes it easier to use NLP and classification without extensive knowledge in data sciences. The native system uses the module “Microsoft.Recognizers.Text for JavaScript” (link).
For a more advanced NLP functionality, it is possible to integrate an external NLP system (like DialogFlow or Wit.ai)

NewBot Cloud

NewBot Cloud is a workflow used to deploy and put in production simple chatbots created with the NewBot Framework. It includes a free offer with no extremely limited features. Paid plans offer to deploy more chatbots in total, Twitter compatibility, technical support and bigger limit on messages.

In order to implement more extended features into your chatbot, you need to work directly with the Newbot Framework.

Limitations

- ✓ For use of NewBot Cloud to deploy the chatbot, we are entitled to 1GB maximum of hosting per chatbot. If in need of more space, contact Newbot.io (sam@newbot.io)

The Movie DataBase (TMDB)

A community build movie and TV database. It includes data back to 2008. With strong international focus and breath of data.

- ➢ Over 200.000 developers and companies using the platform.
- ➢ Premiere source for metadata. High resolution posters.
- ➢ Support of over 39 languages and extensive regional data.
- ➢ Big support forum.
- ➢ Trusted platform. Daily used by millions of people and process over 3 billion requests.

Methodology

Step-by-step actions for the chatbot (the x's highlight the actions that haven't been finished yet)

- ✓ Setup of the Newbot framework
- ✓ Adding skills for each feature (use of Newbot's ConverseScript language)
- ✓ Use of axios HTTP client for the browser and Node.js
    - ✓ Async/await for asynchronous Javascript calls
    - ✓ Use of NASA API for displaying picture/video of the day (Figure 3)
    - ✓ Use of TMDB API for displaying movies
    - × Convert to React.js for better use of the axios capabilities (plain JavaScript is not enough)
- ✓ Use of defined entities for a whole session
    - ✓ User's name (Figure 1)
    - ✓ Current date.

      When booking tickets, the user has to input another date if not for current day (Figure 2)
- ✓ Call TMDB API premade lists for displaying:
    - ✓ Now playing movies (movies in theatres)
    - ✓ Popular movies (current popular movies on TMDB – updates daily) *
    - ✓ Top rated movies on TMDB (Figure 4)
    - ✓ Upcoming movies in theatres *
- ✓ Make calls to TMDB with user defined queries
    - ✓ Eg. "star wars" returns all star wars movies (Figures 5,6)
    - × Query by specified genres
- × Why does the carousel of movies appear differently on my browser (when running on localhost) than in Newbot's testing site? (Fig. 7)
- ✓ For each movie, give a link to its IMDB page
- ✓ Connect chatbot to FB Messenger with Webhooks
    - × Investigate why some features don't appear the same way in Messenger
- ✓ Upload code to Github https://github.com/NenaBas/Chatbot
    - × Investigate security vulnerability in one of the dependencies

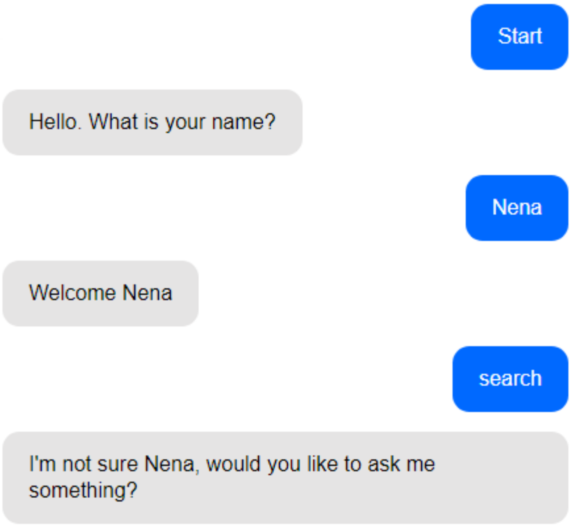
* optionally specify a region, to narrow results of theatrical release dates within the specified country

Features Considered for the Future

- Personalized answers. Keep a history of user's likes and dislikes in order to make better recommendations.

List of Pictures of Running Code

Following pictures are of the chatbot in localhost mode (not run in FB Messenger)



Start

Hello. What is your name?

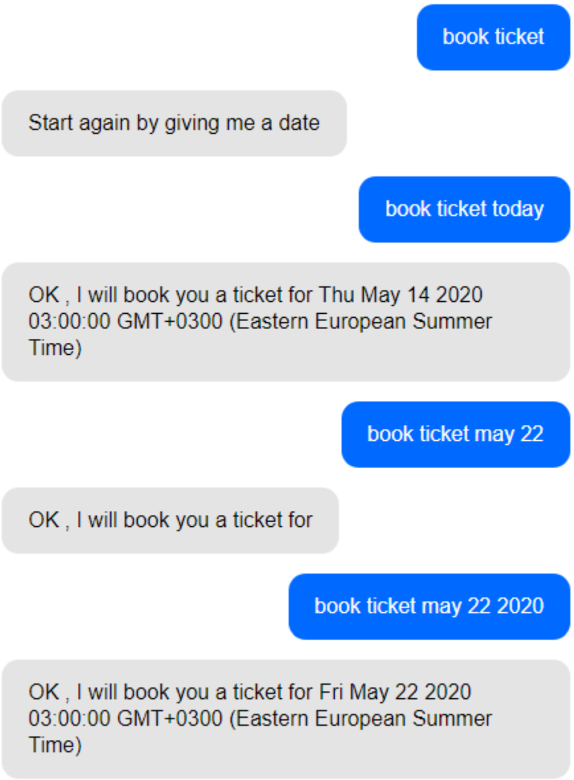
Nena

Welcome Nena

search

I'm not sure Nena, would you like to ask me something?

Figure 1: Start of a session



book ticket

Start again by giving me a date

book ticket today

OK , I will book you a ticket for Thu May 14 2020 03:00:00 GMT+0300 (Eastern European Summer Time)

book ticket may 22

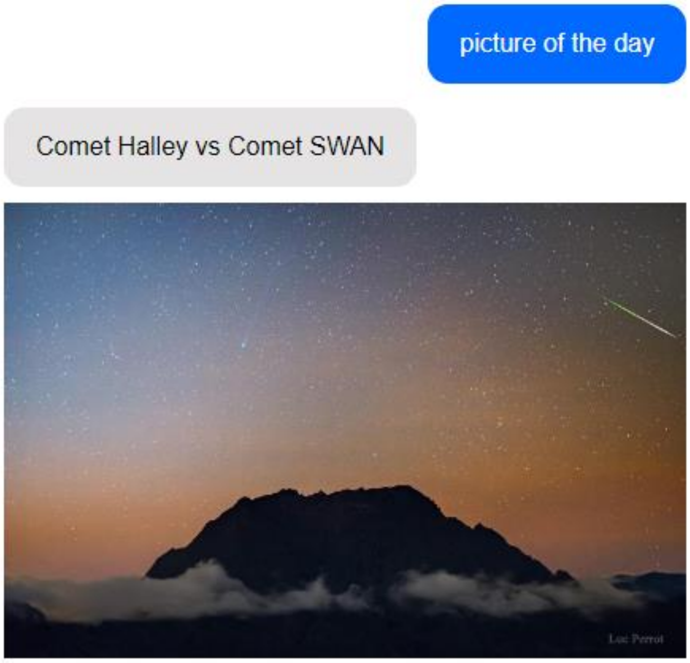
OK , I will book you a ticket for

book ticket may 22 2020

OK , I will book you a ticket for Fri May 22 2020 03:00:00 GMT+0300 (Eastern European Summer Time)

Figure 2: Book a ticket

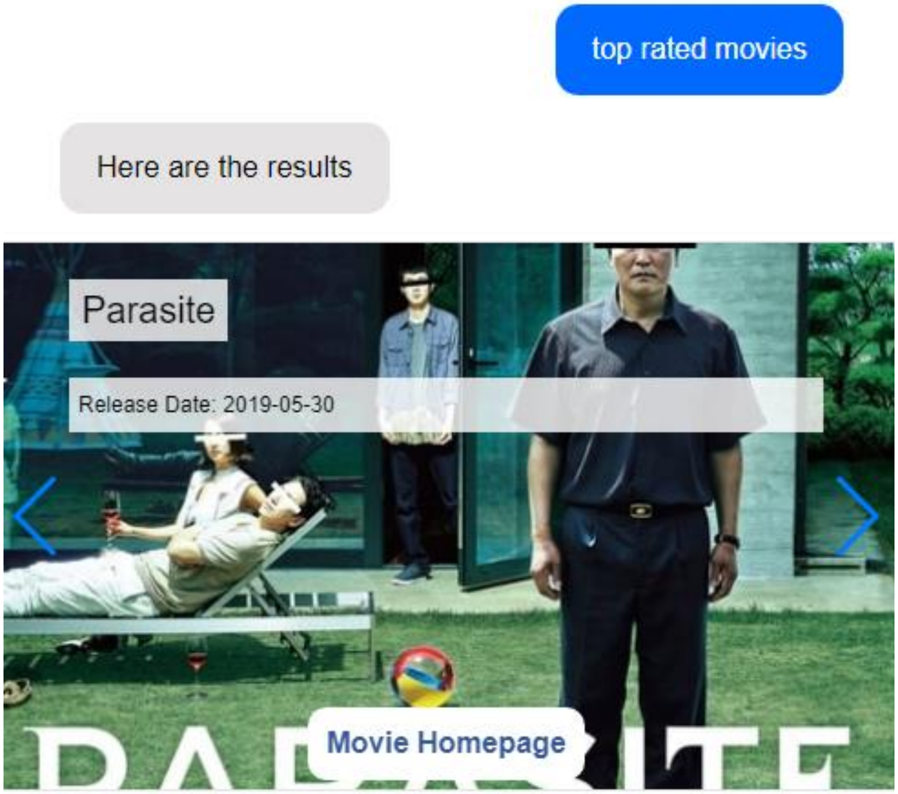
This was made with the use of the framework's `:intent` magic variable. Notice that when the year is not specified, it will not assume it is the current year.
We can instead use some plain Javascript to get current date and time.



picture of the day

Comet Halley vs Comet SWAN

Figure 3: Picture of the day using the NASA API



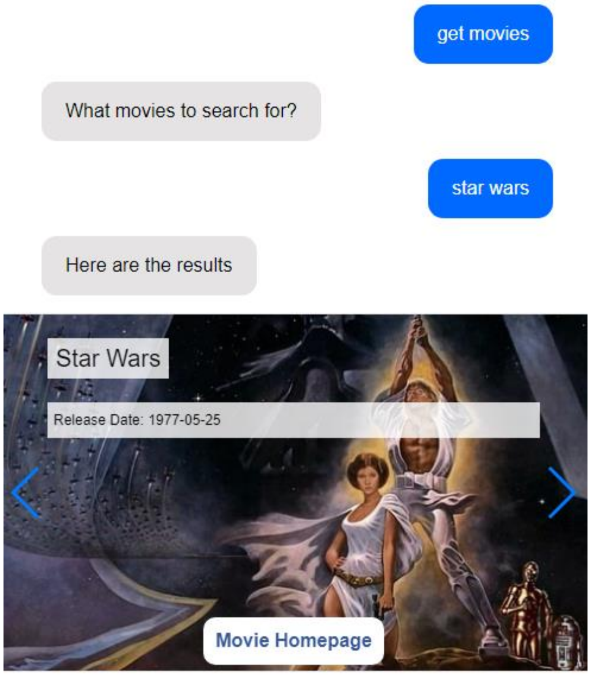
top rated movies

Here are the results

Parasite

Release Date: 2019-05-30

Figure 4: Get the list of Top Rated movies.
The user can scroll to see the rest movies in the list.



get movies

What movies to search for?

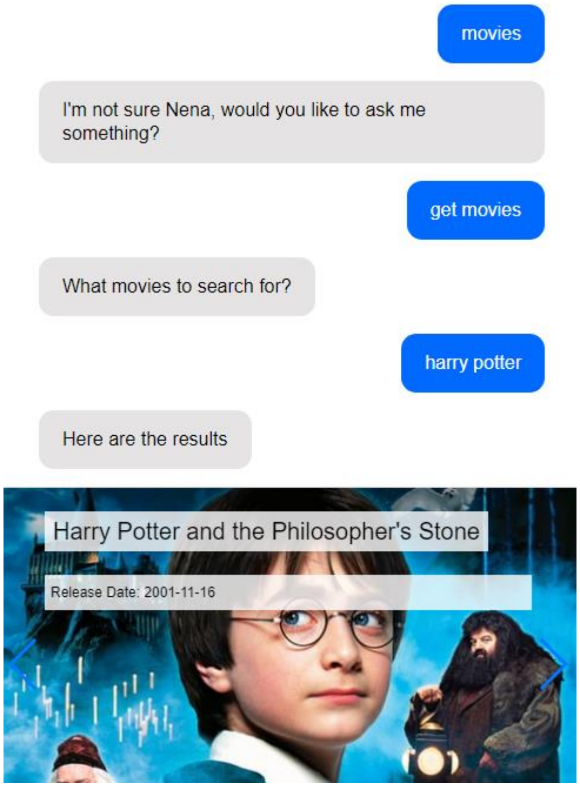
star wars

Here are the results

Star Wars

Release Date: 1977-05-25

Figure 5: Search in the database for movies



movies

I'm not sure Nena, would you like to ask me something?

get movies

What movies to search for?

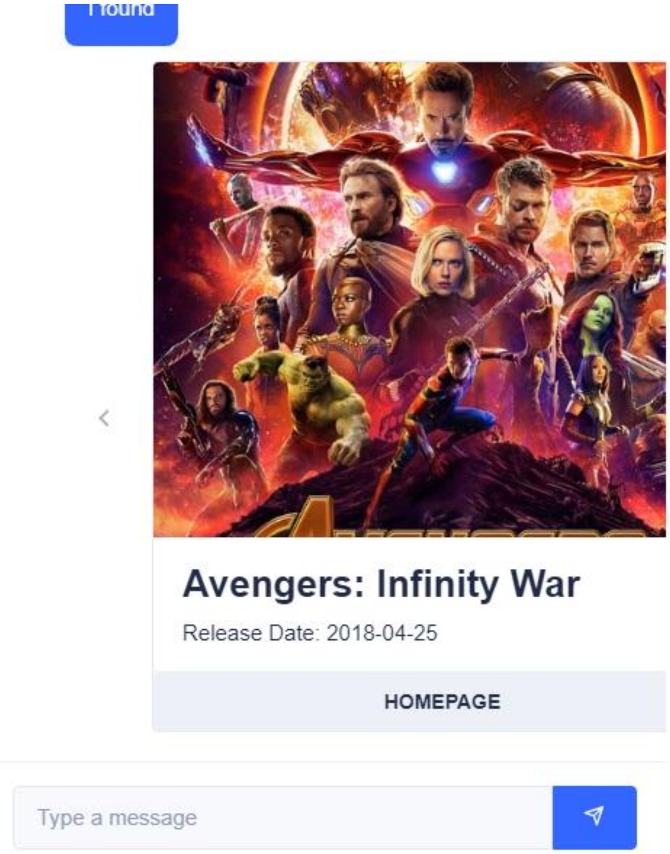
harry potter

Here are the results

Harry Potter and the Philosopher's Stone

Release Date: 2001-11-16

Figure 5: If the bot is uncertain of the user's intention, it will ask again



I found

Avengers: Infinity War

Release Date: 2018-04-25

Figure 7: Same code, when used in Newbot Framework's site for testing, displays the carousel of movies in a better way.