

Internship Report - Isabel Soares

1. Solutions found to generate a chatbot:

a. ChatterBot

DOCUMENTATION:

To install, follow these steps: [Installation — ChatterBot 1.0.8 documentation](#)

To start, I found this tutorial that helped me very much in understanding better how ChatterBot works: [How to Create a Chatbot Using Chatterbot Python - YouTube](#)

Limitations:

- a simple FAQs; (*I found this limitation while implementing*)
- we cannot filter the information through the question; (*I found this limitation while implementing*)
- we cannot have more than 1 answer per question. (*I found this limitation while implementing*)

Advantages:

- Easy to use: chatbot answers questions similar to the Q&A.json(that was created by me) ([gunthercox/ChatterBot: ChatterBot is a machine learning, conversational dialog engine for creating chat bots \(github.com\)](#) && [ChatterBot Tutorial — ChatterBot 1.0.8 documentation](#)) and easy to add the data to the bot. That's why this type of chat bot is good for FAQs, for instance.
- Have Corpus for many languages ([gunthercox/chatterbot-corpus: A multilingual dialog corpus \(github.com\)](#)).
- Use Search and Classifications Algorithms ([Frequently Asked Questions — ChatterBot 1.0.8 documentation](#)) which helps in compensating for users' typos:

Basically, chat bot selects a response include:

[Search Algorithm]

- the similarity of an input statement to known statements
- the frequency in which similar known responses occur
- the likeliness of an input statement to fit into a category that known statements are a part of.

[Classification Algorithm]

- Use naive Bayesian classification algorithms to determine if an input statement meets a particular set of criteria that warrant a response to be generated from that logic adapter.

SIMPLE CONVERSATION EXAMPLE

```
Windows PowerShell
PS C:\Users\Isabel.Soares\Desktop\Internship\PrimaveraChatBot> py .\chatbot.py
[nltk_data] Downloading package averaged_perceptron_tagger to
[nltk_data]   C:\Users\Isabel.Soares\AppData\Roaming\nltk_data...
[nltk_data]   Package averaged_perceptron_tagger is already up-to-
[nltk_data]   date!
[nltk_data] Downloading package punkt to
[nltk_data]   C:\Users\Isabel.Soares\AppData\Roaming\nltk_data...
[nltk_data]   Package punkt is already up-to-date!
[nltk_data] Downloading package stopwords to
[nltk_data]   C:\Users\Isabel.Soares\AppData\Roaming\nltk_data...
[nltk_data]   Package stopwords is already up-to-date!
Training ai.yml: [#####] 100%
Training botprofile.yml: [#####] 100%
Training computers.yml: [#####] 100%
Training conversations.yml: [#####] 100%
Training emotion.yml: [#####] 100%
Training food.yml: [#####] 100%
Training gossip.yml: [#####] 100%
Training greetings.yml: [#####] 100%
Training health.yml: [#####] 100%
Training history.yml: [#####] 100%
Training humor.yml: [#####] 100%
Training literature.yml: [#####] 100%
Training money.yml: [#####] 100%
Training movies.yml: [#####] 100%
Training politics.yml: [#####] 100%
Training psychology.yml: [#####] 100%
Training science.yml: [#####] 100%
Training sports.yml: [#####] 100%
Training trivia.yml: [#####] 100%
List Trainer: [#####] 100%
Enter Your Email: isabel.soares@primaverabss.com
Welcome to the PrimaveraChatBot Service! I'm optimized to answer about business data.
Anytime, press 1 to "Obligations" or 2 to "Insights", to define a theme
How can I help you today?
isabel.soares@primaverabss.com: 1
How much is my VAT?
How much I need to pay regarding Social Security?
What is the limit of date that I can pay my VAT?
isabel.soares@primaverabss.com: 2
Show me a positive insight.
Show me a medium insight.
Show me a negative insight.
isabel.soares@primaverabss.com: How much is my VAT?
PrimaveraChatBot: Your VAT value to pay is 4606.00€,~
isabel.soares@primaverabss.com: Show me a positive insight.
PrimaveraChatBot: In the next 30 days, it will increase the disponibilities in 6000€
isabel.soares@primaverabss.com: thank you
PrimaveraChatBot: You are welcome!
PS C:\Users\Isabel.Soares\Desktop\Internship\PrimaveraChatBot>
```

Figure 1 - A conversation using Chatterbot.

b. Rasa

DOCUMENTATION:

Download: [Installing Rasa Open Source: Windows 10 \(Updated 2021\) - YouTube](#)

Quick Installation - [Installation \(rasa.com\)](#)

Note: I needed to use administrator permissions, because Anaconda did not work without it.

I started to understand the documentation but, in my opinion, it is more useful to watch these videos from the Rasa YouTube Channel, although they show an old version (the main changes between the versions are in the format used, which was previously on Markdown and now is on YAML and the last version is easier and simpler than first, regarding to the policies and pipeline):https://www.youtube.com/watch?v=-F6h43DRpcU&list=RDCMUCJ0V6493mLvqdiVwOKWBODQ&start_radio=1&t=12s

In summary, Rasa divides itself in three majors' components:

1. Rasa NLU - It is responsible for understanding the input messages of the user. It should recognize what the user wants and also extract information like names, places from the messages.
 - a. Domain: defines the universe in which your bot operates. It specifies exactly:
 - i. - which intents you are expecting to respond to
 - ii. - which slots you wish to track
 - iii. - which actions your bot can take
 - b. Actions: are the things your bot can do.
 - c. Stories: is a training data sample for the dialogue system. This shows the bot how to act and react to the inputs given by the user.
 - d. Slots: are the things you want to keep track of during a conversation. The slots are the bot's memory.
2. Rasa Core - It maintains the conversation flow between the User and the Bot.
3. Rasa X - is a toolset for developers to build, improve, and deploy contextual assistants with the Rasa framework. The good thing about Rasa X is that you can share your assistant with real users and collect the conversations they have with the bot, allowing you to improve it without interrupting the bot running in production.

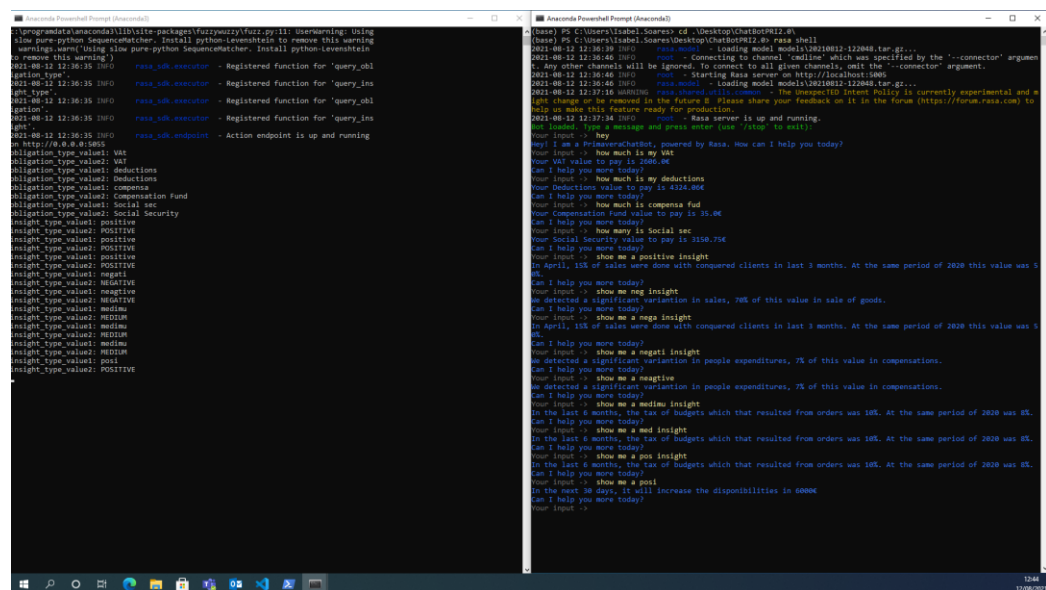
Good summarize in : [How to build a contextual assistant using RASA Forms | by Amal Menzli | Towards Data Science](#) (I found very useful to understand, in a general way, the documentation of Rasa)

When you are running/training your bot use an Anaconda Powershell Prompt and the **list of commands** that you can use are listed in [Command Line Interface \(rasa.com\)](#)

A good way to understand how querying a database with a chatbot works is by watching this livecoding: [Rasa Livecoding: Querying a database with a chatbot - YouTube](#) and the code is here (also very useful to understand how Rasa works with this example): [GitHub - rctatman/personal_website_bot: A simple bot to answer questions on my personal website. \(In development\)](#)

Limitations/Disadvantages:

- more difficult in terms of understanding all the documentation; ([Introduction to Rasa Open Source](#))
- more difficult in terms of understanding how to connect our data to the bot, because it creates a database from our data (in my case .csv) (*I found this limitation while implementing and the links above helped me to overcome this limitation*)
- this is a limitation of rasa but I do not know the reason. I will give a tip that always helped me: when something is not working and you do not understand the bug, the best solution is to delete the models and the database of the obligations and insights. After, run again *rasa train* (to have a new a model) and create again new databases running the Jupiter notebook.
- By exploring some more functionalities of Rasa, I concluded that sometimes if the keyword was wrongly written, the bot will not understand and you can see it here:



```
ProgramData\anaconda11\lib\site-packages\puzzy\puzzy.py:11: UserWarning: Using
slow pure-python SegmentsMatcher. Install python-Levenshtein
to remove this warning.
  2021-08-12 12:36:35 INFO rasa_sdk.executor - Registered function for 'query_obl
  2021-08-12 12:36:35 INFO rasa_sdk.executor - Registered function for 'query_ins
  2021-08-12 12:36:35 INFO rasa_sdk.executor - Registered function for 'query_obl
  2021-08-12 12:36:35 INFO rasa_sdk.executor - Registered function for 'query_ins
  2021-08-12 12:36:35 INFO rasa_sdk.endpoint - Action endpoint is up and running
  2021-08-12 12:36:35 INFO
  on http://0.0.0.0:5055
  obligation_type_value1: VAT
  obligation_type_value2: VAT
  obligation_type_value1: deductions
  obligation_type_value2: compensa
  obligation_type_value1: Compensation Fund
  obligation_type_value2: Social sec
  insight_type_value1: positive
  insight_type_value2: positive
  insight_type_value1: positive
  insight_type_value2: positive
  insight_type_value1: positive
  insight_type_value2: positive
  insight_type_value1: negative
  insight_type_value2: negative
  insight_type_value1: negative
  insight_type_value2: negative
  insight_type_value1: medium
  insight_type_value2: medium
  insight_type_value1: medium
  insight_type_value2: medium
  insight_type_value1: positive
  insight_type_value2: positive
  insight_type_value1: pos
  insight_type_value2: POSITIVE

(Use) PS C:\Users\labe1\Source> cd 'D:\Desktop\Chatbot\PR12.0'
(Use) PS C:\Users\labe1\Source\Desktop\Chatbot\PR12.0> rasa shell
2021-08-12 12:36:39 INFO rasa_sdk.executor - Loading model model120210812-122048.tar.gz...
2021-08-12 12:36:40 INFO rasa_sdk.executor - Connecting to channel endpoint which was specified by the '-connector' argumen
  Any other channels will be ignored. To connect to all given channels, omit the '-connector' argument.
2021-08-12 12:36:40 INFO rasa_sdk.executor - Starting Rasa server on http://localhost:5055
2021-08-12 12:36:40 INFO rasa_sdk.executor - Loading model model120210812-122048.tar.gz...
2021-08-12 12:37:10 WARNING rasa_sdk.executor - The inspectID intent policy is currently experimental and m
  any changes may be removed in the future. Please share your feedback on it in the form (http://forum.rasa.com) to
  help us make this feature ready for production.
2021-08-12 12:37:34 INFO rasa_sdk.executor - Rasa server is up and running.
  Bot loaded. Type a message and press enter (use '/quit' to exit).
  Your input -> hey! I am a Primaverachobot, powered by Rasa. How can I help you today?
  Your input -> how much is my VAT
  Your VAT value to pay is 2005.06
  Can I help you more today?
  Your input -> how much is my deductions
  Your Deductions value to pay is 4324.806
  Can I help you more today?
  Your input -> how much is compensa fund
  Your Compensation fund value to pay is 31.06
  Can I help you more today?
  Your input -> how many is Social sec
  Your Social Security value to pay is 3310.754
  Can I help you more today?
  Your input -> show me a positive insight
  In April, 15% of sales were done with compared clients in last 3 months. At the same period of 2020 this value was 5
  0%.
  Can I help you more today?
  Your input -> show me a neg insight
  We detected a significant variation in sales, 70% of this value in sale of goods.
  Can I help you more today?
  Your input -> show me a mega insight
  In April, 15% of sales were done with compared clients in last 3 months. At the same period of 2020 this value was 5
  0%.
  Can I help you more today?
  Your input -> show me a negati insight
  We detected a significant variation in people expenditures, 7% of this value in compensations.
  Can I help you more today?
  Your input -> show me a negative
  We detected a significant variation in people expenditures, 7% of this value in compensations.
  Can I help you more today?
  Your input -> show me a medium insight
  In the last 6 months, the tax of budgets which that resulted from orders was 10%. At the same period of 2020 was 85.
  Can I help you more today?
  Your input -> show me a med insight
  In the last 6 months, the tax of budgets which that resulted from orders was 10%. At the same period of 2020 was 85.
  Can I help you more today?
  Your input -> show me a pos insight
  In the last 6 months, the tax of budgets which that resulted from orders was 10%. At the same period of 2020 was 85.
  Can I help you more today?
  Your input -> show me a posi
  In the next 30 days, it will increase the disposibilities in 6000€
  Can I help you more today?
  Your input ->
```

Figure 2 - A limitation of Rasa.

(NOTE: At the left Anaconda Powershell Prompt is where the actions associated to the database run and I added some prints to test what and if the bot understood the keyword even if it was not correctly written and at the right, you can see the conversation between bot and user)

Advantages:

- more powerful and complex tool than chatterbot, because the code of rasa keeps being updated and chatterbot is no longer updated (*I found this limitation comparing the documentation of both tools*);
- it also has a similar algorithm to ChatterBot, which tries to compensate for users' typos.
- All the limitations of Chatterbot are solved with Rasa.

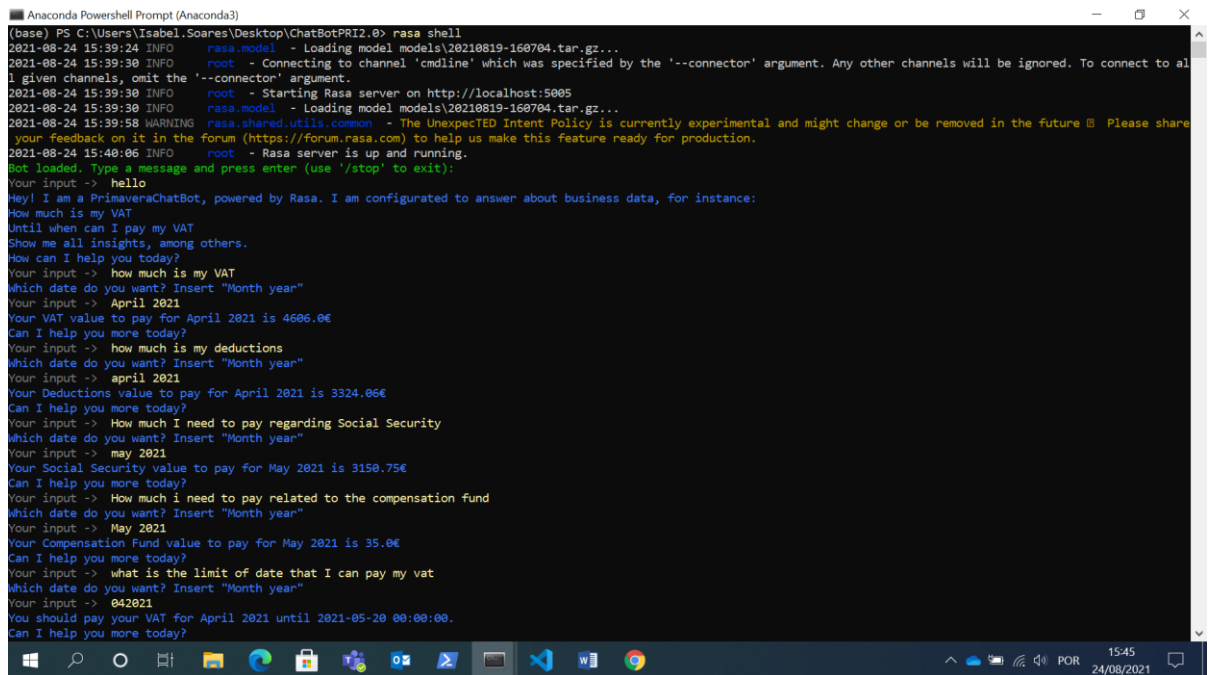
Both with Chatterbot and Rasa, I used some **type questions** regarding the *obligations*, such as:

- How much is my VAT?
- How much I need to pay regarding VAT?
- How much is my Social Security?
- How much I need to pay regarding Social Security?
- How much is my Deductions?
- How much I need to pay regarding Deductions?
- How much is my Compensation Fund?
- How much I need to pay regarding Compensation Fund?
- Until when can I pay my VAT?
- What is the limit of date that I can pay my VAT?
- Until when can I pay my Social Security?
- What is the limit of date that I can pay my Social Security?
- Until when can I pay my Deductions?
- What is the limit of date that I can pay my Deductions?
- Until when can I pay my Compensation Fund?
- What is the limit of date that I can pay my Compensation Fund?

And related to the *insights*, I used these:

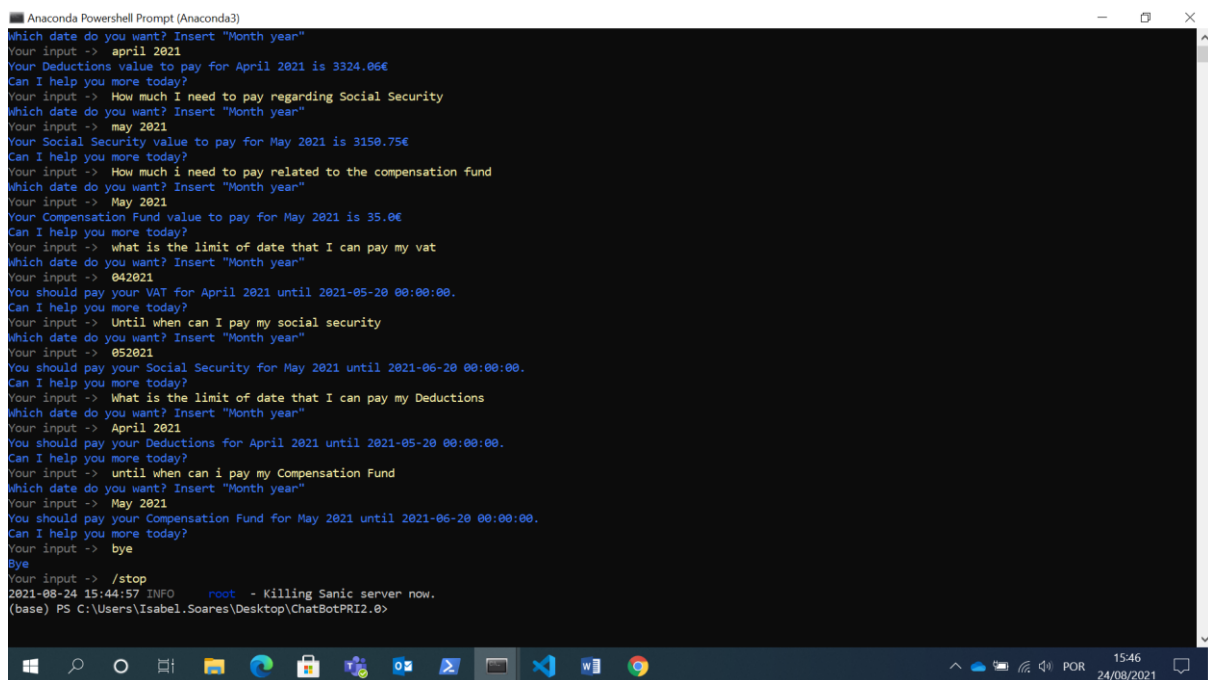
- Show me a positive insight.
- Show me a medium insight.
- Show me a negative insight.
- Show me all insights.
- Show me all positive insights.
- Show me all medium insights.
- Show me all negative insights.

The PrimaveraChatBot is able to answer all these questions (the user can write the date on different format from the one presented below):



```
(base) PS C:\Users\Isabel.Soaresh\Desktop\ChatBotPRI2.0> rasa shell
2021-08-24 15:39:24 INFO rasa.model - Loading model models\20210819-160704.tar.gz...
2021-08-24 15:39:30 INFO root - Connecting to channel 'cmdline' which was specified by the '--connector' argument. Any other channels will be ignored. To connect to all
1 given channels, omit the '--connector' argument.
2021-08-24 15:39:30 INFO root - Starting Rasa server on http://localhost:5005
2021-08-24 15:39:30 INFO rasa.model - Loading model models\20210819-160704.tar.gz...
2021-08-24 15:39:50 WARNING rasa.shared.utils.common - The UnexpectED Intent Policy is currently experimental and might change or be removed in the future. Please share
your feedback on it in the forum (https://forum.rasa.com) to help us make this feature ready for production.
2021-08-24 15:40:06 INFO root - Rasa server is up and running.
Bot loaded. Type a message and press enter (use '/stop' to exit):
Your input -> hello
Hey! I am a PrimaveraChatBot, powered by Rasa. I am configured to answer about business data, for instance:
How much is my VAT
Until when can I pay my VAT
Show me all insights, among others.
How can I help you today?
Your input -> how much is my VAT
Which date do you want? Insert "Month year"
Your input -> April 2021
Your VAT value to pay for April 2021 is 4606.0€
Can I help you more today?
Your input -> how much is my deductions
Which date do you want? Insert "Month year"
Your input -> april 2021
Your Deductions value to pay for April 2021 is 3324.06€
Can I help you more today?
Your input -> How much I need to pay regarding Social Security
Which date do you want? Insert "Month year"
Your input -> may 2021
Your Social Security value to pay for May 2021 is 3150.75€
Can I help you more today?
Your input -> How much i need to pay related to the compensation fund
Which date do you want? Insert "Month year"
Your input -> May 2021
Your Compensation Fund value to pay for May 2021 is 35.0€
Can I help you more today?
Your input -> what is the limit of date that I can pay my vat
Which date do you want? Insert "Month year"
Your input -> 042021
You should pay your VAT for April 2021 until 2021-05-20 00:00:00.
Can I help you more today?
```

Figure 3 - The bot answers questions about the obligations Part I.



```
Which date do you want? Insert "Month year"
Your input -> april 2021
Your Deductions value to pay for April 2021 is 3324.06€
Can I help you more today?
Your input -> How much I need to pay regarding Social Security
Which date do you want? Insert "Month year"
Your input -> may 2021
Your Social Security value to pay for May 2021 is 3150.75€
Can I help you more today?
Your input -> How much i need to pay related to the compensation fund
Which date do you want? Insert "Month year"
Your input -> May 2021
Your Compensation Fund value to pay for May 2021 is 35.0€
Can I help you more today?
Your input -> what is the limit of date that I can pay my vat
Which date do you want? Insert "Month year"
Your input -> 042021
You should pay your VAT for April 2021 until 2021-05-20 00:00:00.
Can I help you more today?
Your input -> Until when can I pay my social security
Which date do you want? Insert "Month year"
Your input -> 052021
You should pay your Social Security for May 2021 until 2021-06-20 00:00:00.
Can I help you more today?
Your input -> What is the limit of date that I can pay my Deductions
Which date do you want? Insert "Month year"
Your input -> April 2021
You should pay your Deductions for April 2021 until 2021-05-20 00:00:00.
Can I help you more today?
Your input -> until when can i pay my Compensation Fund
Which date do you want? Insert "Month year"
Your input -> May 2021
You should pay your Compensation Fund for May 2021 until 2021-06-20 00:00:00.
Can I help you more today?
Your input -> bye
Bye
Your input -> /stop
2021-08-24 15:44:57 INFO root - Killing Sanic server now.
(base) PS C:\Users\Isabel.Soaresh\Desktop\ChatBotPRI2.0>
```

Figure 4 - The bot answers questions about the obligations Part II.


```
Select Anaconda Powershell Prompt (Anaconda)
2021-08-16 18:02:55 INFO - Rasa server is up and running.
Processed story blocks: 100%
Not loaded. Visualization at http://localhost:5000/visualization.html .
Type a message and press enter (press 'Ctrl+C' to exit).
Your input -> hi
Your NLU model classified 'hi' with intent 'greet' and there are no entities, is this correct? Yes
-----
Chat History
# Bot You
1 action_listen
2 hi
   intent: greet 1.00
Current slots:
   obligation_type: None, obligation_date_key: None, insight_type: None, session_started_metadata: None
-----
The bot wants to run 'utter_greet', correct? Yes
Chat History
# Bot You
1 action_listen
2 hi
   intent: greet 1.00
3 utter_greet 1.00
   Hey! I am a PrimaveraChatBot, powered by Rasa. How can I help you today?
Current slots:
   obligation_type: None, obligation_date_key: None, insight_type: None, session_started_metadata: None
-----
The bot wants to run 'action_listen', correct? Yes
Your input -> until when can I pay my VAT
Is the intent 'ask_obligation_payment_date' correct for 'until when can I pay my [VAT](obligation_type)' and are all entities labeled correctly? Yes
-----
Chat History
# Bot You
1 action_listen
2 hi
   intent: greet 1.00
3 utter_greet 1.00
   Hey! I am a PrimaveraChatBot, powered by Rasa. How can I help you today?
   action_listen 1.00
4 until when can I pay my [VAT](obligation_type)
   intent: ask_obligation_payment_date 1.00
5 slot("obligation_type": "VAT")
```

Figure 7 - Running rasa interactive (continuation).

```
Select Anaconda Powershell Prompt (Anaconda)
Current slots:
   obligation_type: VAT, obligation_date_key: May 2021, insight_type: None, session_started_metadata: None
-----
The bot wants to run 'query_obligation_payment_date', correct? Yes
Chat History
# Bot You
1 action_listen
2 hi
   intent: greet 1.00
3 utter_greet 1.00
   Hey! I am a PrimaveraChatBot, powered by Rasa. How can I help you today?
   action_listen 1.00
4 until when can I pay my [VAT](obligation_type)
   intent: ask_obligation_payment_date 1.00
5 slot("obligation_type": "VAT")
   utter_ask_date 1.00
   Which date do you want?
   action_listen 1.00
6 [May 2021](obligation_date_key)
   intent: give_date_key 1.00
7 slot("obligation_date_key": "May 2021")
   query_obligation_payment_date 1.00
   You should pay your VAT until 2021-05-26 00:00:00.
Current slots:
   obligation_type: VAT, obligation_date_key: May 2021, insight_type: None, session_started_metadata: None
-----
The bot wants to run 'utter_how_can_i_help_more', correct? Yes
Chat History
# Bot You
1 action_listen
2 hi
   intent: greet 1.00
3 utter_greet 1.00
   Hey! I am a PrimaveraChatBot, powered by Rasa. How can I help you today?
   action_listen 1.00
4 until when can I pay my [VAT](obligation_type)
   intent: ask_obligation_payment_date 1.00
5 slot("obligation_type": "VAT")
   utter_ask_date 1.00
   Which date do you want?
   action_listen 1.00
6 [May 2021](obligation_date_key)
```

Figure 8 - Running rasa interactive (continuation).


```
Select Anaconda PowerShell Prompt (Anaconda3)

Current slots:
  obligation_type: VAT, obligation_date_key: None, insight_type: None, session_started_metadata: None
-----
/ The bot wants to run 'utter_ask_date', correct? Yes
-----
Chat History
# Bot You
1 action_listen
2 hi intent: greet 1.00
3 utter_greet 1.00 Hey! I am a PrismaVerChatBot, powered by Rasa. How can I help you today? action_listen 1.00
4 until when can I pay my [VAT](obligation_type) intent: ask_obligation_payment_date 1.00
5 slot{"obligation_type": "VAT"} utter_ask_date 1.00 which date do you want? action_listen 1.00

Current slots:
  obligation_type: VAT, obligation_date_key: None, insight_type: None, session_started_metadata: None
-----
/ The bot wants to run 'action_listen', correct? Yes
/ Your input -> May 2021
/ Is the intent 'give_date_key' correct for '[May 2021](obligation_date_key)' and are all entities labeled correctly? Yes
-----
Chat History
# Bot You
1 action_listen
2 hi intent: greet 1.00
3 utter_greet 1.00 Hey! I am a PrismaVerChatBot, powered by Rasa. How can I help you today? action_listen 1.00
4 until when can I pay my [VAT](obligation_type) intent: ask_obligation_payment_date 1.00
5 slot{"obligation_type": "VAT"} utter_ask_date 1.00 which date do you want? action_listen 1.00
6 [May 2021](obligation_date_key) intent: give_date_key 1.00
7 slot{"obligation_date_key": "May 2021"}

16:14 16/06/2021
```

Figure 9 - Running rasa interactive (continuation).

Note that the value that appears next to the actions and intents is the confidence that the bot has in each of them.

```
Select Anaconda PowerShell Prompt (Anaconda3)

5 slot{"obligation_type": "VAT"} utter_ask_date 1.00 which date do you want? action_listen 1.00
6 [May 2021](obligation_date_key) intent: give_date_key 1.00
7 slot{"obligation_date_key": "May 2021"} query_obligation_payment_date 1.00 You should pay your VAT until 2021-05-20 00:00:00. utter_how_can_i_help_more 1.00 Can I help you more today?

Current slots:
  obligation_type: VAT, obligation_date_key: May 2021, insight_type: None, session_started_metadata: None
-----
/ The bot wants to run 'utter_how_can_i_help_more', correct? Yes
-----
Chat History
# Bot You
1 action_listen
2 hi intent: greet 1.00
3 utter_greet 1.00 Hey! I am a PrismaVerChatBot, powered by Rasa. How can I help you today? action_listen 1.00
4 until when can I pay my [VAT](obligation_type) intent: ask_obligation_payment_date 1.00
5 slot{"obligation_type": "VAT"} utter_ask_date 1.00 which date do you want? action_listen 1.00
6 [May 2021](obligation_date_key) intent: give_date_key 1.00
7 slot{"obligation_date_key": "May 2021"} query_obligation_payment_date 1.00 You should pay your VAT until 2021-05-20 00:00:00. utter_how_can_i_help_more 1.00 Can I help you more today?

Current slots:
  obligation_type: VAT, obligation_date_key: May 2021, insight_type: None, session_started_metadata: None
-----
/ The bot wants to run 'action_listen', correct? Yes
/ Your input ->
/ Do you want to stop? Export & Quit
/ Export stories to (if file exists, this will append the stories)
Cancelled by user

2021-06-16 18:00:48 INFO rasa_core_training.interactive - Killing Semic server now.
(base) PS C:\Users\Isabel.Souares\Desktop\ChatBotPR12>
```

Figure 10 - Running rasa interactive (continuation).

While running *rasa interactive*, I could see a visualization of what was happening in real time with the bot:

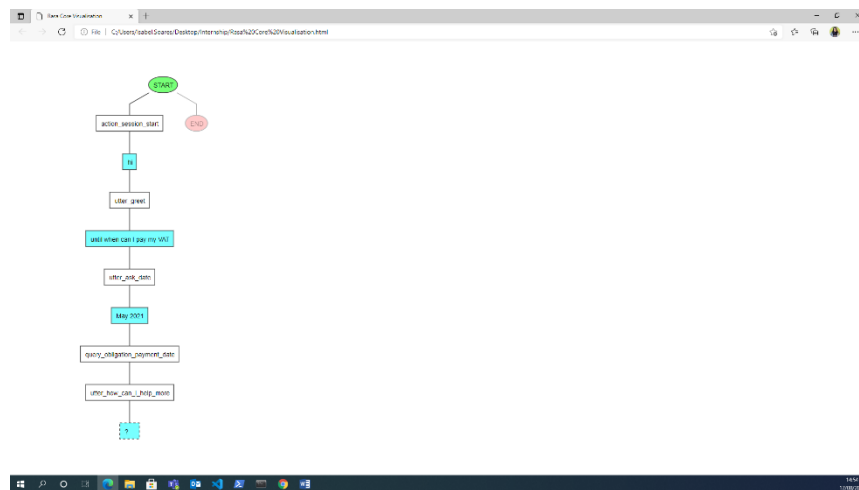


Figure 11 - Rasa visualization of the story.

Note: If you run the command *rasa visualize*, it generates a visual representation of your stories, like the one above.

2. Architectures

a. ChatterBot

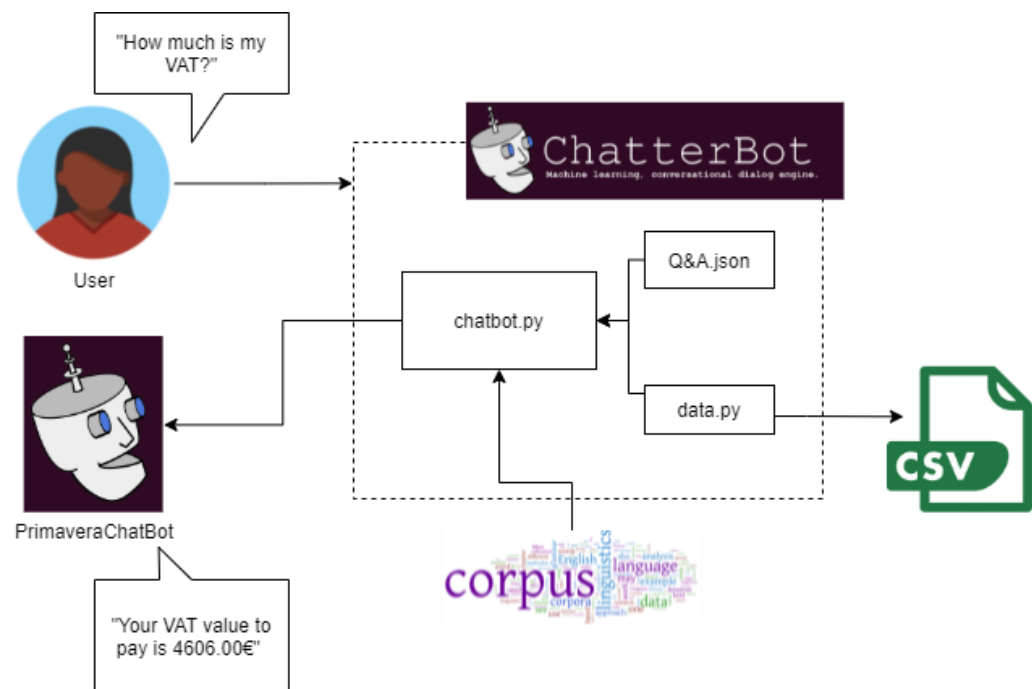


Figure 12 - ChatterBot Architecture.

b. Rasa

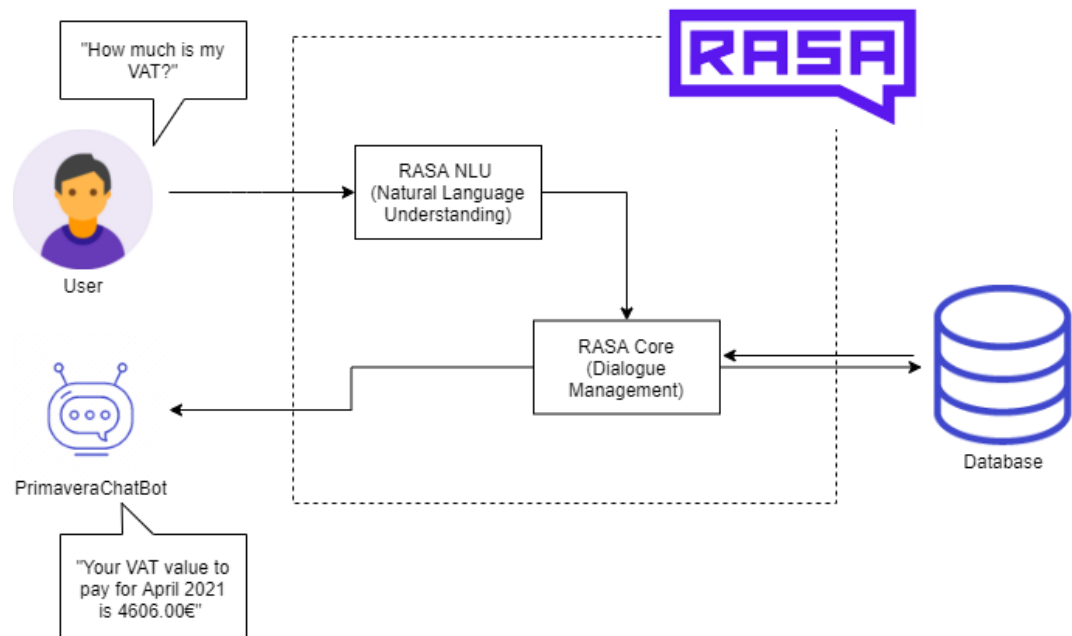


Figure 13 - Rasa Architecture.

3. Future Work

- On the question “How much is my VAT?” (for instance), the bot should understand that it is implicit that it is regarding the last month;
- The possibility of adding date key to the question, for example “How much is my VAT for April 2021?”;
- If the user inserts some date or some information that there is not on the database, the bot answers with an error message;
- The bot gives a suggestion of the questioning path for the user to follow. For instance, the user presses 1 to ask questions about obligations and 2 to ask questions about insights and then, the bot only gets data about that certain topic;
- Train more the bot in order for the bot to always understand the keywords despite sometimes being wrongly written;
- Add voice to the chatbot (this link can be useful if you do not have installation problems like me: <https://rasa.com/blog/how-to-build-a-voice-assistant-with-open-source-rasa-and-mozilla-tools/>)