

# Conversational agent design with Rasa

## Description

I decided to make a simple bot that can play a word guessing game. To simplify the design, only 4 words can be guessed. User is expected to pick one of the specified words and then answer bot's questions. It will ask 2 binary questions and guess your word based on your answers. User can then tell the bot if the guess was correct or not and end the conversation.

## Overview

There are 8 intents used: greet, goodbye, start\_game, ready, affirm, deny, bright, dark.

"Greet" intent initiates the conversation, after which the bot suggests playing a game. Both "affirm" and "start\_game" proceed with the game. The user is then asked to pick a word among 4 options: white, black, banana, aubergine. "Ready" intent prompts the bot to start asking questions.

First question is a simple yes/no question. "Affirm" and "deny" lead to their corresponding conversation branches. Second question expects a specific answer: "bright" or "dark".

So, out of 4 possible combinations of answers, each corresponding to a word, the bot picks the respective conversation branch and guesses a word.

There are 2 checkpoints used in the bot to allow for easier composition. First checkpoint is used right after the introductory conversation, before the first question is asked. Second checkpoint is used after the bot makes a guess. After the second checkpoint, two more paths can take place: a correct or incorrect guess.

## Design decisions

Among the guidelines suggested in [1], most relevant for this project are G1 and G16 about clarity of what the system can do, and how the user can influence it. With that in mind, even though my bot is very simple, I tried making responses concise with a prompt and the end of each for the user to reply to.

Only 4 words are supported in my implementation, though more could be added relatively easily. However, using pre-defined stories with Rasa does not scale well and a more hand-crafted solution would be more appropriate.

## References

[1] [Guidelines for Human-AI Interaction](#)

[2] [Will You Accept an Imperfect AI? Exploring Designs for Adjusting End-user Expectations of AI Systems](#)

## Conversation Examples

Guessing black:

```
Your input -> hi

Hey! I am a bot that can play a simple word game with you. Would you like to try?
Your input -> ok

Great! Here are 4 words we will be playing with:
- white
- black
- banana
- aubergine
Please remember one of these words but don't tell me! I will try to guess your word. Let me know when you are ready.
Your input -> got it

Is your word a color?
Your input -> yes

Is your word bright or dark?
Your input -> dark

I think your word is 'black'
Your input -> correct

Nice!
Ok, it's been nice playing, bye!
Your input -> bye

Bye
```

Guessing banana:

```
Your input -> hi

Hey! I am a bot that can play a simple word game with you. Would you
like to try?
Your input -> yes

Great! Here are 4 words we will be playing with:
- white
- black
- banana
- aubergine
Please remember one of these words but don't tell me! I will try to
guess your word. Let me know when you are ready.
Your input -> Okay, let's play

Is your word a color?
Your input -> no

Is your word bright or dark?
Your input -> Bright

I think your word is 'banana'
Your input -> yes

Nice!
Ok, it's been nice playing, bye!
Your input -> bye

Bye
```

Guessing aubergine:

```
Your input -> hey
Hey! I am a bot that can play a simple word game with you. Would you like to try?
Your input -> sure
Great! Here are 4 words we will be playing with:
- white
- black
- banana
- aubergine
Please remember one of these words but don't tell me! I will try to guess your word. Let me know when you are ready.
Your input -> ready
Is your word a color?
Your input -> it is not
Is your word bright or dark?
Your input -> it is dark
I think your word is 'aubergine'
Your input -> that is right
Nice!
Ok, it's been nice playing, bye!
```