Arabic Chatbot Sentiment Analysis using Flask API

Motivation:

- We found on huggingface that all chatbots are in English, and as our native language is Arabic, so not many people understand English, though we decided to build a chatbot in Arabic.

Summarization:

- We use 4 models from haggingface to build our project:
  - Helsinki-NLP/opus-mt-ar-en
  - facebook/blenderbot-400M-distill
  - Helsinki-NLP/opus-mt-en-ar
  - bhadresh-savani/distilbert-base-uncased-emotion
- we use Flask API to show the conversation between user and chatbot and to show different pictures for each expression of the chatbot

Procedures:

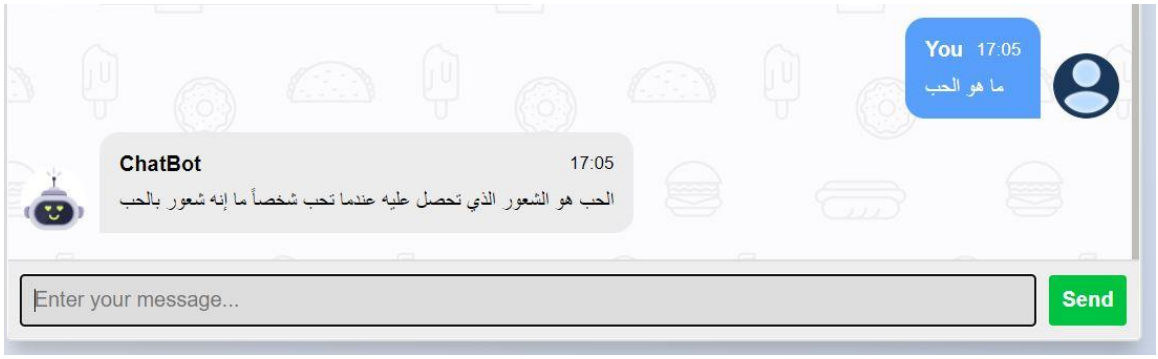
1- We take a text input in Arabic from the user.
2- We send it to an Arabic to English translation model.
3- Then, we send the model output to an English chatbot.
4- The output of chatbot is sent to sentiment analysis model, and to an English to Arabic translation model.
5- The output of an English to Arabic translation model is showed to the user ass a replay to his input.
6- The output of sentiment analysis model is used to determine the expression of the chatbot.
7- Flask API changes the image of the chatbot depending on the expression given by the sentiment analysis model.

Conclusion:

- Mini conversation:

Sad Expression**:**

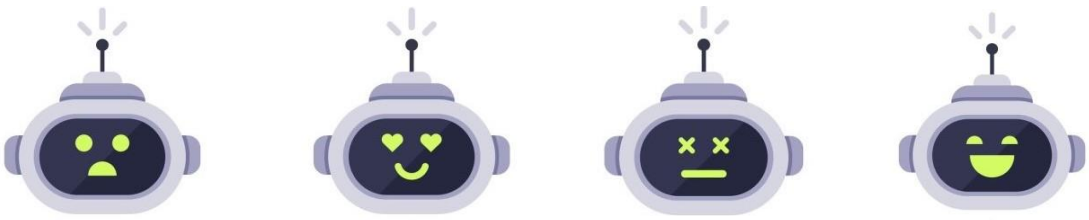
- Love Expression:



- Angry Expression:

- Joy Expression

Expressions:



Sad **Love** **Anger** **Joy**