

Name- _____ Section/Group _____

UID- _____ Semester – 1st _____

Subject –Disruptive Technologies _____ Subject Code - 21SPH-141 Branch – CSE _____

EXPERIMENT 2.3

Aim :

Chat Bot

Tool Used:

Google Collab

Basic Concept/ Command Description:

Rasa is an open source machine learning framework for building AI assistants and chatbots. There is something called “Rasa Action Server” where we need to write code in Python, that is mainly used to trigger External actions like Calling Google API or REST API etc.

Rasa has two main modules:

Rasa NLU for understanding user messages

Rasa Core for holding conversations and deciding what to do next

Code and Observations, Simulation

Screen Shots and Discussions:

Installing required libraries.

```

✓ 2m | pip install rasa==1.10.3
| python -m spacy download en
| pip install nest_asyncio==1.3.3

Collecting rasa==1.10.3
  Downloading rasa-1.10.3-py3-none-any.whl (510 kB)
  |████████████████████████████████████████| 510 kB 8.0 MB/s
Collecting tensorflow-estimator==2.1.0
  Downloading tensorflow_estimator-2.1.0-py2.py3-none-any.whl (448 kB)
  |████████████████████████████████████████| 448 kB 59.2 MB/s
Collecting prompt-toolkit<3.0,>=2.0
  Downloading prompt_toolkit-2.0.10-py3-none-any.whl (340 kB)
  |████████████████████████████████████████| 340 kB 48.1 MB/s
Collecting attrs<19.4,>=19.3
  Downloading attrs-19.3.0-py2.py3-none-any.whl (39 kB)
Collecting sanic<20.0.0,>=19.12.2
  Downloading sanic-19.12.5-py3-none-any.whl (73 kB)
  |████████████████████████████████████████| 73 kB 1.7 MB/s
Collecting sanic-jwt<1.5.0,>=1.3.2
  Downloading sanic-jwt-1.4.1.tar.gz (19 kB)
Collecting async_generator<1.11,>=1.10
  Downloading async_generator-1.10-py3-none-any.whl (18 kB)
Collecting slackclient<3.0.0,>=2.0.0
  Downloading slackclient-2.9.3-py2.py3-none-any.whl (96 kB)
  |████████████████████████████████████████| 96 kB 6.7 MB/s
Collecting SQLAlchemy<1.4.0,>=1.3.3
  Downloading SQLAlchemy-1.3.24-cp37-cp37m-manylinux2010_x86_64.whl (1.3 MB)
  |████████████████████████████████████████| 1.3 MB 17.8 MB/s
Collecting twilio<6.27,>=6.26
  Downloading twilio-6.26.3-py2.py3-none-any.whl (979 kB)
  |████████████████████████████████████████| 979 kB 53.8 MB/s
Requirement already satisfied: python-dateutil<2.9,>=2.8 in /usr/local/lib/python3.7/dist-packages (from rasa==1.10.3) (2.8.2)
  
```

#Import required libraries and create event loop

```

✓ 0s [2] import os

import rasa

import nest_asyncio

nest_asyncio.apply()

print("event loop ready")
  
```

event loop ready

#Create initial project as 'test_project'

```
from rasa.cli.scaffold import create_initial_project

project='test_project'

create_initial_project(project)

os.chdir(project)

print(os.listdir("."))

['tests', 'config.yml', 'actions.py', 'data', 'credentials.yml', 'domain.yml', '__init__.py', 'endpoints.yml', '__pycache__']
```

#Defining data

```
[9] model_path = rasa.train(domain, config, training_files, output)

print(model_path)

Training Core model...
Processed Story Blocks: 100% |██████████| 5/5 [00:00<00:00, 411.81it/s, # trackers=1]
Processed Story Blocks: 100% |██████████| 5/5 [00:00<00:00, 244.21it/s, # trackers=5]
Processed Story Blocks: 100% |██████████| 5/5 [00:00<00:00, 160.46it/s, # trackers=20]
Processed Story Blocks: 100% |██████████| 5/5 [00:00<00:00, 124.32it/s, # trackers=24]
Processed trackers: 100% |██████████| 5/5 [00:00<00:00, 90.68it/s, # actions=16]
Processed actions: 16it [00:00, 642.33it/s, # examples=16]
Processed trackers: 100% |██████████| 231/231 [00:04<00:00, 49.03it/s, # actions=126]
Epochs: 0% | | 0/100 [00:00<?, ?it/s] /usr/local/lib/python3.7/dist-packages/rasa/utils/tensorflow/model_data.py:386: VisibleDeprecationWarning: Creating an ndarray from ragged nested sequences (which is a common outcome if np.array(obj) where obj is a nested list/array of ragged sequences)
  final_data[k].append(np.concatenate(np.array(v)))
Epochs: 100% |██████████| 100/100 [00:13<00:00, 7.36it/s, t_loss=0.089, loss=0.017, acc=1.000]
Core model training completed.
Training NLU model...
/usr/local/lib/python3.7/dist-packages/rasa/utils/common.py:363: UserWarning: You specified 'DIE1' to train entities, but no entities are present in the training data. 5
Epochs: 0% | | 0/100 [00:00<?, ?it/s] /usr/local/lib/python3.7/dist-packages/rasa/utils/tensorflow/model_data.py:386: VisibleDeprecationWarning: Creating an ndarray from ragged nested sequences (which is a common outcome if np.array(obj) where obj is a nested list/array of ragged sequences)
  final_data[k].append(np.concatenate(np.array(v)))
Epochs: 100% |██████████| 100/100 [00:15<00:00, 6.46it/s, t_loss=1.562, l_loss=0.175, l_acc=1.000]
NLU model training completed.
Your Rasa model is trained and saved at '/content/test_project/test_project/models/20211220-044657.tar.gz'.
models/20211220-044657.tar.gz
```

#Data Model

#Importing Chat Bot from Rasa Jupyter

```
[9] model_path = rasa.train(domain, config, training_files, output)

print(model_path)

Training Core model...
Processed Story Blocks: 100% |██████████| 5/5 [00:00<00:00, 411.81it/s, # trackers=1]
Processed Story Blocks: 100% |██████████| 5/5 [00:00<00:00, 244.21it/s, # trackers=5]
Processed Story Blocks: 100% |██████████| 5/5 [00:00<00:00, 160.46it/s, # trackers=20]
Processed Story Blocks: 100% |██████████| 5/5 [00:00<00:00, 124.32it/s, # trackers=24]
Processed trackers: 100% |██████████| 5/5 [00:00<00:00, 90.68it/s, # actions=16]
Processed actions: 16it [00:00, 642.33it/s, # examples=16]
Processed trackers: 100% |██████████| 231/231 [00:04<00:00, 49.03it/s, # actions=126]
Epochs: 0% | | 0/100 [00:00<?, ?it/s] /usr/local/lib/python3.7/dist-packages/rasa/utils/tensorflow/model_data.py:386: VisibleDeprecationWarning: Creating an ndarray from ragged nested sequences (which is a common outcome if np.array(obj) where obj is a nested list/array of ragged sequences)
  final_data[k].append(np.concatenate(np.array(v)))
Epochs: 100% |██████████| 100/100 [00:13<00:00, 7.36it/s, t_loss=0.089, loss=0.017, acc=1.000]
Core model training completed.
Training NLU model...
/usr/local/lib/python3.7/dist-packages/rasa/utils/common.py:363: UserWarning: You specified 'DIE1' to train entities, but no entities are present in the training data. 5
Epochs: 0% | | 0/100 [00:00<?, ?it/s] /usr/local/lib/python3.7/dist-packages/rasa/utils/tensorflow/model_data.py:386: VisibleDeprecationWarning: Creating an ndarray from ragged nested sequences (which is a common outcome if np.array(obj) where obj is a nested list/array of ragged sequences)
  final_data[k].append(np.concatenate(np.array(v)))
Epochs: 100% |██████████| 100/100 [00:15<00:00, 6.46it/s, t_loss=1.562, l_loss=0.175, l_acc=1.000]
NLU model training completed.
Your Rasa model is trained and saved at '/content/test_project/test_project/models/20211220-044657.tar.gz'.
models/20211220-044657.tar.gz
```

```
from rasa.jupyter import chat

endpoints = "endpoints.yml"

chat(model_path, endpoints)
```

#Interacting with the chat bot

```
... Your bot is ready to talk! Type your messages here or send '/stop'.
hello
Hey! How are you?
I am fine
Great, carry on!
How are you
I am a bot, powered by Rasa.
Can you sing?
I am a bot, powered by Rasa.
I am sad
Here is something to cheer you up:
```

