Revolutionizing Customer Support with an Intelligent Chatbot (Using Twitter Dataset)

```
# Install necessary libraries
!pip install transformers
!pip install pandas
!pip install gradio
```

```
Collecting semantic-version~=2.0 (from gradio)
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Collecting starlette<1.0,>=0.40.0 (from gradio)
  Downloading starlette-0.46.2-py3-none-any.whl.metadata (6.2 kB)
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Downloading pydub-0.25.1-py2.py3-none-any.whl (32 kB)
Installing collected packages: pydub, uvicorn, tomlkit, semantic-version, ruff, python-multipart, groovy, ffmpy, aiofiles, starle
Successfully installed aiofiles-24.1.0 fastapi-0.115.12 ffmpy-0.5.0 gradio-5.27.1 gradio-client-1.9.1 groovy-0.1.2 pydub-0.25.1 p
```

```
# Import Libraries
import pandas as pd
import torch
from transformers import AutoTokenizer, AutoModelForSeq2SeqLM
import gradio as gr
```

```
# Upload the Twitter Customer Support Dataset
from google.colab import files
uploaded = files.upload()
```

⤵ [Choose Files] sample.csv
- **sample.csv**(text/csv) - 17357 bytes, last modified: 4/29/2025 - 100% done
Saving sample.csv to sample.csv

```
# Load Dataset
# Note: Replace 'customer_support_tweets.csv' with the actual uploaded filename if different
df = pd.read_csv('sample.csv')

# Explore Dataset
df.head()
```
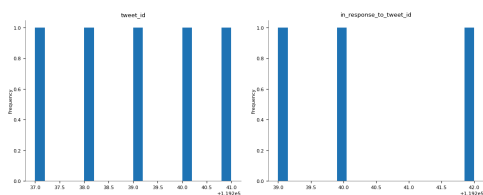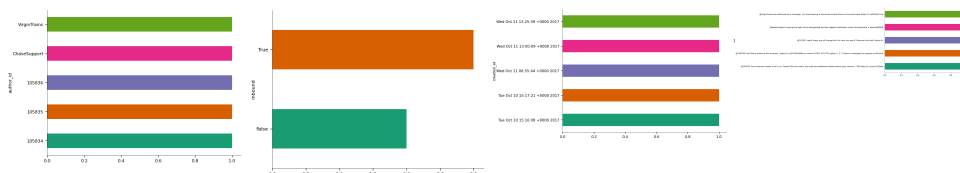
⤵ [Choose Files] sample.csv
- **sample.csv**(text/csv) - 17357 bytes, last modified: 4/29/2025 - 100% done
Saving sample.csv to sample.csv

```
# Load Dataset
# Note: Replace 'customer_support_tweets.csv' with the actual uploaded filename if different
df = pd.read_csv('sample.csv')

# Explore Dataset
```

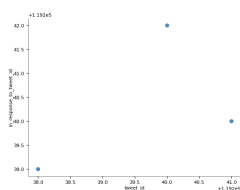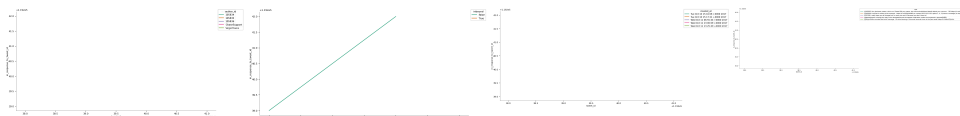|	tweet_id	author_id	inbound	created_at	text	response_tweet_id	in_response_to_tweet_id
0	119237	105834	True	Wed Oct 11 06:55:44 +0000 2017	@AppleSupport causing the reply to be disregar...	119236	NaN
1	119238	ChaseSupport	False	Wed Oct 11 13:25:49 +0000 2017	@105835 Your business means a lot to us. Pleas...	NaN	119239.0
2	119239	105835	True	Wed Oct 11 13:00:09 +0000 2017	@76328 I really hope you all change but I'm su...	119238	NaN
3	119240	VirginTrains	False	Tue Oct 10 15:16:08 +0000 2017	@105836 LiveChat is online at the moment - htt...	119241	119242.0
4	119241	105836	True	Tue Oct 10 15:17:21 +0000 2017	@VirginTrains see attached error message. I've...	119243	119240.0

Distributions

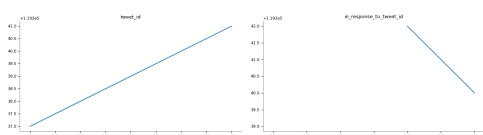### Categorical distributions

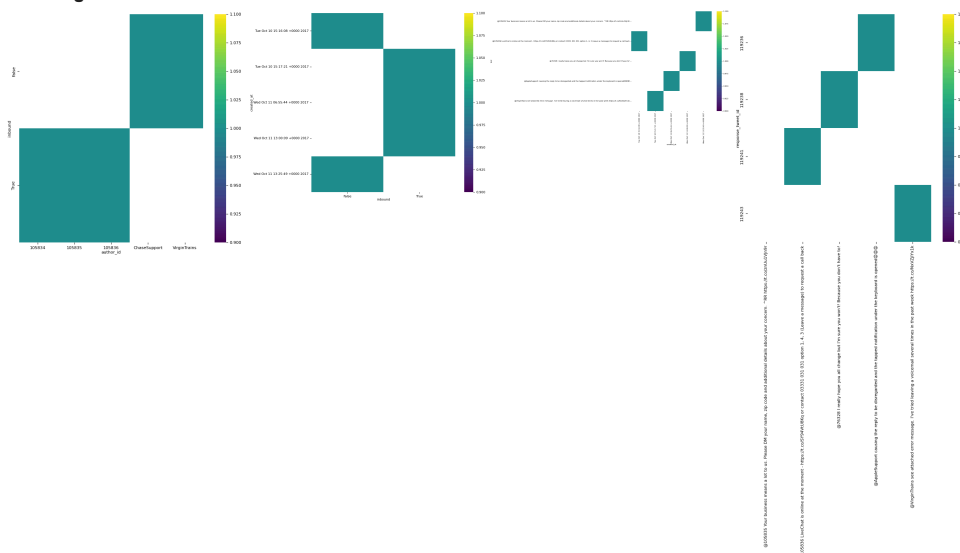

2-d distributions

Time series

Values

2-d categorical distributions

Faceted distributions

`<string>:5: FutureWarning:`

Passing `palette` without assigning `hue` is deprecated and will be removed in v0.14.0. Assign the `y` variable to `hue` and set

<string>:5: FutureWarning:

Passing `palette` without assigning `hue` is deprecated and will be removed in v0.14.0. Assign the `x` variable to `hue` and set

<string>:5: FutureWarning:

Passing `palette` without assigning `hue` is deprecated and will be removed in v0.14.0. Assign the `y` variable to `hue` and set

<string>:5: FutureWarning:

```python
# Preprocess Dataset
# Focus on inbound customer queries only
customer_queries = df[df['inbound'] == True]['text'].dropna().tolist()
```

```python
# Load Pre-trained Conversational AI Model
model_name = "facebook/blenderbot-400M-distill"
tokenizer = AutoTokenizer.from_pretrained(model_name)
model = AutoModelForSeq2SeqLM.from_pretrained(model_name)
```

⇥ /usr/local/lib/python3.11/dist-packages/huggingface_hub/utils/_auth.py:94: UserWarning:
    The secret `HF_TOKEN` does not exist in your Colab secrets.
    To authenticate with the Hugging Face Hub, create a token in your settings tab (https://huggingface.co/settings/tokens), set it as
    You will be able to reuse this secret in all of your notebooks.
    Please note that authentication is recommended but still optional to access public models or datasets.
      warnings.warn(

```python
# Define Chatbot Response Function
def customer_support_response(user_input):
    inputs = tokenizer([user_input], return_tensors="pt", truncation=True)
    outputs = model.generate(**inputs, max_length=100)
    reply = tokenizer.decode(outputs[0], skip_special_tokens=True)
    return reply
```