import re

from collections import Counter

import matplotlib.pyplot as plt

from wordcloud import WordCloud

def read\_chat(file\_path):

with open(file\_path, 'r', encoding='utf-8') as file:

chat\_text = file.read()

return chat\_text

def extract\_messages(chat\_text):

pattern = re.compile(r'(\d{1,2}/\d{1,2}/\d{2,4},? \d{1,2}:\d{2}(?: [APMapm]{2})? - .+?: .+)')

messages = re.findall(pattern, chat\_text)

return messages

def analyze\_participants(messages):

participants = set()

for message in messages:

sender = re.search(r' - (.+?):', message)

if sender:

participants.add(sender.group(1))

return participants

def plot\_message\_frequency(messages):

senders = [re.search(r' - (.+?):', message).group(1) for message in messages if re.search(r' - (.+?):', message)]

counter = Counter(senders)

plt.bar(counter.keys(), counter.values())

plt.xlabel('Participants')

plt.ylabel('Number of Messages')

plt.title('Message Frequency by Participant')

plt.show()

def generate\_wordcloud(chat\_text):

wordcloud = WordCloud(width = 800, height = 800,

background\_color ='white',

stopwords = set(["media", "omitted"]),

min\_font\_size = 10).generate(chat\_text)

plt.figure(figsize = (8, 8), facecolor = None)

plt.imshow(wordcloud)

plt.axis("off")

plt.tight\_layout(pad = 0)

plt.show()

if \_\_name\_\_ == "\_\_main\_\_":

file\_path = "Chatfile.txt" #'path\_to\_your\_chat\_file.txt' # Replace with the path to your exported WhatsApp chat file

chat\_text = read\_chat(file\_path)

messages = extract\_messages(chat\_text)

participants = analyze\_participants(messages)

print("Participants:", participants)

plot\_message\_frequency(messages)

generate\_wordcloud(chat\_text)