# EXERCISE 7: ENCRYPTED PUBSUB

import flet as ft

from flet.security import encrypt, decrypt

class Message:

    def \_\_init\_\_(self, user: str, text: str, passkey: str):

        self.user = user

        self.text = text

        self.passkey = passkey

        self.encrypted\_text = encrypt(self.text, self.passkey)

def main(page: ft.Page):

    page.horizontal\_alignment = ft.CrossAxisAlignment.STRETCH

    page.title = "Flet Chat"

    # Send a message

    def send\_message\_click(e):

        if message.value != "":

            page.pubsub.send\_all\_on\_topic(

                publish\_to.value,

                Message(user.value, message.value, passkey.value)

            )

            print(f"Message sent: {user.value} - {message.value}")

            message.value = ""

            page.update()

    # Receive a message

    def on\_message(topic, msg: Message):

        decrypted = decrypt(msg.encrypted\_text, passkey.value)

        chat.controls.append(ft.Text(f"{msg.user}: {decrypted}"))

        print(f"Message from {msg.user}: {msg.text}")

        page.update()

    # Subscribe to a group

    def subscribe\_on\_change(e):

        page.pubsub.unsubscribe\_all()

        page.pubsub.subscribe\_topic(subscribe\_to.value, on\_message)

        print(f"Subscribed to {subscribe\_to.value}")

    # Publish a message to a group

    publish\_to = ft.Dropdown(

        label="Publish to",

        options=[

            ft.dropdown.Option("Group 1"),

            ft.dropdown.Option("Group 2"),

            ft.dropdown.Option("Group 3")

        ],

        width=200,

        on\_change=lambda e: print(f"Publishing to {publish\_to.value}"))

    # Subscribe to a group

    subscribe\_to = ft.Dropdown(

        label="Subscribe to",

        options=[

            ft.dropdown.Option("Group 1"),

            ft.dropdown.Option("Group 2"),

            ft.dropdown.Option("Group 3")

        ],

        width=200,

        on\_change=subscribe\_on\_change,

    )

    # Chat messages

    chat = ft.ListView(

        expand=True,

        spacing=10,

        auto\_scroll=True,

    )

    user=ft.TextField(label="Username", width=150)

    passkey=ft.TextField(label="Passkey", width=150)

    # New message input

    message = ft.TextField(

        label="Message",

        expand=True,

        on\_submit=send\_message\_click,

    )

    page.add(

        ft.Container(

            content= chat,

            border=ft.border.all(1, ft.colors.OUTLINE),

            border\_radius=5,

            padding=10,

            expand=True,

        ),

        ft.Column([

            ft.Row([publish\_to, subscribe\_to, passkey]),

            ft.Row([user, message, ft.ElevatedButton("Send", on\_click=send\_message\_click)])

        ])

    )

ft.app(main)

