import tkinter as tk

from tkinter import ttk, scrolledtext

class DroneBasicsApp:

def \_\_init\_\_(self, root):

self.root = root

self.root.title("Drone Basics App")

self.root.geometry("800x600")

self.notebook = ttk.Notebook(root)

self.notebook.pack(fill=tk.BOTH, expand=True)

self.create\_introduction\_tab()

self.create\_types\_tab()

self.create\_components\_tab()

self.create\_regulations\_tab()

self.create\_safety\_tab()

def create\_introduction\_tab(self):

introduction\_frame = ttk.Frame(self.notebook)

self.notebook.add(introduction\_frame, text="Introduction")

text = """

\*\*What is a Drone?\*\*

A drone, technically known as an Unmanned Aerial Vehicle (UAV), is an aircraft without a human pilot onboard.

Drones are controlled either remotely by a human operator or autonomously by onboard computers.

They come in various shapes and sizes, serving diverse purposes, from recreational photography to industrial inspections.

\*\*Brief History:\*\*

The concept of unmanned aircraft dates back to the early 20th century.

Initially developed for military applications, drones have evolved significantly with advancements in

technology, including GPS, miniaturized electronics, and battery technology.

\*\*Uses of Drones:\*\*

\* Photography and Videography: Capturing stunning aerial views.

\* Agriculture: Monitoring crops and livestock.

\* Delivery: Transporting packages.

\* Inspection: Inspecting infrastructure like bridges and power lines.

\* Search and Rescue: Assisting in disaster relief.

\* Scientific Research: Studying wildlife and weather patterns.

\* Recreational Flying: Enjoying the hobby.

"""

text\_widget = scrolledtext.ScrolledText(introduction\_frame, wrap=tk.WORD, height=25, width=80)

text\_widget.insert(tk.END, text)

text\_widget.config(state=tk.DISABLED)

text\_widget.pack(padx=10, pady=10)

def create\_types\_tab(self):

types\_frame = ttk.Frame(self.notebook)

self.notebook.add(types\_frame, text="Types of Drones")

text = """

\*\*Types of Drones:\*\*

\* \*\*Multi-rotor Drones:\*\*

\* Most common type, known for their stability and maneuverability.

\* Used for photography, videography, and inspections.

\* Examples: Quadcopters, Hexacopters, Octocopters.

\* \*\*Fixed-wing Drones:\*\*

\* Resemble traditional airplanes, offering longer flight times and distances.

\* Used for surveying, mapping, and long-range inspections.

\* \*\*Single-rotor Helicopters:\*\*

\* Similar to traditional helicopters, offering high payloads and stability.

\* Used for specialized tasks like heavy lifting.

\* \*\*Hybrid VTOL Drones:\*\*

\* Combine the vertical takeoff and landing of multi-rotors with the efficiency of fixed-wings.

\* Used for various applications requiring both flexibility and endurance.

"""

text\_widget = scrolledtext.ScrolledText(types\_frame, wrap=tk.WORD, height=25, width=80)

text\_widget.insert(tk.END, text)

text\_widget.config(state=tk.DISABLED)

text\_widget.pack(padx=10, pady=10)

def create\_components\_tab(self):

components\_frame = ttk.Frame(self.notebook)

self.notebook.add(components\_frame, text="Drone Components")

text = """

\*\*Key Drone Components:\*\*

\* \*\*Frame:\*\* The structural backbone of the drone.

\* \*\*Motors:\*\* Provide the power to rotate the propellers.

\* \*\*Propellers:\*\* Generate lift and thrust.

\* \*\*Electronic Speed Controllers (ESCs):\*\* Regulate the speed of the motors.

\* \*\*Flight Controller:\*\* The brain of the drone, controlling its flight.

\* \*\*GPS Module:\*\* Provides location and navigation information.

\* \*\*Battery:\*\* Powers the drone's components.

\* \*\*Camera:\*\* Captures images and videos.

\* \*\*Transmitter and Receiver:\*\* Enable communication between the drone and the remote controller.

\* \*\*Sensors (e.g., accelerometers, gyroscopes, barometers):\*\* Provide data for flight stabilization and navigation.

"""

text\_widget = scrolledtext.ScrolledText(components\_frame, wrap=tk.WORD, height=25, width=80)

text\_widget.insert(tk.END, text)

text\_widget.config(state=tk.DISABLED)

text\_widget.pack(padx=10, pady=10)

def create\_regulations\_tab(self):

regulations\_frame = ttk.Frame(self.notebook)

self.notebook.add(regulations\_frame, text="Drone Regulations")

text = """

\*\*Drone Regulations (General):\*\*

Drone regulations vary significantly by country and region.

It is essential to understand and comply with local laws.

\* \*\*Registration:\*\* Many countries require drone registration.

\* \*\*Altitude Limits:\*\* Restrictions on maximum flight altitudes.

\* \*\*No-Fly Zones:\*\* Prohibited areas like airports, military bases, and sensitive infrastructure.

\* \*\*Visual Line of Sight (VLOS):\*\* Requirement to maintain direct visual contact with the drone.

\* \*\*Privacy Laws:\*\* Regulations regarding capturing and using images and videos.

\* \*\*Commercial vs. Recreational Use:\*\* Different rules may apply.

\*\*Always check your local aviation authority for the most up to date regulations.\*\*

"""

text\_widget = scrolledtext.ScrolledText(regulations\_frame, wrap=tk.WORD, height=25, width=80)

text\_widget.insert(tk.END, text)

text\_widget.config(state=tk.DISABLED)

text\_widget.pack(padx=10, pady=10)

def create\_safety\_tab(self):

safety\_frame = ttk.Frame(self.notebook)

self.notebook.add(safety\_frame, text="Drone Safety")

text = """

\*\*Drone Safety Tips:\*\*

\* \*\*Pre-flight Checks:\*\* Inspect the drone for any damage or loose parts.

\* \*\*Weather Conditions:\*\* Avoid flying in strong winds, rain, or other adverse weather.

\* \*\*Safe Takeoff and Landing Areas:\*\* Choose open areas away from people and obstacles.

\* \*\*Maintain Visual Line of Sight (VLOS):\*\* Keep the drone within your sight.

\* \*\*Emergency Procedures:\*\* Know how to land the drone in case of emergencies.

\* \*\*Battery Management:\*\* Monitor battery levels and avoid flying with low battery.

\* \*\*Avoid Flying Over People and Crowds:\*\* Minimize risks to others.

\* \*\*Follow Local Regulations:\*\* Adhere to all applicable drone laws.

\* \*\*Propeller Safety:\*\* Be careful around spinning propellers.

"""

text\_widget = scrolledtext.ScrolledText(safety\_frame, wrap=tk.WORD, height=25, width=80)

text\_widget.insert(tk.END, text)

text\_widget.config(state=tk.DISABLED)

text\_widget.pack(padx=10, pady=10)

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

root = tk.Tk()

app = DroneBasicsApp(root)

root.mainloop()