```
import streamlit as st
import numpy as np
import pandas as pd
import joblib

# ------------------------------------------------------
# PAGE STYLE (BACKGROUND COLOR + TEXT COLORS)
# ------------------------------------------------------
page_bg = """
<style>
/* Background */
.stApp {
    background-color: #0A0F24;   /* Dark navy */
    color: #FFFFFF;
    font-family: 'Arial';
}

/* Headers */
h1, h2, h3 {
    color: #14C7FF;   /* Neon blue */
    font-weight: 700;
}

/* Input labels */
label {
    color: #D2E9FF !important;
}

/* Number/Select boxes */
.stNumberInput > div > div > input,
.stSelectbox div div span {
    color: #000000 !important;
    font-weight: 600;
}

/* Buttons */
.stButton>button {
    background-color: #14C7FF;
    color: black;
    font-size: 18px;
    font-weight: bold;
    border-radius: 10px;
    border: 2px solid #0EA5E9;
}

.stButton>button:hover {
    background-color: #0EA5E9;
    color: white;
    border: 2px solid white;
}
```

```
/* DataFrame box */
[data-testid="stDataFrame"] {
    background-color: #11172F;
}

</style>
"""
st.markdown(page_bg, unsafe_allow_html=True)

# ------------------------------------------------------
# LOAD MODEL
# ------------------------------------------------------
model = joblib.load("best_pipeline_improved.joblib")

st.title("📊 YouTube Ad Revenue Prediction App")
st.markdown("### Predict YouTube video ad revenue using the improved ML pipeline
model.")

# ------------------------------------------------------
# OPTIONS
# ------------------------------------------------------
category_options = ["Entertainment", "Gaming", "Education", "Tech", "Comedy",
"Music"]
device_options = ["Mobile", "Desktop", "Tablet", "TV"]
country_options = ["India", "USA", "UK", "Canada", "Australia", "Germany"]
day_options = ["Monday", "Tuesday", "Wednesday", "Thursday", "Friday", "Saturday",
"Sunday"]

# ------------------------------------------------------
# USER INPUT UI
# ------------------------------------------------------
st.header("🎬 Enter Video Details")

views = st.number_input("Views", min_value=0, value=10000)
likes = st.number_input("Likes", min_value=0, value=500)
comments = st.number_input("Comments", min_value=0, value=100)
engagement_rate = (likes + comments) / views if views > 0 else 0

watch_time_minutes = st.number_input("Watch Time (minutes)", min_value=0.0,
value=10000.0)
video_length_minutes = st.number_input("Video Length (minutes)", min_value=0.0,
value=10.0)
subscribers = st.number_input("Subscribers Count", min_value=0, value=100000)

category = st.selectbox("Category", category_options)
device = st.selectbox("Device", device_options)
country = st.selectbox("Country", country_options)
day_of_week = st.selectbox("Day of Week", day_options)
```

```
year = st.selectbox("Year", [2023, 2024, 2025])
month = st.selectbox("Month", list(range(1, 13)))
day = st.selectbox("Day", list(range(1, 32)))
hour = st.selectbox("Hour", list(range(0, 24)))
is_weekend = st.selectbox("Is Weekend? (0=No, 1=Yes)", [0, 1])

# ---------------------------------------------------------
# INPUT DATA PREPARATION
# ---------------------------------------------------------
input_data = pd.DataFrame({
    "views": [views],
    "likes": [likes],
    "comments": [comments],
    "Engagement_Rate": [engagement_rate],
    "watch_time_minutes": [watch_time_minutes],
    "video_length_minutes": [video_length_minutes],
    "subscribers": [subscribers],
    "category": [category],
    "device": [device],
    "country": [country],
    "year": [year],
    "month": [month],
    "day": [day],
    "day_of_week": [day_options.index(day_of_week)],
    "hour": [hour],
    "is_weekend": [is_weekend],
})

st.subheader("▧ Input Summary")
st.dataframe(input_data)

# ---------------------------------------------------------
# PREDICTION
# ---------------------------------------------------------
if st.button("Predict Revenue"):
    log_pred = model.predict(input_data)[0]
    revenue = np.expm1(log_pred)

    st.success(f"💰 Estimated Ad Revenue: **${revenue:.2f} USD**")
```