```
# Install dependencies
!pip install -q transformers torch gradio

# Imports
import torch
from transformers import GPT2LMHeadModel, GPT2Tokenizer
from transformers import AutoTokenizer,
AutoModelForSequenceClassification
import gradio as gr

# Load GPT-2 model and tokenizer
gpt2_tokenizer = GPT2Tokenizer.from_pretrained("gpt2")
gpt2_model = GPT2LMHeadModel.from_pretrained("gpt2").to(device)

# Load fine-tuned BERT model and tokenizer for Fake News Detection
bert_tokenizer =
AutoTokenizer.from_pretrained("Pulk17/Fake-News-Detection")
bert_model = AutoModelForSequenceClassification.from_pretrained(
    "Pulk17/Fake-News-Detection"
).to(device)

# Fake news generator
def generate_fake_news(prompt):
    inputs = gpt2_tokenizer.encode(prompt, return_tensors="pt").to(device)
    outputs = gpt2_model.generate(
        inputs,
        max_length=200,
        num_return_sequences=1,
```

```
        no_repeat_ngram_size=2,
        do_sample=True,
        temperature=0.7,
        top_k=50,
        top_p=0.95,
        early_stopping=True
    )
    generated_text = gpt2_tokenizer.decode(outputs[0],
skip_special_tokens=True)
    return generated_text

# News classification (fake/real)
def detect_news(text):
    inputs = bert_tokenizer(text, return_tensors="pt", truncation=True,
padding=True).to(device)
    with torch.no_grad():
        outputs = bert_model(**inputs)
    logits = outputs.logits
    predicted_class = torch.argmax(logits, dim=1).item()
    confidence = torch.softmax(logits, dim=1)[0][predicted_class].item()
    label = "🟥 Fake News" if predicted_class == 0 else "🟩 Real News"
    return f"{label} (Confidence: {confidence:.2f})"

# Gradio Interface
with gr.Blocks() as demo:
    gr.Markdown("## 📰 Fake News Generator & Detector (GPT-2 +
BERT)")
```

```
    with gr.Tab("🛠️ Generate Fake News"):
        with gr.Row():
            input_text = gr.Textbox(
                label="Enter a News Headline or Prompt",
                placeholder="e.g. Scientists discover a talking dolphin species near Japan...",
                lines=2
            )
        generate_btn = gr.Button("Generate")
        output_text = gr.Textbox(label="Generated News Article")
        generate_btn.click(generate_fake_news, inputs=input_text, outputs=output_text)

    with gr.Tab("🔍 Detect Fake or Real"):
        with gr.Row():
            detect_input = gr.Textbox(
                label="Enter a News Article or Statement",
                placeholder="Paste a paragraph to detect if it's fake or real...",
                lines=5
            )
        detect_btn = gr.Button("Detect")
        detect_output = gr.Textbox(label="Detection Result")
        detect_btn.click(detect_news, inputs=detect_input, outputs=detect_output)

# Launch the Gradio app
demo.launch()
```