Set up Email Service: First, set up a simulated email service or use a library like smtplib to send emails. For simulation
ail.

Define Background Task: Create a background task function that takes necessary parameters (e.g., email address, re

Trigger Background Task: Modify the endpoint for submitting a review to trigger the background task after saving th

Here's an example implementation:

python
Copy code

```
import asyncio
from fastapi import BackgroundTasks, FastAPI, HTTPException
from sqlalchemy.orm import Session
from pydantic import BaseModel
from typing import Optional
from .models import Review
from .database import SessionLocal
from .email_service import send_confirmation_email

app = FastAPI()

# Define background task
async def send_confirmation(review_id: int, email: str):
    # Simulate sending confirmation email
    await send_confirmation_email(email, review_id)

# Endpoint for submitting a review
@app.post("/books/{book_id}/reviews/")
async def submit_review(book_id: int, review: ReviewCreate, background_tasks: BackgroundTasks, db: Session = Dep
    db_review = Review(**review.dict(), book_id=book_id)
    db.add(db_review)
    db.commit()
    db.refresh(db_review)

    # Trigger background task to send confirmation email
    background_tasks.add_task(send_confirmation, db_review.id, review.email)

    return db_review
```

Testing:
Set up Test Database: Before writing tests, set up a test database or use fixtures to ensure a clean state for testing.

Write Test Cases: Write test cases for each API endpoint to ensure they behave as expected. Use FastAPI's test client

Run Tests: Run the test suite to verify the functionality of the API endpoints.

Here's an example of how you can write test cases for the API endpoints:

python
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```
from fastapi.testclient import TestClient
from .main import app
from .database import engine

client = TestClient(app)

# Set up test database
def setup_module(module):
    engine.execute("CREATE TABLE IF NOT EXISTS test_reviews (id SERIAL PRIMARY KEY, text TEXT, rating INTEGER, boo
```

```
    # Add sample data if needed

def teardown_module(module):
    engine.execute("DROP TABLE IF EXISTS test_reviews")

# Test case for submitting a review
def test_submit_review():
    response = client.post("/books/1/reviews/", json={"text": "Great book!", "rating": 5, "email": "test@example.com"})
    assert response.status_code == 200
    assert response.json()["text"] == "Great book!"
    # Add more assertions as needed
```