In [2]:

```python
import requests, json

# === Replace with your actual Groq API key ===
api_key = "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"

# === Get user input ===
user_prompt = input("📝 Enter your prompt: ")

# === Groq API endpoint and headers ===
url = "https://api.groq.com/openai/v1/chat/completions"
headers = {
    "Authorization": f"Bearer {api_key}",
    "Content-Type": "application/json"
}

# === Request payload with LLaMA3 model ===
payload = {
    "model": "llama3-70b-8192",
    "messages": [
        {"role": "system", "content": "You are a helpful assistant."},
        {"role": "user", "content": user_prompt}
    ],
    "temperature": 0.7
}

# === Make request and print result ===
response = requests.post(url, headers=headers, data=json.dumps(payload))

if response.status_code == 200:
    reply = response.json()['choices'][0]['message']['content']
    print("\n🤖 AI Response:\n")
    print(reply)
else:
    print("\n❌ Error:", response.status_code, response.text)
```

AI Response:

A nuclear power plant is a type of power station that generates electricity by usi
ng nuclear reactions. Here's how it works in simple words:

Step 1: Fuel
The plant uses special fuel called uranium, which is a type of radioactive materia
l. The uranium is formed into small pellets and loaded into long, hollow tubes cal
led fuel rods.

Step 2: Reactor
The fuel rods are placed in a big tank called a reactor. The reactor is like a hug
e kettle that helps the nuclear reaction happen. Inside the reactor, the uranium a
toms split (or "react") with each other, releasing a lot of heat energy. This proc
ess is called nuclear fission.

Step 3: Heat Transfer
The heat energy produced in the reactor is transferred to a special liquid called
coolant. The coolant is pumped through the reactor to absorb the heat. This heat i
s then carried away from the reactor to a separate location.

Step 4: Steam Generation
The hot coolant is used to heat up water in a separate tank called a steam generat
or. This heats up the water to produce steam.

Step 5: Turbine
The steam is then directed into a big machine called a turbine. The turbine is con
nected to a generator, which is like a giant magnet. As the steam spins the turbin
e, it causes the generator to spin really fast.

Step 6: Electricity Generation
The spinning generator produces electricity, which is sent to the power grid and d
istributed to homes, businesses, and industries.

Step 7: Cooling
Finally, the steam that drove the turbine is cooled down in a condenser, which tur
ns it back into liquid water. This cooled water is then reused in the steam genera
tor to produce more steam, and the cycle starts all over again.

That's the basic working of a nuclear power plant!

In [ ]: