Source Code

```
import hashlib
import random
customers = [
 {"name": "Alice", "age": 28, "location": "New York", "browsing":
["smartphone", "fitness", "shoes"]},
 {"name": "Raj", "age": 35, "location": "Delhi", "browsing":
["laptop", "headphones", "AI courses"]},
 {"name": "Fatima", "age": 24, "location": "Dubai", "browsing":
["makeup", "skincare", "jewelry"]},
]
product_map = {
 "smartphone": "Latest iPhone 15 Pro",
 "fitness": "Fitbit Charge 6",
 "shoes": "Nike Air Max 270",
 "laptop": "Dell XPS 13",
 "headphones": "Sony WH-1000XM5",
 "AI courses": "AI for Beginners - Coursera",
 "makeup": "MAC Lipstick Set",
 "skincare": "Neutrogena Hydro Boost",
 "jewelry": "Swarovski Pendant"
}
def recommend_products(customer):
 print(f"\n[Personalized Recommendations for {customer['name']}]")
 interests = customer["browsing"]
 for item in interests:
 recommendation = product_map.get(item, "No match found")
 print(f" - Based on your interest in {item}, we recommend:
{recommendation}")
def chatbot_interface():
 print("\n[Multilingual Chatbot]")
 lang = input("Choose your language (English/Hindi/Tamil):
").lower()
 greeting = {
 "english": "Hi! Tell me what products you're interested in:",
 "hindi": "नमस्ते! कृपया बताएं कक आप ककन उत्पादों में रुचि रखते हैं:",
 "tamil": "வணக்கம்! நீங்கள் விருப்பப்படும் தயாரிப்புகளைச் ச ொல்லுங்கள்:"}
 print(greeting.get(lang, greeting["english"]))
 interests = input("> ").lower().split(",")
 for interest in interests:
 interest = interest.strip()
 rec = product_map.get(interest, "Sorry, no product found.")
 print(f" - {interest.title()}: {rec}")
```

```
def simulate_behavior(customer):
 print(f"\n[Simulated Behavior Data for {customer['name']}]")
 time_spent = random.randint(5, 120)
 print(f" - Browsing time today: {time_spent} minutes")
 if time_spent > 60:
 print(" - You seem highly engaged! Check out this limited-time
offer!")
 else:
 print(" - Here's something new to grab your attention!")
def encrypt_user_data(name, interests):
 raw = f"{name}{''.join(interests)}"
 return hashlib.sha256(raw.encode()).hexdigest()
if __name__ == "__main__":
 print("=== Personalized Marketing & Customer Experience System
===")
 for customer in customers:
 recommend_products(customer)
 simulate_behavior(customer)
 encrypted_id = encrypt_user_data(customer["name"],
customer["browsing"])
 print(f" - Encrypted Customer ID: {encrypted_id}\n")
 chatbot_interface()
```