import random  
  
  
# Simulating a database with a list  
class SimCardDatabase:  
 def \_\_init\_\_(self):  
 # This will store SIM card details as dictionaries  
 self.database = []  
  
 # Method to add SIM card details to the database  
 def add\_sim\_card(self, sim\_details):  
 self.database.append(sim\_details)  
  
 # Method to check if the number already exists in the database  
 def number\_exists(self, number):  
 return any(sim['phone\_number'] == number for sim in self.database)  
  
  
# Class to generate a new 10-digit number  
class SimCardProvider:  
 def \_\_init\_\_(self, provider\_name):  
 self.provider\_name = provider\_name  
 self.database = SimCardDatabase()  
  
 # Method to generate a unique 10-digit phone number  
 def generate\_phone\_number(self):  
 while True:  
 # Generate a random 10-digit number  
 phone\_number = random.randint(1000000000, 9999999999)  
  
 # Check if this number already exists in the database  
 if not self.database.number\_exists(phone\_number):  
 return phone\_number  
  
 # Method to assign a new SIM card to a customer  
 def assign\_sim\_card(self, customer):  
 phone\_number = self.generate\_phone\_number()  
 sim\_details = {  
 "customer\_name": customer.name,  
 "email": customer.email,  
 "phone\_number": phone\_number,  
 "provider": self.provider\_name  
 }  
  
 # Store the SIM card details in the database  
 self.database.add\_sim\_card(sim\_details)  
  
 return sim\_details  
  
  
# Class to represent a customer  
class Customer:  
 def \_\_init\_\_(self, name, email):  
 self.name = name  
 self.email = email  
 self.sim\_card = None  
  
 # Method to request a SIM card from the provider  
 def request\_sim\_card(self, provider):  
 sim\_card\_details = provider.assign\_sim\_card(self)  
 self.sim\_card = sim\_card\_details  
 return sim\_card\_details  
  
  
# Example usage  
if \_\_name\_\_ == "\_\_main\_\_":  
 # Create an instance of the SIM card provider  
 provider = SimCardProvider("NewProvider")  
  
 # Create customer instances  
 customer\_1 = Customer("Alice", "alice@example.com")  
 customer\_2 = Customer("Bob", "bob@example.com")  
 customer\_3 = Customer("Charlie", "charlie@example.com")  
  
 # Assign SIM cards to customers  
 print("SIM card details for Alice:", customer\_1.request\_sim\_card(provider))  
 print("SIM card details for Bob:", customer\_2.request\_sim\_card(provider))  
 print("SIM card details for Charlie:", customer\_3.request\_sim\_card(provider))

