# Inventory Management System Flowchart

**Flowchart nodes:**

- Start
- Initialize the Inventory Management System
- Track low stock items → track_low()
- if the option is 6
- if the option is 7 — Option
- Generate inventory reports → generate_report()
- End
- option()
- if the option is 5 — for display a product details → display_product()
- search_item()
- Display current inventory status
- if the option is 4 — Search for products by ID or name
- If the choice is 1 — Option
- if the choice is 2 — Yes
- if the choice is 3 — Yes — Remove products from inventory → remove item → remove_item() → The product is removed from inventory → display_product()
- Add new products to inventory with unique IDs,Name,Price,Quantity
- if add item Id,Name,Price,Quantity → add_item() → details added to inventory → display_product()
- Update existing product information like quantity → update item like ID,Name,Price,Quantity → update_item() → the details is updated in inventory → display_product()

**Sub-process definitions (bottom left):**

- display_product() → display the product what available in inventory → Getting product details from DB and display it
- remove_item() → remove the product from inventory by id or name → remove the product from DB
- update_item() → we can update the Name,price,quantity → Save this changes to DB
- track_low() → track a low stock items from DB → Getting low quantity product from DB
- search_item() → search a product by name,id → search from db
- generate_report() → generate a report → generate a report getting information from db
- option() → if user select any option perform that else end the program

**Code (right side):**
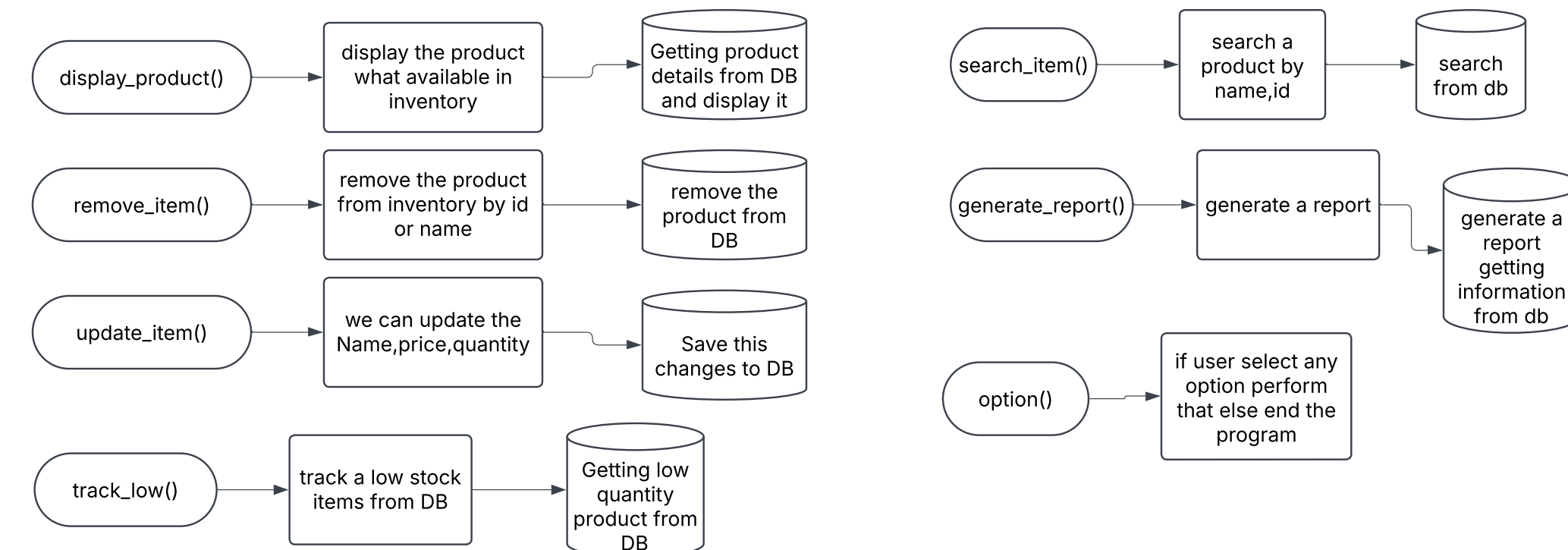
```python
# Add Item
def add_item(item_id, name, price, quantity):
    inventory[item_id] = {"name": name, "price": price, "quantity": quantity}
    print(f"{name} added!\n")

# Update Item
def update_item(item_id, quantity):
    if item_id in inventory:
        inventory[item_id]["quantity"] = quantity
        print(f"Item {item_id} updated!\n")
    else:
        print("Item not found!\n")

# Remove Item
def remove_item(item_id):
    if item_id in inventory:
        del inventory[item_id]
        print(f"Item {item_id} removed!\n")
    else:
        print("Item not found!\n")

# Search Item
def search_item(search):
    for item_id, details in inventory.items():
        if item_id == search or details["name"].lower() == search.lower():
            print(f"Found - {details}\n")
            return
    print("Item not found!\n")

# Display Inventory
def display_inventory():
    print("\nCurrent Inventory:")
    for item_id, details in inventory.items():
        print(f"ID: {item_id}, {details}")
        print()

# Track Low Stock Items
def track_low(threshold=5):
    print("\nLow Stock Items:")
    for item_id, details in inventory.items():
        if details["quantity"] <= threshold:
            print(f"ID: {item_id}, {details}")
            print()

# Function to show options and perform actions
def menu():
    while True:
        print("\nInventory Management System")
        print("1. Add Item")
        print("2. Update Item")
        print("3. Remove Item")
        print("4. Search Item")
        print("5. Display Inventory")
        print("6. Track Low Stock Items")
        print("7. Generate Inventory Report")
        choice = input("Enter your choice: ")
        if choice == "1":
            add_item()
        elif choice == "2":
            update_item()
        elif choice == "3":
            remove_item()
        elif choice == "4":
            search_item()
        elif choice == "5":
            display_inventory()
        elif choice == "6":
            track_low_stock()
        elif choice == "7":
            print("Generating inventory report...\n")
        else:
            print("Invalid choice! Exiting program...\n")
            break
```