In [4]:
```python
import sqlite3

# Connect to (or create) the database
conn = sqlite3.connect("sales_data.db")
cursor = conn.cursor()

# Step 1: Create the table if it doesn't exist
cursor.execute("""
CREATE TABLE IF NOT EXISTS sales (
    id INTEGER PRIMARY KEY AUTOINCREMENT,
    product TEXT,
    quantity INTEGER,
    price REAL
);
""")

# Step 2: Delete existing records to prevent duplicates
cursor.execute("DELETE FROM sales")

# Step 3: Insert sample data
sample_data = [
    ('Product A', 10, 15.0),
    ('Product B', 5, 20.0),
    ('Product C', 8, 12.5),
    ('Product B', 6, 15.0),
    ('Product B', 3, 20.0),
    ('Product C', 5, 15.0)
]

cursor.executemany("INSERT INTO sales (product, quantity, price) VALUES (?, ?, ?

# Step 4: Commit and close connection
conn.commit()
conn.close()

print("Database created and sample data inserted successfully.")
```

```
Database created and sample data inserted successfully.
```

In [5]:
```python
import sqlite3
import pandas as pd
# Step 1: Connect to database
conn = sqlite3.connect("sales_data.db")

# Step 2: First SQL query – basic product summary
query1 = """
SELECT
    product,
    SUM(quantity) AS total_qty,
    SUM(quantity * price) AS revenue
FROM sales
GROUP BY product;
"""

# Step 3: Run query1 and load into DataFrame
df1 = pd.read_sql_query(query1, conn)

# Step 4: Second SQL query – summary ordered by revenue
query2 = """
```

```
SELECT
    product,
    SUM(quantity) AS total_quantity_sold,
    SUM(quantity * price) AS total_revenue
FROM sales
GROUP BY product
ORDER BY total_revenue DESC;
"""

df2 = pd.read_sql_query(query2, conn)

# Step 5: Close connection
conn.close()

# Step 6: Print both results
print("Sales Summary (unsorted):")
print(df1)
print()

print("Sales Summary (sorted by revenue):")
print(df2)
print()
```

```
Sales Summary (unsorted):
     product  total_qty  revenue
0  Product A         10    150.0
1  Product B         14    250.0
2  Product C         13    175.0

Sales Summary (sorted by revenue):
     product  total_quantity_sold  total_revenue
0  Product B                   14          250.0
1  Product C                   13          175.0
2  Product A                   10          150.0
```

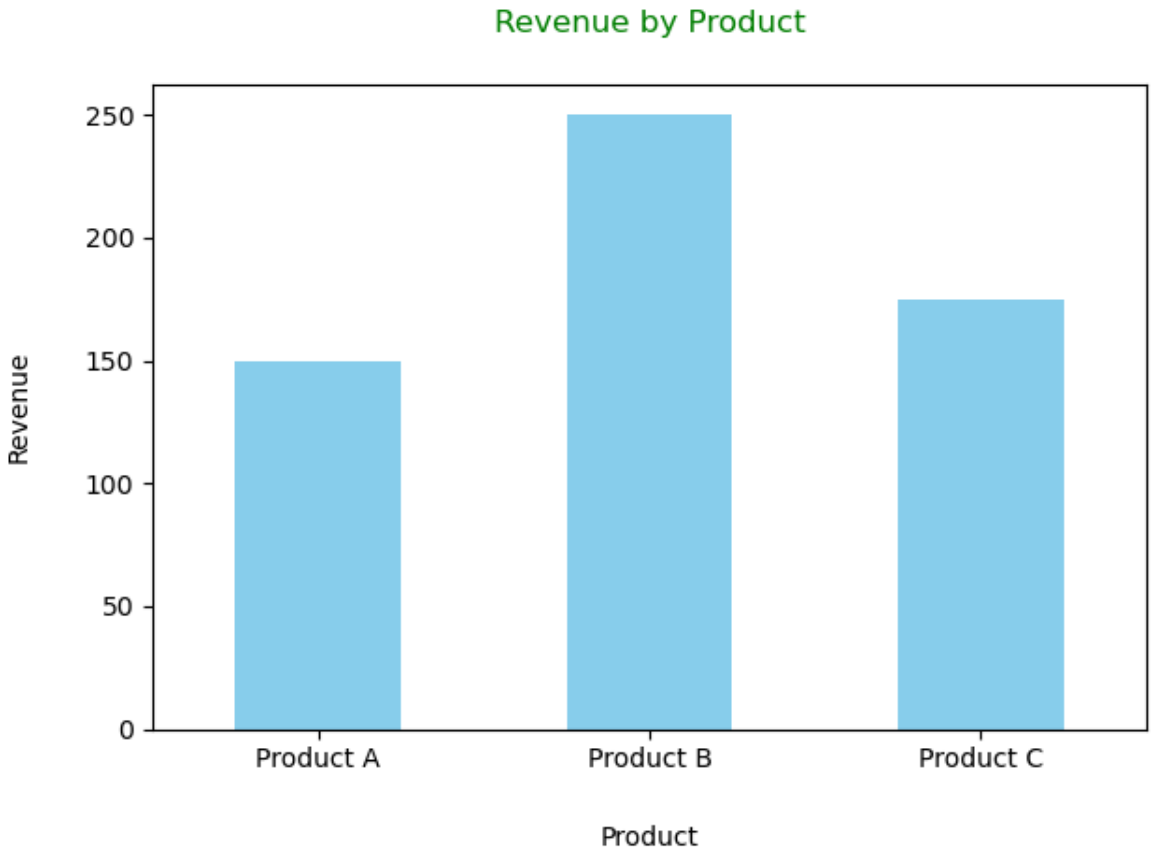
In [6]:

```
import matplotlib.pyplot as plt

# Plot bar chart
df1.plot(kind='bar', x='product', y='revenue', color='skyblue', legend=False)
plt.xticks(rotation=0)
plt.title("Revenue by Product",pad=20,color="green")
plt.ylabel("Revenue",labelpad=20)
plt.xlabel("Product",labelpad=20)
plt.tight_layout()

# Optional: Save the chart
plt.savefig("sales_chart.png")

# Show the chart
plt.show()
```


Revenue by Product
250
200
150
100
50
0
Revenue
Product A
Product B
Product C
Product

In [ ]: