In [62]:
```
!pip install ipython-sql
```

```
Requirement already satisfied: ipython-sql in c:\users\lenovo\anaconda3\lib\site-packages (0.5.0)
Requirement already satisfied: prettytable in c:\users\lenovo\anaconda3\lib\site-packages (from ipython-sql) (3.
16.0)
Requirement already satisfied: ipython in c:\users\lenovo\anaconda3\lib\site-packages (from ipython-sql) (8.27.0
)
Requirement already satisfied: sqlalchemy>=2.0 in c:\users\lenovo\anaconda3\lib\site-packages (from ipython-sql)
(2.0.34)
Requirement already satisfied: sqlparse in c:\users\lenovo\anaconda3\lib\site-packages (from ipython-sql) (0.5.3
)
Requirement already satisfied: six in c:\users\lenovo\anaconda3\lib\site-packages (from ipython-sql) (1.16.0)
Requirement already satisfied: ipython-genutils in c:\users\lenovo\anaconda3\lib\site-packages (from ipython-sql
) (0.2.0)
Requirement already satisfied: typing-extensions>=4.6.0 in c:\users\lenovo\anaconda3\lib\site-packages (from sql
alchemy>=2.0->ipython-sql) (4.11.0)
Requirement already satisfied: greenlet!=0.4.17 in c:\users\lenovo\anaconda3\lib\site-packages (from sqlalchemy>
=2.0->ipython-sql) (3.0.1)
Requirement already satisfied: decorator in c:\users\lenovo\anaconda3\lib\site-packages (from ipython->ipython-s
ql) (5.1.1)
Requirement already satisfied: jedi>=0.16 in c:\users\lenovo\anaconda3\lib\site-packages (from ipython->ipython-
sql) (0.19.1)
Requirement already satisfied: matplotlib-inline in c:\users\lenovo\anaconda3\lib\site-packages (from ipython->i
python-sql) (0.1.6)
Requirement already satisfied: prompt-toolkit<3.1.0,>=3.0.41 in c:\users\lenovo\anaconda3\lib\site-packages (fro
m ipython->ipython-sql) (3.0.43)
Requirement already satisfied: pygments>=2.4.0 in c:\users\lenovo\anaconda3\lib\site-packages (from ipython->ipy
thon-sql) (2.15.1)
Requirement already satisfied: stack-data in c:\users\lenovo\anaconda3\lib\site-packages (from ipython->ipython-
sql) (0.2.0)
Requirement already satisfied: traitlets>=5.13.0 in c:\users\lenovo\anaconda3\lib\site-packages (from ipython->i
python-sql) (5.14.3)
Requirement already satisfied: colorama in c:\users\lenovo\anaconda3\lib\site-packages (from ipython->ipython-sq
l) (0.4.6)
Requirement already satisfied: wcwidth in c:\users\lenovo\anaconda3\lib\site-packages (from prettytable->ipython
-sql) (0.2.5)
Requirement already satisfied: parso<0.9.0,>=0.8.3 in c:\users\lenovo\anaconda3\lib\site-packages (from jedi>=0.
16->ipython->ipython-sql) (0.8.3)
Requirement already satisfied: executing in c:\users\lenovo\anaconda3\lib\site-packages (from stack-data->ipytho
n->ipython-sql) (0.8.3)
Requirement already satisfied: asttokens in c:\users\lenovo\anaconda3\lib\site-packages (from stack-data->ipytho
n->ipython-sql) (2.0.5)
Requirement already satisfied: pure-eval in c:\users\lenovo\anaconda3\lib\site-packages (from stack-data->ipytho
n->ipython-sql) (0.2.2)
```

In [63]:
```
%load_ext sql
```

In [64]:
```
%sql sqlite:///sales_data.db
```

In [65]:
```
# Method 1: Load SQLite database
import sqlite3
conn = sqlite3.connect("sales_data.db")
cursor = conn.cursor()
```

In [66]:
```
cursor.execute('''
CREATE TABLE IF NOT EXISTS sales (
    id INTEGER PRIMARY KEY AUTOINCREMENT,
    product TEXT,
    quantity INTEGER,
    price REAL
)
''')
```

Out[66]:
```
<sqlite3.Cursor at 0x2aed10638c0>
```

In [67]:
```
sales_data = [
    ('Apple', 10, 1.2),
    ('Banana', 5, 0.5),
    ('Apple', 15, 1.2),
    ('Orange', 8, 0.8),
    ('Banana', 10, 0.5),
    ('Orange', 12, 0.8)
]
cursor.executemany("INSERT INTO sales (product, quantity, price) VALUES (?, ?, ?)", sales_data)
conn.commit()
```

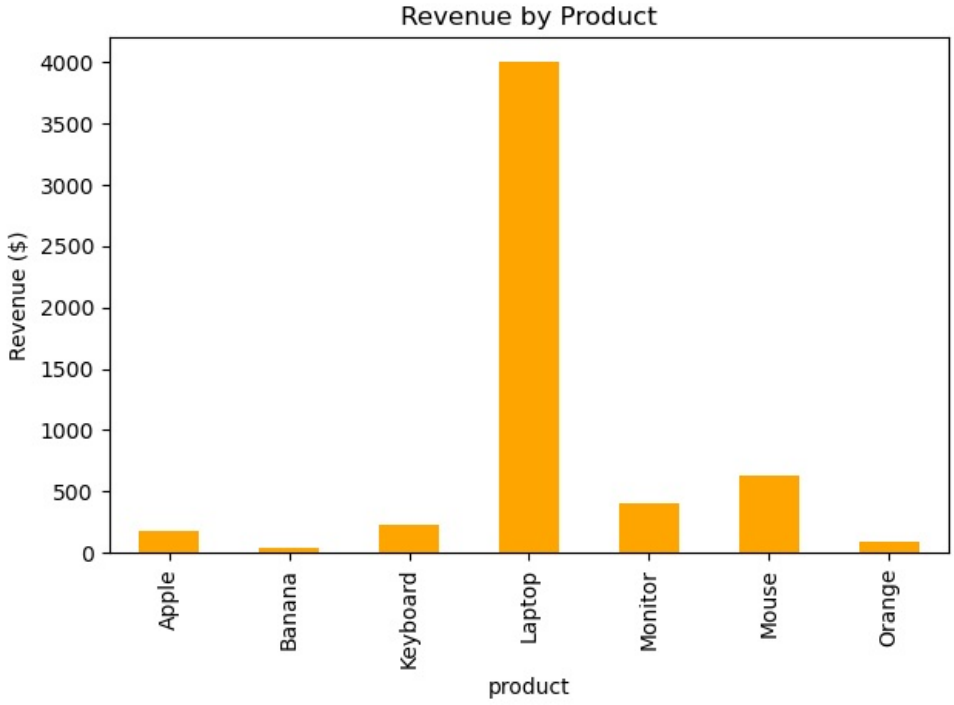
In [69]:
```
query = """
SELECT
    product,
    SUM(quantity) AS total_qty,
    SUM(quantity * price) AS revenue
```

```
FROM
    sales
GROUP BY
    product
"""
```

In [76]:
```
import pandas as pd
df = pd.read_sql_query(query, conn)
print(df)
```

```
    product  total_qty  revenue
0     Apple        150    180.0
1    Banana         90     45.0
2  Keyboard          5    225.0
3    Laptop          5   4000.0
4   Monitor          2    400.0
5     Mouse         25    625.0
6    Orange        120     96.0
```

In [78]:
```
import matplotlib.pyplot as plt
df.plot(kind='bar', x='product', y='revenue', legend=False, color='orange')
plt.ylabel("Revenue ($)")
plt.title("Revenue by Product")
plt.tight_layout()
```



In [80]:
```
plt.savefig("sales_chart.png")
plt.show()
```

```
<Figure size 640x480 with 0 Axes>
```

In [82]:
```
conn.close()
```

In [84]:
```
import sqlite3
conn = sqlite3.connect("sales_data.db")
cursor = conn.cursor()
```

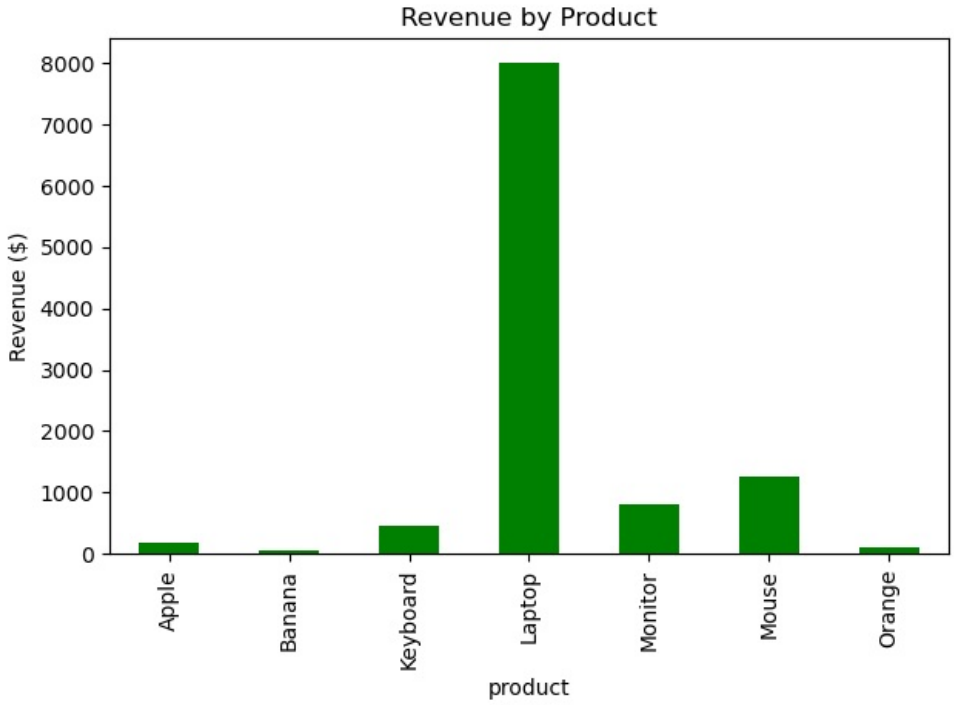
In [86]:
```
cursor.execute('''
CREATE TABLE IF NOT EXISTS sales (
    id INTEGER PRIMARY KEY AUTOINCREMENT,
    product TEXT,
    quantity INTEGER,
    price REAL
)
''')
sales_data = [
    ('Laptop', 3, 800.00),
    ('Mouse', 10, 25.00),
    ('Keyboard', 5, 45.00),
    ('Monitor', 2, 200.00),
    ('Mouse', 15, 25.00),
    ('Laptop', 2, 800.00)
]
cursor.executemany("INSERT INTO sales (product, quantity, price) VALUES (?, ?, ?)", sales_data)
conn.commit()
```

In [88]:
```
query = """
SELECT
    product,
    SUM(quantity) AS total_qty,
    SUM(quantity * price) AS revenue
FROM
    sales
GROUP BY
    product
"""
```

In [90]:
```
import pandas as pd
df = pd.read_sql_query(query, conn)
print(df)
```

```
    product  total_qty  revenue
0     Apple        150    180.0
1    Banana         90     45.0
2  Keyboard         10    450.0
3    Laptop         10   8000.0
4   Monitor          4    800.0
5     Mouse         50   1250.0
6    Orange        120     96.0
```

In [92]:
```
import matplotlib.pyplot as plt
df.plot(kind='bar', x='product', y='revenue', legend=False, color='green')
plt.ylabel("Revenue ($)")
plt.title("Revenue by Product")
plt.tight_layout()
```



In [94]:
```
plt.savefig("sales_chart.png")
plt.show()
```

```
<Figure size 640x480 with 0 Axes>
```

In [96]:
```
conn.close()
```