

```
import pandas as pd
import numpy as np
import sqlite3

# Set up database connection
conn = sqlite3.connect('database.db')

# Extract data from the source
data = pd.read_csv('source_data.csv')

# Check for missing values
if data.isnull().values.any():
    data.fillna(0, inplace=True)
    print('Missing values have been replaced with 0.')

# Transform the data
data['total_sales'] = data['price'] * data['quantity']
data['profit'] = data['total_sales'] - data['cost']

# Convert dates to datetime format
data['date'] = pd.to_datetime(data['date'], format='%m/%d/%Y')

# Filter data by date range
start_date = '2021-01-01'
end_date = '2021-12-31'
data = data[(data['date'] >= start_date) & (data['date'] <= end_date)]

# Aggregate data by month
monthly_data = data.groupby(pd.Grouper(key='date', freq='M')).agg({
    'total_sales': 'sum',
    'profit': 'sum',
    'quantity': 'sum',
    'price': 'mean'
}).reset_index()

# Load the transformed data into the database
monthly_data.to_sql('sales', conn, if_exists='replace', index=False)
```

```
# Create a view for top-selling products
```

```
top_products = pd.read_sql_query("""
```

```
SELECT product, SUM(quantity) AS total_sold
```

```
FROM sales
```

```
GROUP BY product
```

```
ORDER BY total_sold DESC
```

```
LIMIT 10;
```

```
""", conn)
```

```
top_products.to_sql('top_products', conn, if_exists='replace',  
index=False)
```

```
# Close the database connection
```

```
conn.close()
```

```
# Print completion message
```

```
print('ETL process complete.')
```