# Praktikum Data Mining Minggu Ke-11

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```python
#no.1
import pandas as pd
df = pd.read_csv('transaction.csv')
df.head()
```

| | InvoiceNo | StockCode | Qty | InvoiceDate | CustomerID | Country |
|---|---|---|---|---|---|---|
| 0 | 537626 | 22725 | 830 | 12/7/2010 14:57 | 12347 | Iceland |
| 1 | 537626 | 22729 | 948 | 12/7/2010 14:57 | 12347 | Iceland |
| 2 | 537626 | 22195 | 695 | 12/7/2010 14:57 | 12347 | Iceland |
| 3 | 542237 | 22725 | 636 | 1/26/2011 14:30 | 12347 | Iceland |
| 4 | 542237 | 22729 | 536 | 1/26/2011 14:30 | 12347 | Iceland |

Analisa :
Menampilkan dataset yang ada pada file transaction.csv

```python
#no.2
import pandas as pd
df['InvoiceDate'] = pd.to_datetime(df['InvoiceDate'])
df['year'] = df['InvoiceDate'].dt.year
df['month'] = df['InvoiceDate'].dt.month
filtered_df = df[(df['Country'] == 'Germany') & (df['year'] == 2011)]
result_df = filtered_df[['Qty', 'Country', 'month', 'year']]
result_df.head()
```

| | Qty | Country | month | year |
|---|---|---|---|---|
| 1185 | 628 | Germany | 5 | 2011 |
| 1186 | 981 | Germany | 5 | 2011 |
| 1187 | 212 | Germany | 5 | 2011 |
| 1188 | 910 | Germany | 5 | 2011 |
| 1189 | 668 | Germany | 5 | 2011 |

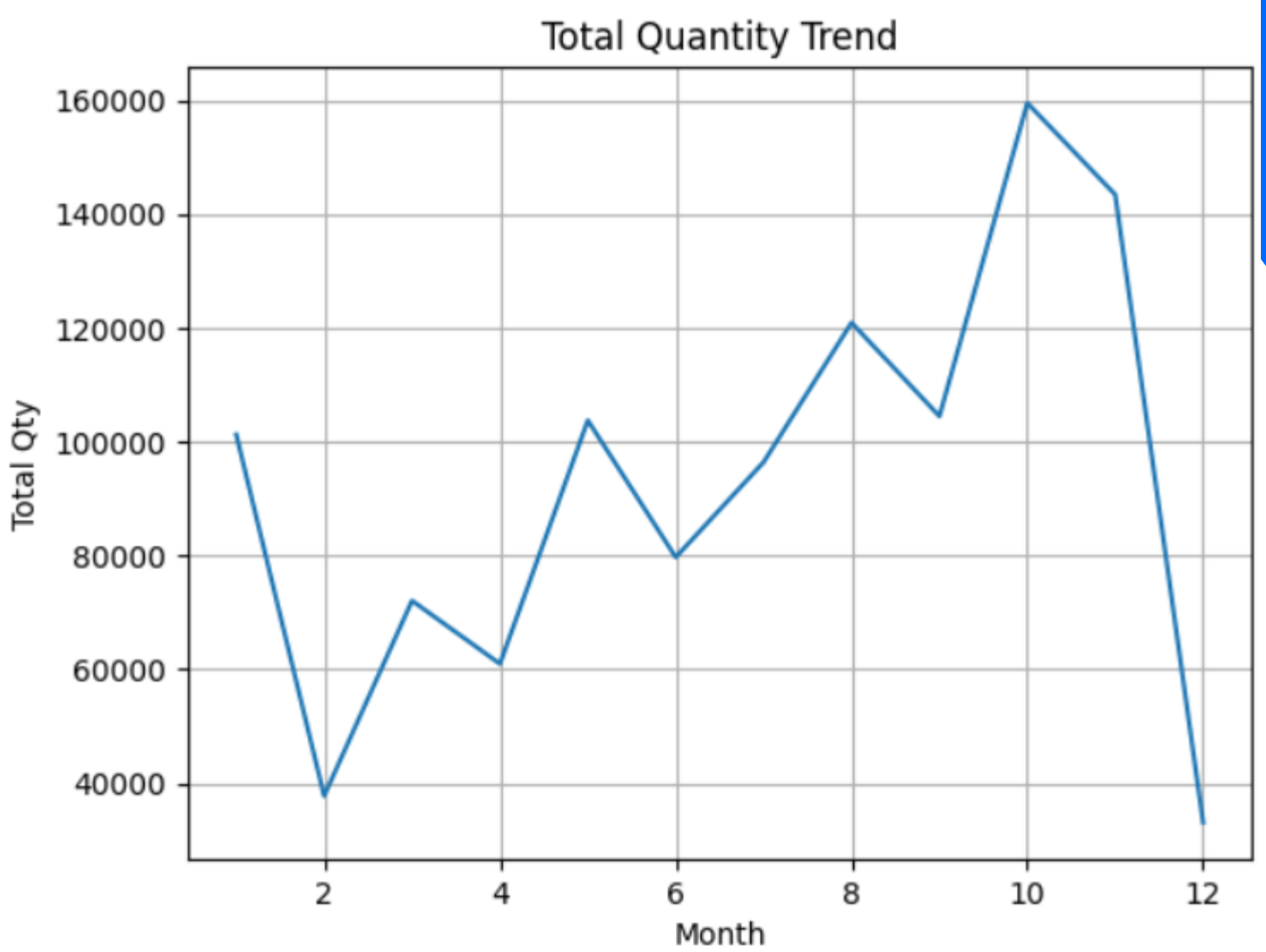
Analisa :
menampilkan dataset negara germany dengan kolom qty,country,month,year file transaction.csv

```
#no.3
TotalQty = result_df.groupby('month')['Qty'].sum()
TotalQty.head()
```

| month | Qty |
|---|---|
| 1 | 101266 |
| 2 | 37800 |
| 3 | 72084 |
| 4 | 60993 |
| 5 | 103749 |

Analisa :
Menampilkan akumulasi Qty pada bulan yang sama

```python
#no.4
import matplotlib.pyplot as plt
plt.plot(TotalQty.index, TotalQty.values)
plt.xlabel('Month')
plt.ylabel('Total Qty')
plt.title('Total Quantity Trend')
plt.grid(True)
plt.show()
```




Analisa : menampilkan visualisasi pergerakan nilai TotalQtydimana sumbu x=month dan sumbu y=total Qty

```python
#no.5
from sklearn.linear_model import LinearRegression
from sklearn.model_selection import train_test_split

X = TotalQty.index.values.reshape(-1, 1)
y = TotalQty.values
model = LinearRegression()
model.fit(X, y)
PredictedQty = model.predict([[1]])
print(f"Predicted total Qty for January 2012: {PredictedQty[0]:.2f}")
```

```
Predicted total Qty for January 2012: 71663.28
```

Analisa : menampilkan prediksikan total Qty dari TotalQty pada bulan Januari 2012 dengan Linear Regression