Ujian Akhir Semester Tahun Akademik 2022/2023

Mata Kuliah : Statistik Komputasi
Nama : Roziq Mahbubi
Kelas : TI-2G/27
NIM : 2141720086

Repository : https://github.com/rzqmhb/UAS_StatKom

1.
   a. Data-data yang bisa digunakan untuk pemodelan regresi adalah :
      - Data dependent : weekly_sales (penjualan mingguan)
      - Data independent :
        1. Holiday_Flag
        2. Temperature
        3. Fuel_Price
        4. CPI
        5. Unemployment
   b.
      Store 4 :

      Weekly Sales:
      count 1.430000e+02
      mean 2.094713e+06
      std 2.662014e+05
      min 1.762539e+06
      25% 1.929611e+06
      50% 2.073951e+06
      75% 2.175039e+06
      max 3.676389e+06

      Holiday Flag:
      count 143.000000
      mean 0.069930
      std 0.255926
      min 0.000000
      25% 0.000000
      50% 0.000000

75% 0.000000
max 1.000000

Temperature:
count 143.000000
mean 62.253357
std 16.180023
min 28.840000
25% 48.470000
50% 64.220000
75% 77.440000
max 86.090000

Fuel Price:
count 143.000000
mean 3.216972
std 0.416967
min 2.540000
25% 2.764500
50% 3.290000
75% 3.586500
max 3.881000

Customer Price Index:
count 143
unique 143
top 1.264.420.645
freq 1

Unemployment:
count 143.000000
mean 5.964692
std 1.421267
min 3.879000
25% 4.607000
50% 5.946000
75% 7.127000
max 8.623000

c.

Fuel Price:

Q1: 2.7645
Q2: 3.29
Q3: 3.5865
IQR: 0.8220000000000001

Customer Price Index:
Q1: 128.13
Q2: 130.244
Q3: 131.043
IQR: 2.913000000000011

Unemployment:
Q1: 4.607
Q2: 5.946
Q3: 7.127
IQR: 2.5199999999999996

d.

Non-Holiday Week:
Variance: 64307184400.449524

Holiday Week:
Variance: 148586249704.7428

e.

Mean untuk Weekly Sales pada toko menunjukkan hasil berbeda.

f.

1f
CPI yang lebih tinggi di setiap toko:
Store ID: 1
CPI: 223.4442513

Store ID: 2
CPI: 223.0783366

Store ID: 3
CPI: 226.9873637

Store ID: 4
CPI: 131.1930968

Store ID: 5
CPI: 224.0378139

Store ID: 6
CPI: 225.0686254

Store ID: 7
CPI: 199.2195317

Store ID: 8
CPI: 227.0369359

Store ID: 9
CPI: 227.2328068

Store ID: 10
CPI: 131.1930968

Store ID: 11
CPI: 226.9873637

Store ID: 12
CPI: 131.1930968

Store ID: 13
CPI: 131.1930968

Store ID: 14
CPI: 192.3308542

Store ID: 15
CPI: 138.9117

Store ID: 16
CPI: 199.2195317

Store ID: 17
CPI: 131.1930968

Store ID: 18
CPI: 138.9117

Store ID: 19

CPI: 138.9117

Store ID: 20
CPI: 216.1515902

Store ID: 21
CPI: 223.0783366

Store ID: 22
CPI: 142.9376167

Store ID: 23
CPI: 138.9117

Store ID: 24
CPI: 138.9117

Store ID: 25
CPI: 216.1515902

Store ID: 26
CPI: 138.9117

Store ID: 27
CPI: 142.9376167

Store ID: 28
CPI: 131.1930968

Store ID: 29
CPI: 138.9117

Store ID: 30
CPI: 223.0783366

Store ID: 31
CPI: 223.0783366

Store ID: 32
CPI: 199.2195317

Store ID: 33
CPI: 131.1930968

Store ID: 34
CPI: 131.1930968

Store ID: 35
CPI: 142.9376167

Store ID: 36
CPI: 222.1136566

Store ID: 37
CPI: 222.1136566

Store ID: 38
CPI: 131.1930968

Store ID: 39
CPI: 222.1136566

Store ID: 40
CPI: 138.9117

Store ID: 41
CPI: 199.2195317

Store ID: 42
CPI: 131.1930968

Store ID: 43
CPI: 214.7415392

Store ID: 44
CPI: 131.1930968

Store ID: 45
CPI: 192.3308542

g.

Rata-rata CPI pada holiday week dan non-holiday week sama.

2.

a.

Uji Normalitas Weekly Sales:
Statistic: 0.44693084693084695
P-value: 0.6900128635984475
Weekly Sales didistribusikan secara normal

Uji Normalitas Fuel Price:
Statistic: 0.5383061383061383
P-value: 0.42655414389291124
Fuel Price didistribusikan secara normal

b.

- Data dependent : weekly_sales (penjualan mingguan)
- Data independent :
    6. Holiday_Flag
    7. Temperature
    8. Fuel_Price
    9. CPI
    10. Unemployment

3.

a.

Nilai korelasi antara variabel independen dan variabel dependen:
Holiday_Flag 0.036891
Temperature -0.063810
Fuel_Price 0.009464
Unemployment -0.106176
Weekly_Sales 1.000000
Name: Weekly_Sales, dtype: float64

b.

Pasangan variabel independen dan dependen dengan korelasi negatif:
Temperature -0.063810
Unemployment -0.106176
Name: Weekly_Sales, dtype: float64

4.

Model Regresi:
y = 1007884.9200801768 + 11635.764282979633 x