**DATA SCINECE IMPLEMENTATION**

SUBMITTED BY

**SHUBHAM KALE**

**2022-2023**

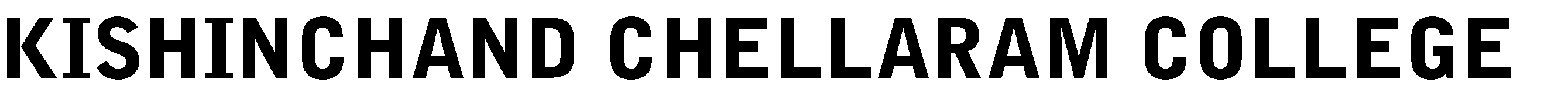
**HSNC UNIVERSITY**

MASTERS OF SCIENCE IN INFORMATION TECHNOLOGY KISHINCHAND CHELLARA COLLEGE

D.W.ROAD, CHURCHGATE, MUMBAI – 400 020.

MS-FIT-210

DATA SCIENCE IMPLEMENTATION



# Churchgate, Mumbai - 400 020.

**DEPARTMENT OF INFORMATION TECHNOLOGY M.Sc. PART- I**

**CERTIFICATE**

# This is to certify that the practical done at **K.C. College** by **Mr. Shubham Kale** (Seat No: **KFMSCIT015**) in partial fulfillment for M.SC. (I.T.) Degree Examination has been found satisfactory. This Practical journal had not been submitted for any other examination and does not form part of any other course undergone by the candidate.

|  |  |  |
| --- | --- | --- |
| **Signature** | **Signature** | **Signature** |
| **Lecturer-in-charge** | **External Examiner** | **Course Coordinator** |
| **Guided by** | **Examined by** | **Certified by** |

**College Stamp**

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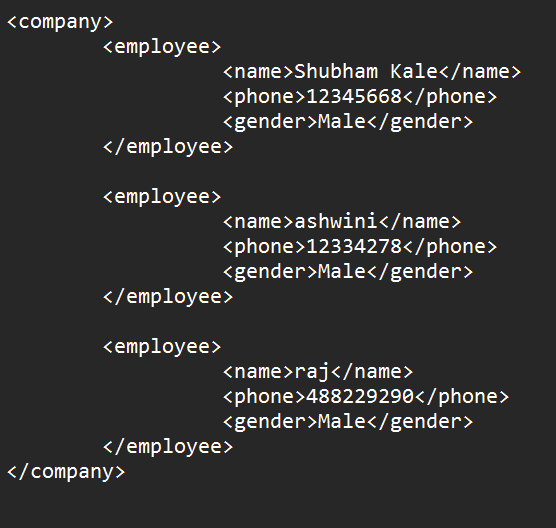
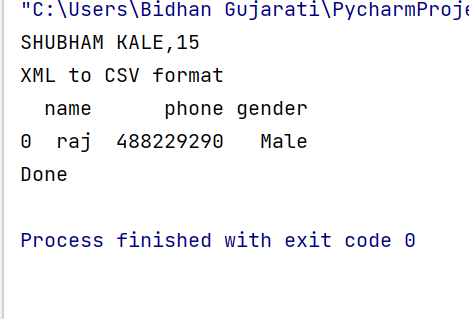
|  |  |  |  |
| --- | --- | --- | --- |
| **SR.**  **NO.** | **PRACTICAL NAME** | **REMARK** | **SIGN.** |
| 01 | Convert from XML to Horus |  |  |
| 02 | Convert from JSON to Horus |  |  |
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| 09 | Data visualization & transform in Power BI |  |  |

**PRACTICAL 01: CONVERT FROM XML TO HORUS**

**Code:**

import pandas as pd  
import xml.etree.ElementTree as ET  
  
print("SHUBHAM KALE,15")  
cols=["name","phone","gender"]  
rows=[]  
  
*#Parse XML file*tree=ET.parse('Company.xml')  
root=tree.getroot()  
  
for elem in root:  
 name = elem.find('name').text  
  
 phone = elem.find('phone').text  
  
 gender = elem.find('gender').text  
  
rows.append({"name":name,"phone":phone,"gender":gender})  
  
df = pd.DataFrame(rows,columns=cols)  
df.to\_csv('employee.csv',index=False)  
  
print("XML to CSV format")  
emp = pd.read\_csv('employee.csv')  
print(emp)  
print('Done')

**Output:**

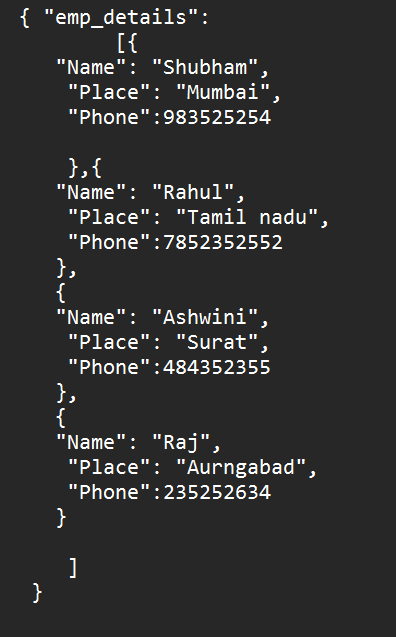
** **

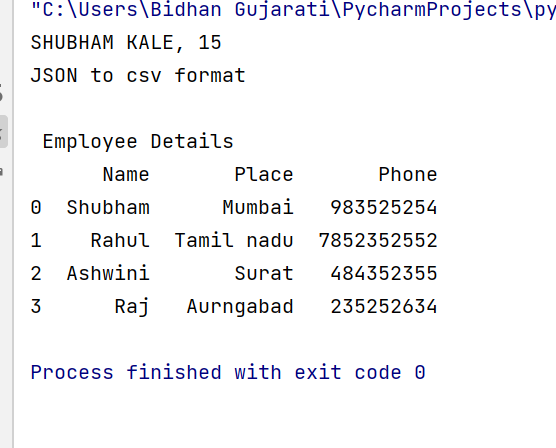
**PRACTICAL 02: CONVERT FROM JSON TO HORUS**

**Code:**

import pandas as pd  
import json  
import csv  
  
print("SHUBHAM KALE, 15")  
  
with open('emp\_details.json') as json\_file:  
 data = json.load(json\_file)  
  
employee\_data = data['emp\_details']  
  
data\_file = open('data\_file.csv', 'w')  
  
csv\_writer = csv.writer(data\_file)  
count = 0  
  
for emp in employee\_data:  
 if count == 0:  
 *# Writing headers of CSV file* header = emp.keys()  
 csv\_writer.writerow(header)  
 count += 1  
  
 *# Writing data of CSV file* csv\_writer.writerow(emp.values())  
  
data\_file.close()  
print("JSON to csv format")  
emp=pd.read\_csv('data\_file.csv')  
print("\n Employee Details")  
print(emp)

**Output:**

****

****

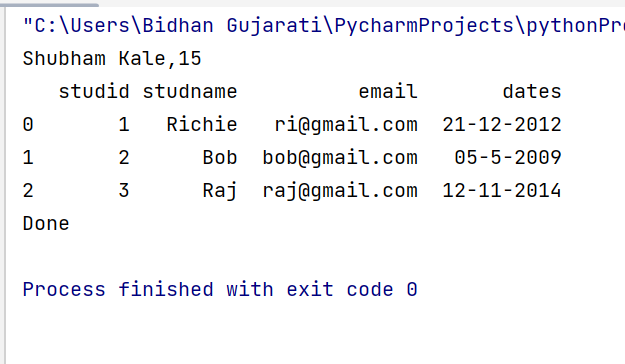
**PRACTICAL 03: CONVERT FROM SQL TO HORUS**

## Code:

## Step :- 1 Convert csv to sql

import pandas as pd  
import sqlite3 as sq  
print('Shubham Kale,15')  
sInputFileName = 'studs.csv'  
InputData = pd.read\_csv(sInputFileName)  
print(InputData)  
ProcessData = InputData  
OutputData = ProcessData  
SOutputFileName = 'utility.db'  
sOutputTable = 'Employee'  
conn = sq.connect(SOutputFileName)  
OutputData.to\_sql(sOutputTable, conn, if\_exists='replace')  
print('Done')

## Output:

****

## Step :- 2 Convert sql to HORUS

import pandas as pd  
import sqlite3 as sq  
print("SHUBHAM KALE,15")  
sInputFileName='utility.db'  
sInputTable='Employee'  
*#creating connection*conn=sq.connect(sInputFileName)  
sSql='select \* from ' + sInputTable + ';'  
InputData=pd.read\_sql\_query(sSql,conn)  
print(InputData)  
ProcessData=InputData  
*#Remove the Column ProcessData.drop('dates',axis=1,inplace=True)*print("Process data value=============================")  
print(InputData)  
*#Rename the Column*ProcessData.rename(columns={'studname':'Name'},inplace=True)  
ProcessData.rename(columns={'email':'EmailId'},inplace=True)  
print(ProcessData)  
OutputData=ProcessData  
OutputData.to\_csv('employee1.csv')  
print('Done')

## Output:

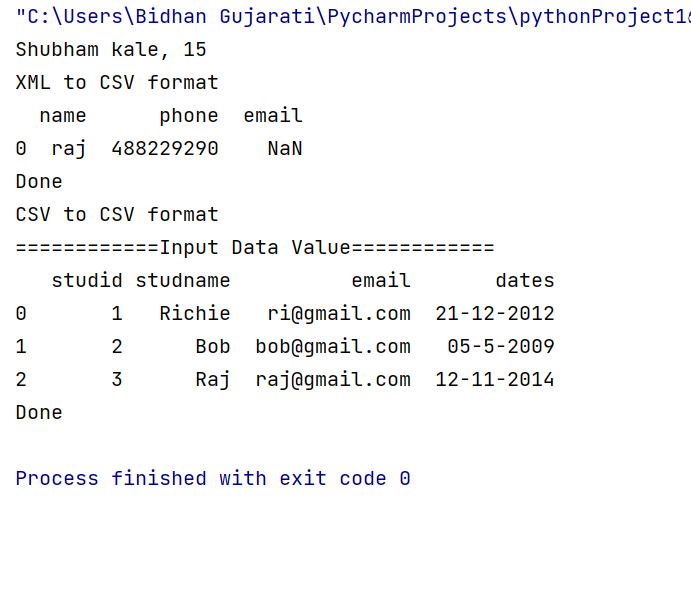
## 

**PRACTICAL 04: CONVERT ALL FORMATS TO HORUS**

**Code:**

import pandas as pd  
import xml.etree.ElementTree as ET  
print('Shubham kale, 15')  
cols = ["name", "phone", "email"]  
rows = []  
tree = ET.parse('Company.xml')  
root = tree.getroot()  
for elem in root:  
 name = elem.find('name').text  
 phone = elem.find('phone').text  
rows.append({"name": name, "phone": phone})  
df = pd.DataFrame(rows, columns=cols)  
df.to\_csv('employee.csv', index= False)  
df.to\_csv('AllinOne.csv', mode='a', index=False, header=True)  
print("XML to CSV format")  
emp = pd.read\_csv('employee.csv')  
print(emp)  
print('Done')  
sInputFileName = 'studs.csv'  
InputData = pd.read\_csv(sInputFileName)  
print("CSV to CSV format")  
print("============Input Data Value============")  
print(InputData)  
ProcessData = InputData  
OutputData = ProcessData  
OutputData.to\_csv('AllinOne.csv', mode='a', index=False, header=True)  
print('Done')

**Output:**



**PRACTICAL 05: CONVERT FROM IMAGE TO HORUS**

**Code**

#Convert Image to CSV File

from PIL import Image

import numpy as np

import sys

import os

import csv

print("Shubham KALE,15")

#Path to image

image\_path='C:/Users/HP/Downloads/img (2).jpg'

#image\_path='./temp/429.jpg'

output\_file='output\_image.csv'

print('processing image from'+image\_path)

img\_file=Image.open(image\_path)

#get original image parameter

width,height=img\_file.size

format=img\_file.format

mode=img\_file.mode

#Make image Grayscale

img\_grey=img\_file.convert('L')

#Save GreyScale value

value=np.asarray(img\_grey.getdata(),dtype=int).reshape((img\_grey.size[1],img\_grey.size[0]))

value=value.flatten()

print(value)

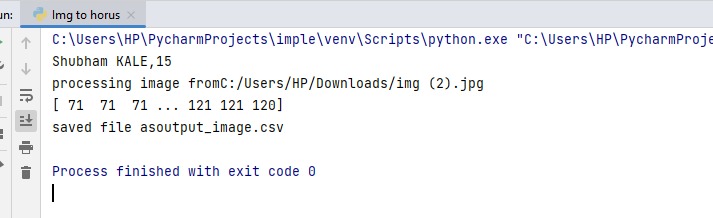
with open(output\_file,'a') as f:

writer = csv.writer(f)

writer.writerow(value)

print('saved file as' + output\_file)

**Output:**



**PRACTICAL 6: CONVERT FROM VIDEO TO HORUS**

Code :

import cv2

import os

print("SHUBHAM KALE,15")

#Read the video from Specified path

cam=cv2.VideoCapture('video1.mp4')

try:

if not os.path.exists('temp'):

os.mkdir('temp')

except OSError:

print("Error: Creating Directory")

#frame

currentframe=0

while(True):

ret,frame=cam.read()

if ret:

name='./temp/'+str(currentframe)+'.jpg'

print('Creating Frame')

cv2.imwrite(name,frame)

currentframe+=1

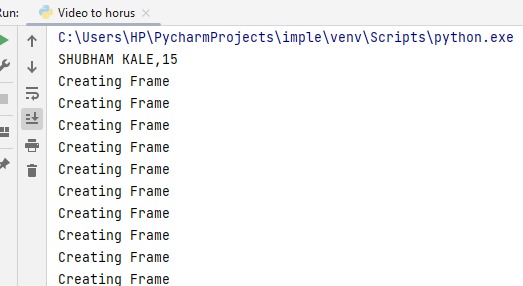
else:

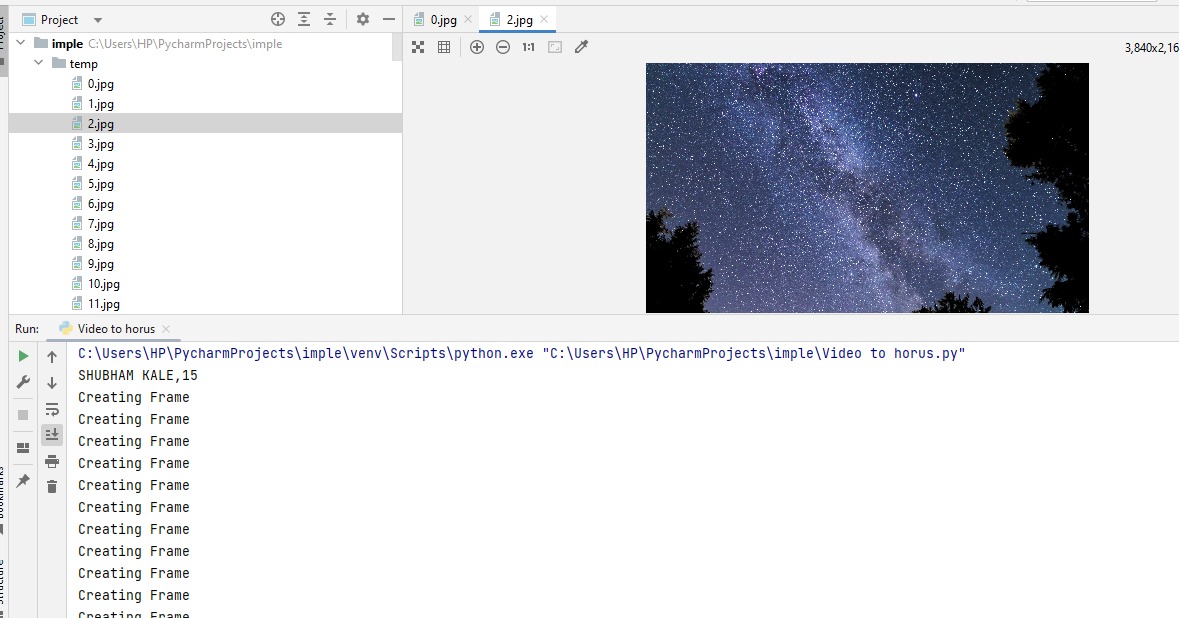
break

cam.release()

cv2.destroyAllWindows()

Output:





**PRACTICAL 07: CONVERT FROM AUDIO TO HORUS**

**Code:**

from scipy.io import wavfile

import pandas as pd

import matplotlib.pyplot as plt

import numpy as np

def show\_info(aname, a,r):

print ('----------------')

print ("Audio:", aname)

print ('----------------')

print ("Rate:", r)

print ('----------------')

print ("shape:", a.shape)

print ("dtype:", a.dtype)

print ("min, max:", a.min(), a.max())

print ('----------------')

plot\_info(aname, a,r)

def plot\_info(aname, a,r):

sTitle= 'Signal Wave - '+ aname + ' at ' + str(r) + 'hz'

plt.title(sTitle)

sLegend=[]

for c in range(a.shape[1]):

sLabel = 'Ch' + str(c+1)

sLegend=sLegend+[str(c+1)]

plt.plot(a[:,c], label=sLabel)

plt.legend(sLegend)

plt.show()

sInputFileName='abcd1.wav'

print('=====================================================')

print('Processing : ', sInputFileName)

print('=====================================================')

InputRate, InputData = wavfile.read(sInputFileName)

show\_info("2 channel", InputData,InputRate)

ProcessData=pd.DataFrame(InputData)

sColumns= ['Ch1','Ch2']

ProcessData.columns=sColumns

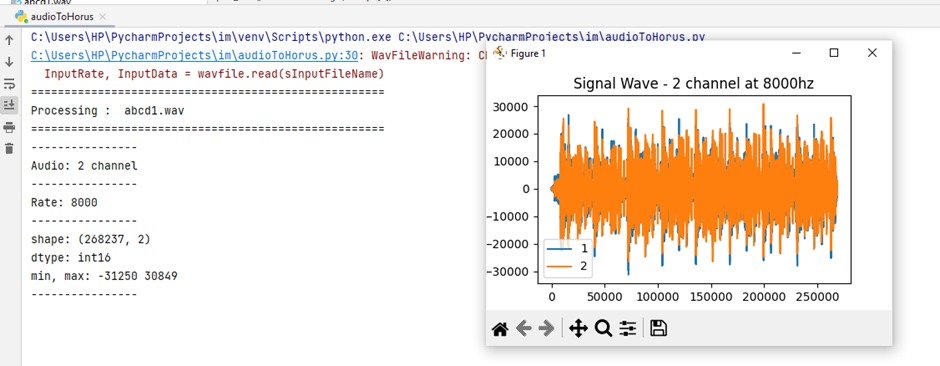
OutputData=ProcessData

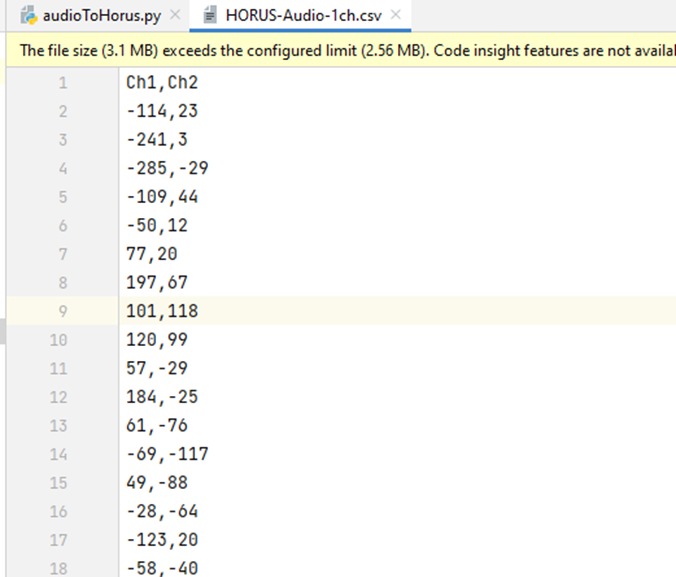
sOutputFileName='HORUS-Audio-1ch.csv'

OutputData.to\_csv(sOutputFileName, index = False)

print('=======================Excel file generated========================================')

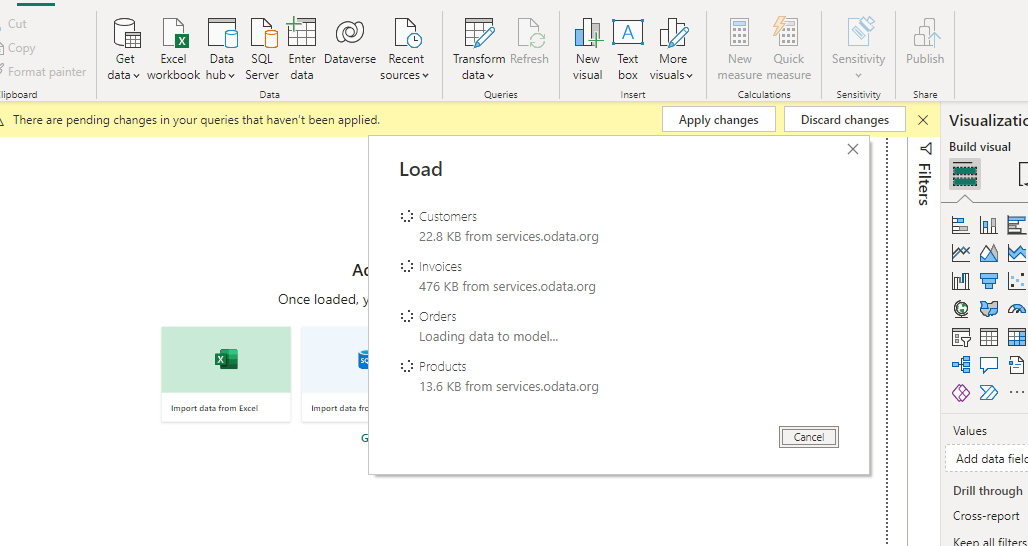
Output:



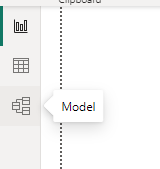


**PRACTICAL 08: GENERATING REPORTS IN POWER BI**

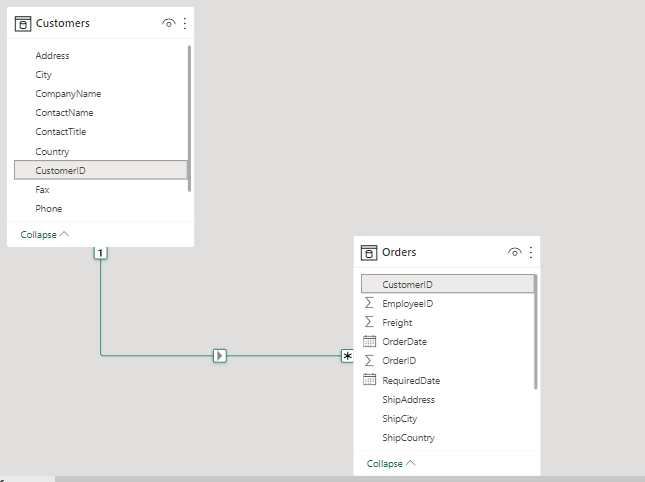
**Steps:**



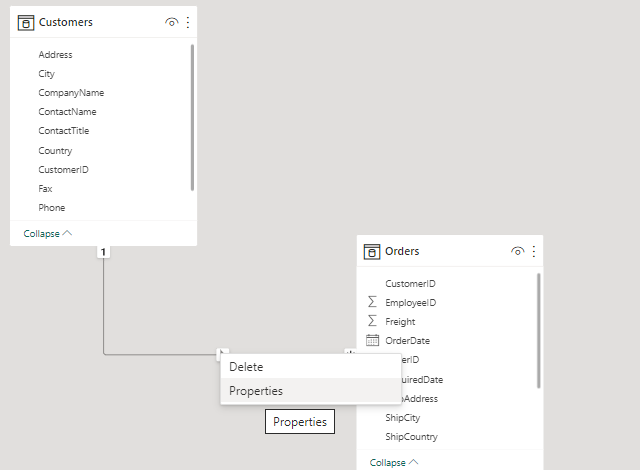
Click On Model view

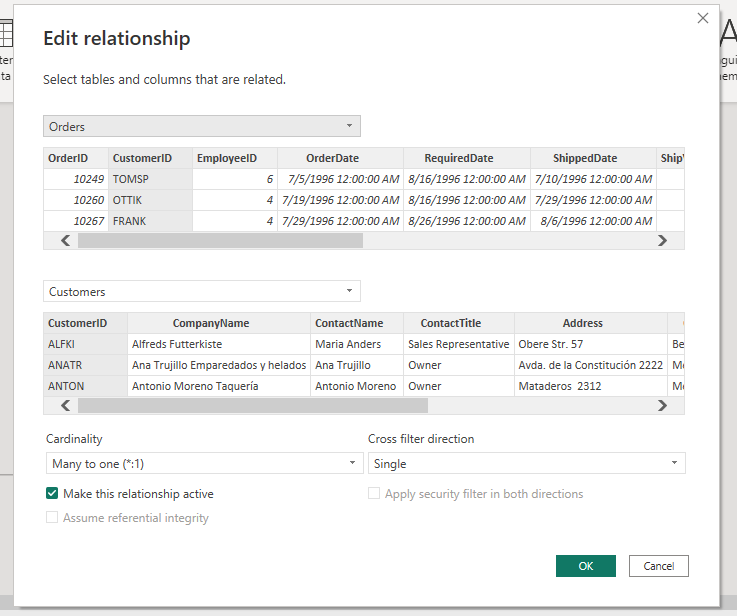


Click on arrow like button

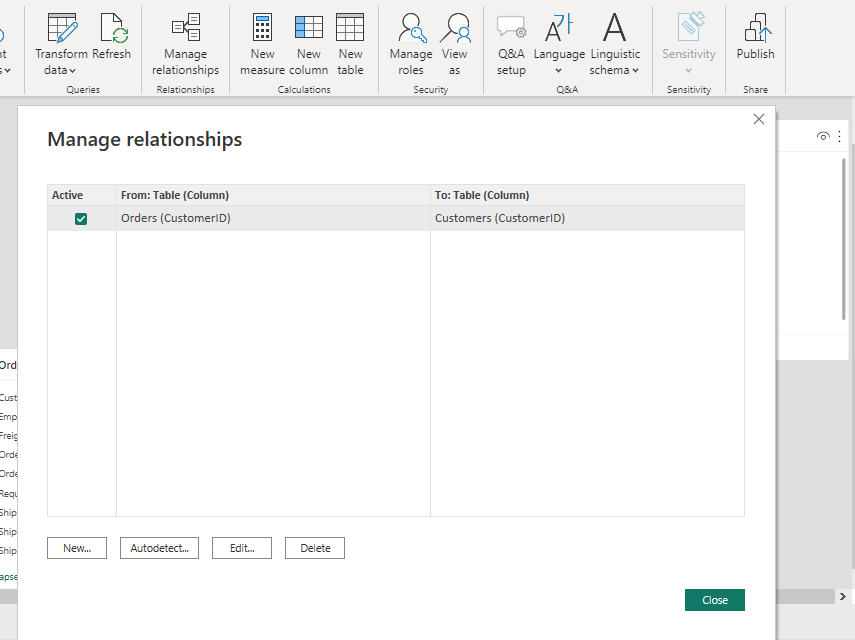


Right click and Select Properties



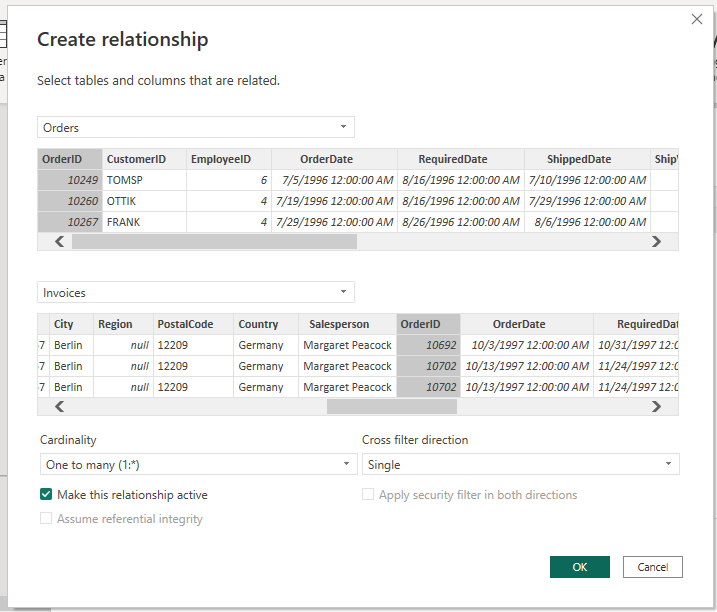


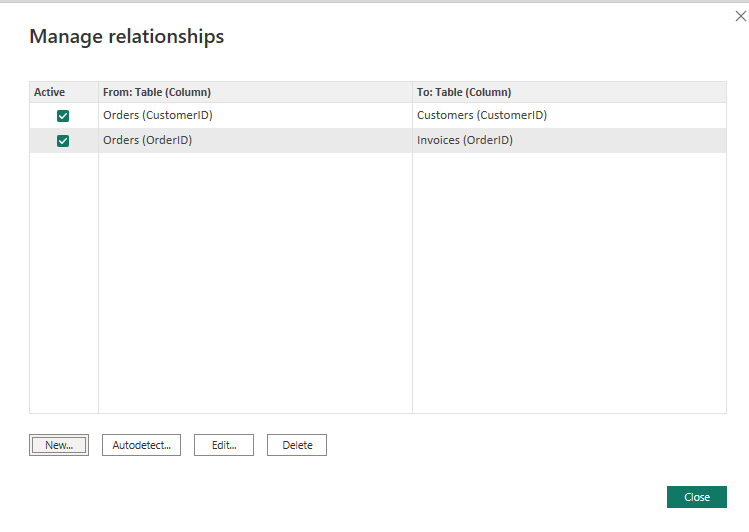
Click Okay

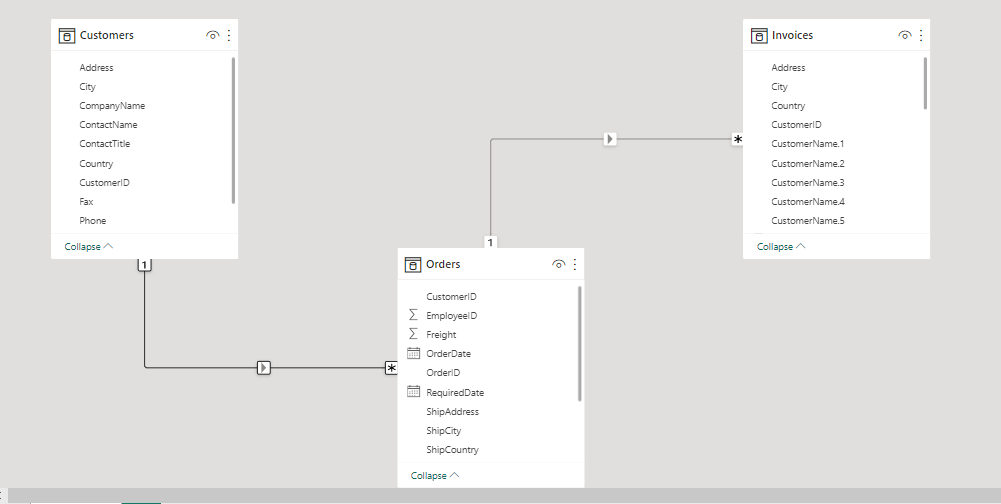


Select MAnage Relationship---> click on New

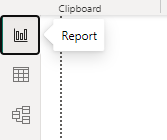
From dropdrow select First order and then invoice



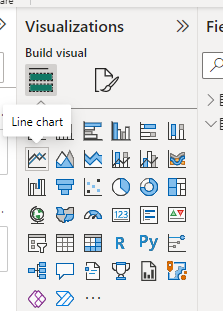
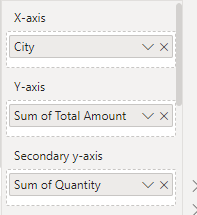
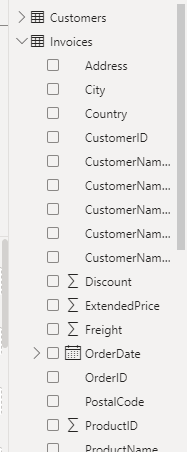




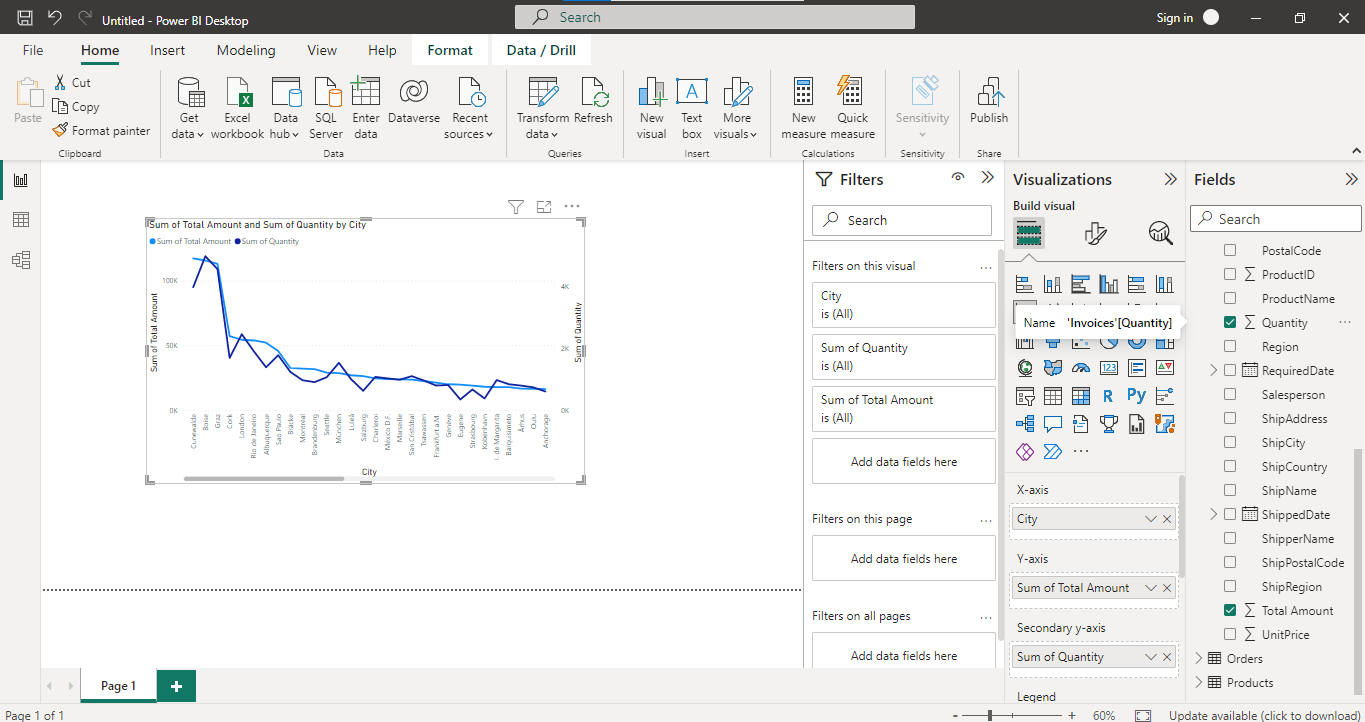
Go in Report View

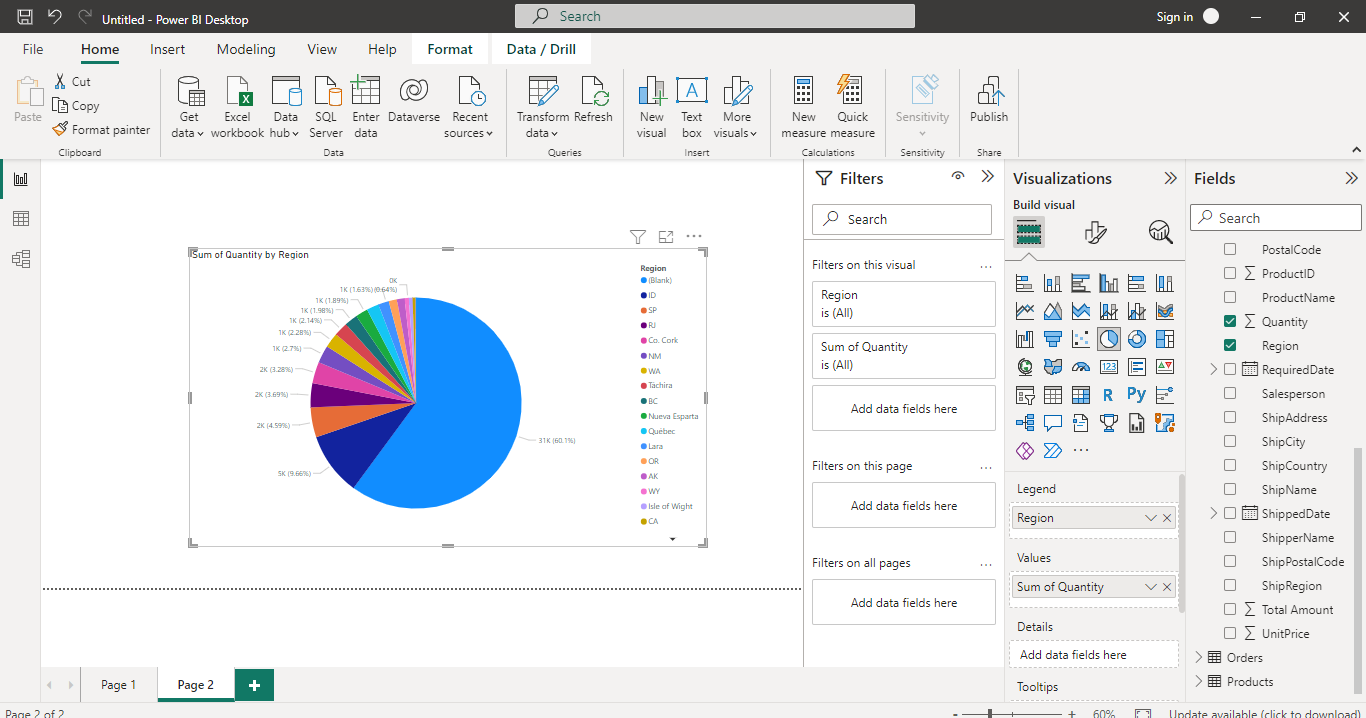


In visualization select linechart

Use Invoice Table

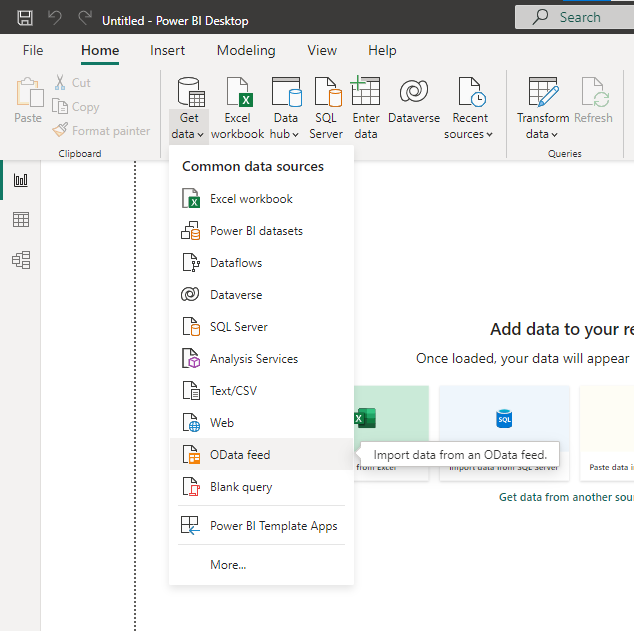




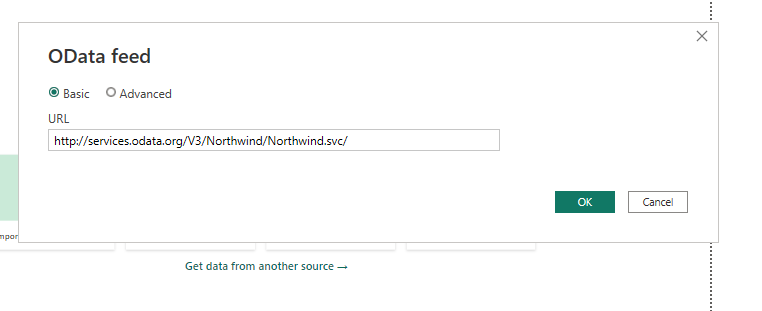
**PRACTICAL 09: DATA VISUALIZATION & TRANSFORM IN POWER BI**

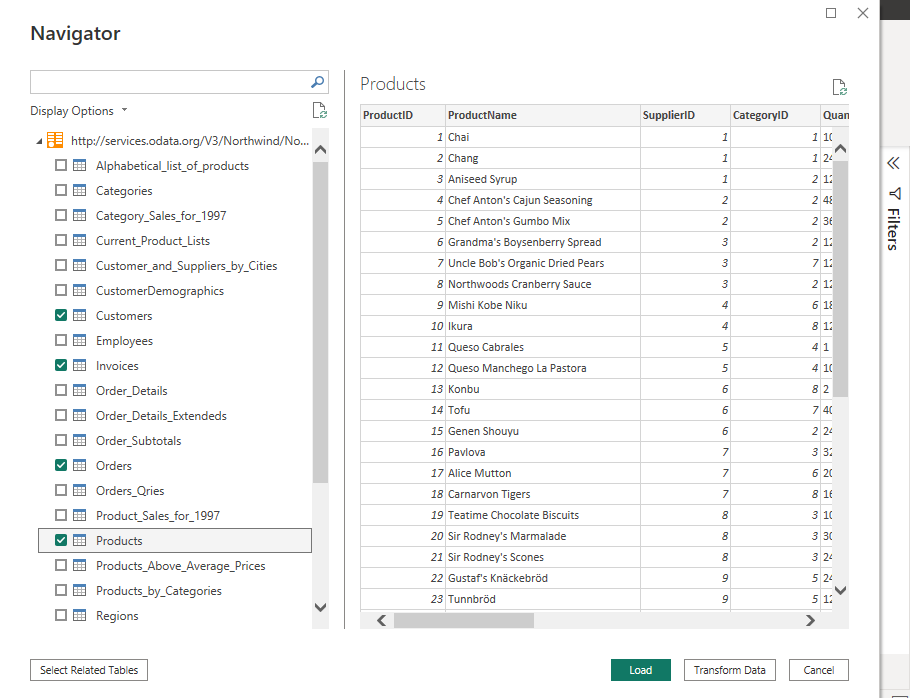
**Steps:**

Select ->Getdata>OData feed



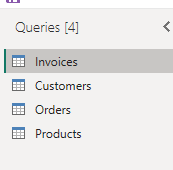
<http://services.odata.org/V3/Northwind/Northwind.svc/>



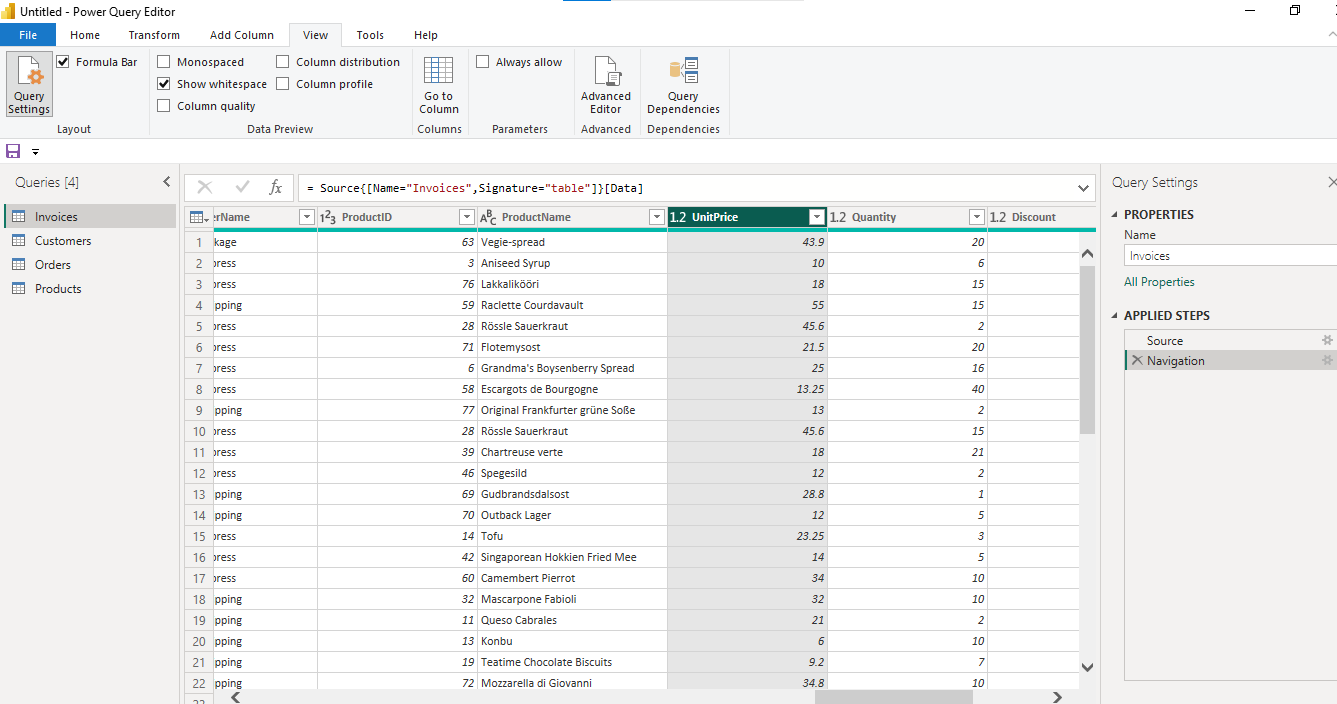


Select Transfrom Data

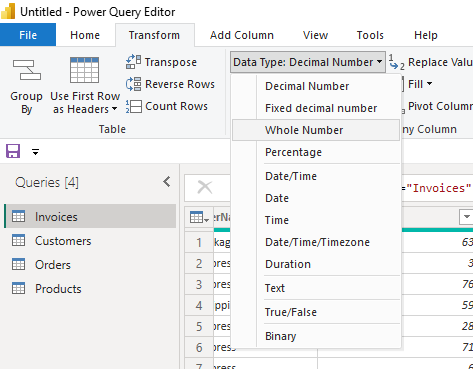
Select Invoices

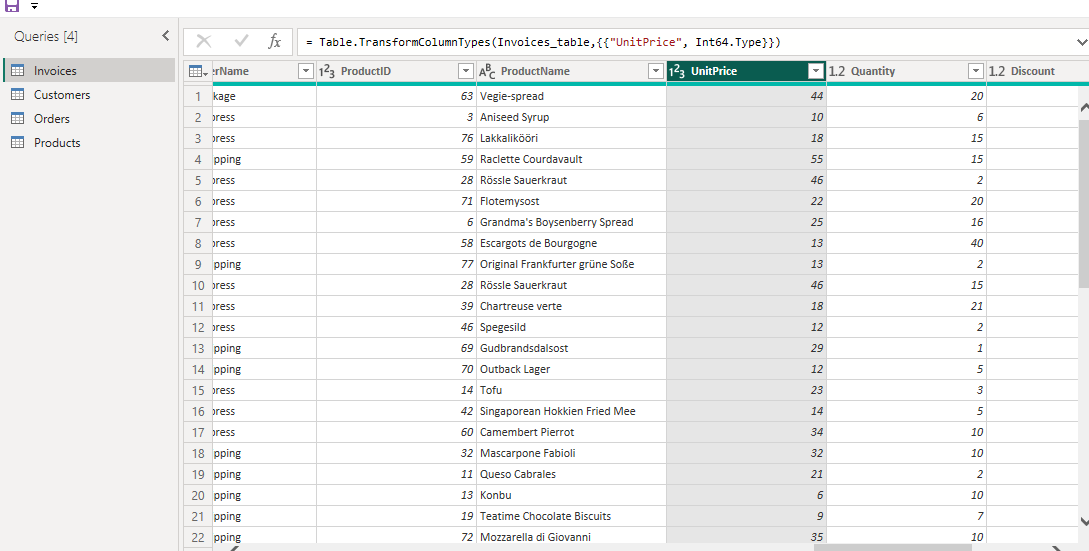


Select Unit Price

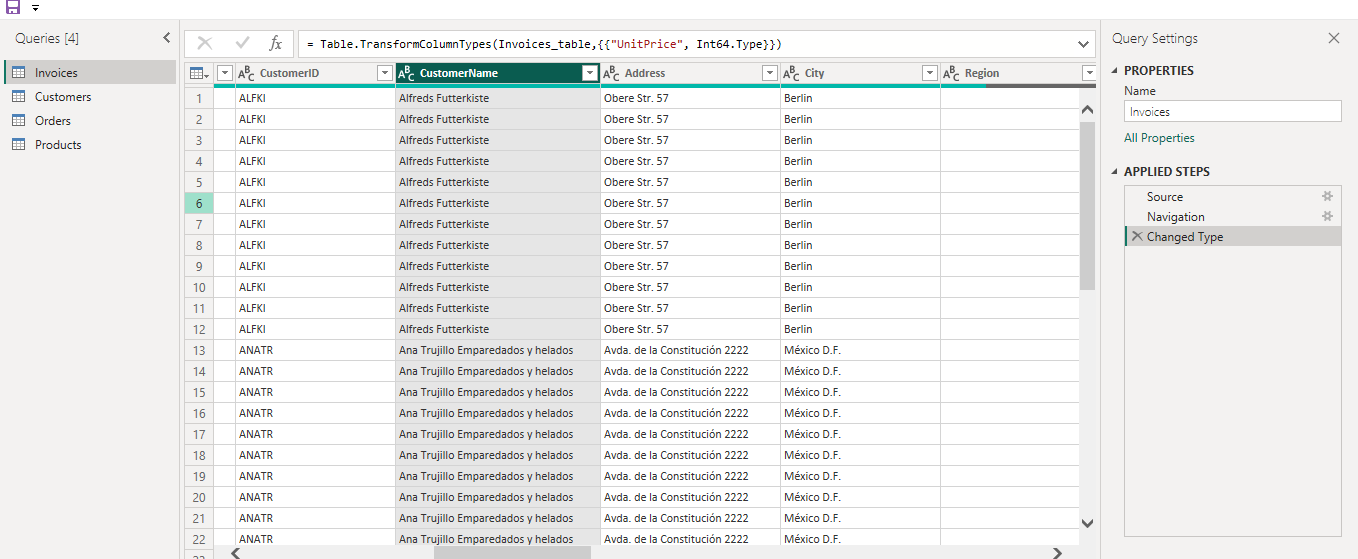


Select Whole Number

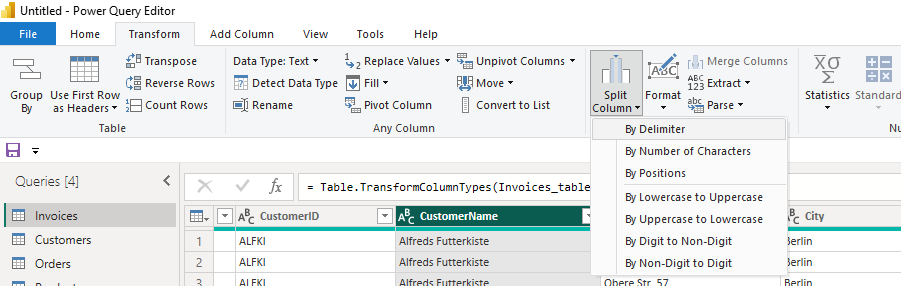


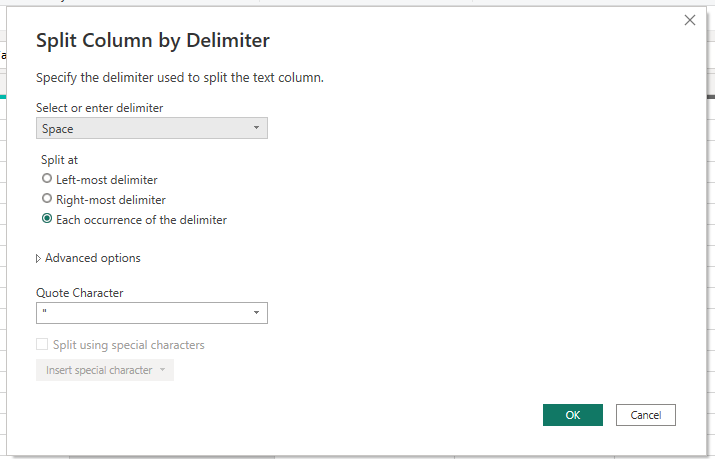


Now Select Cutomer Name

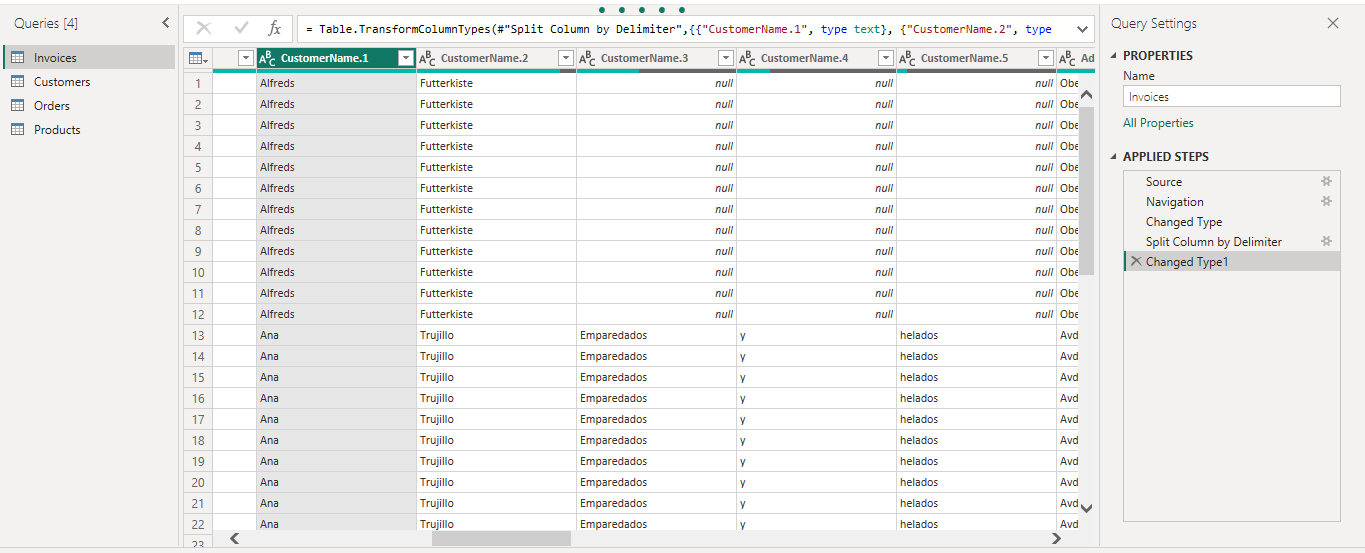


Select Delimeter

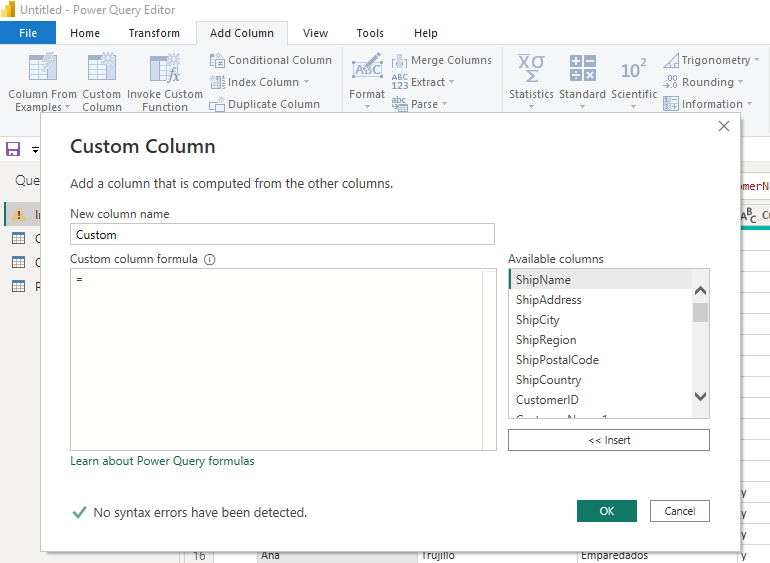


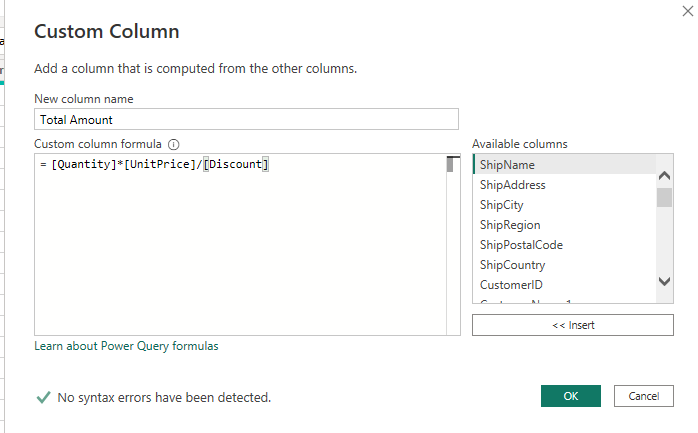


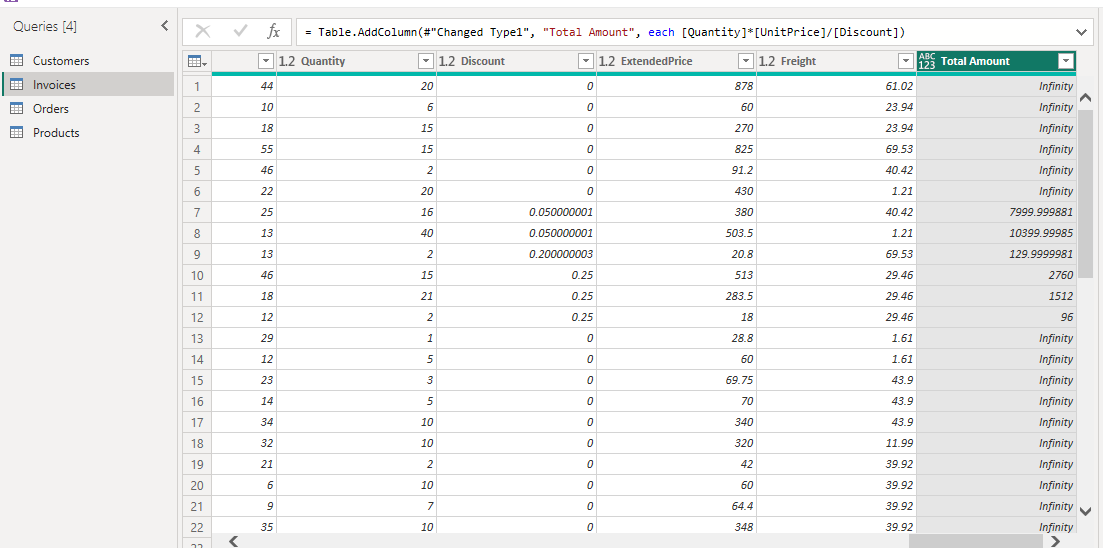
Click Okay :)

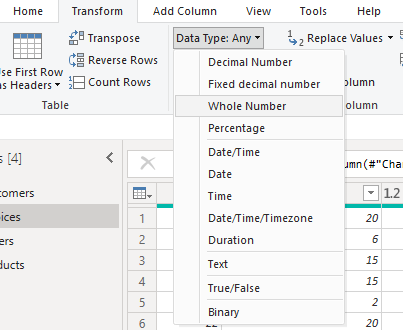


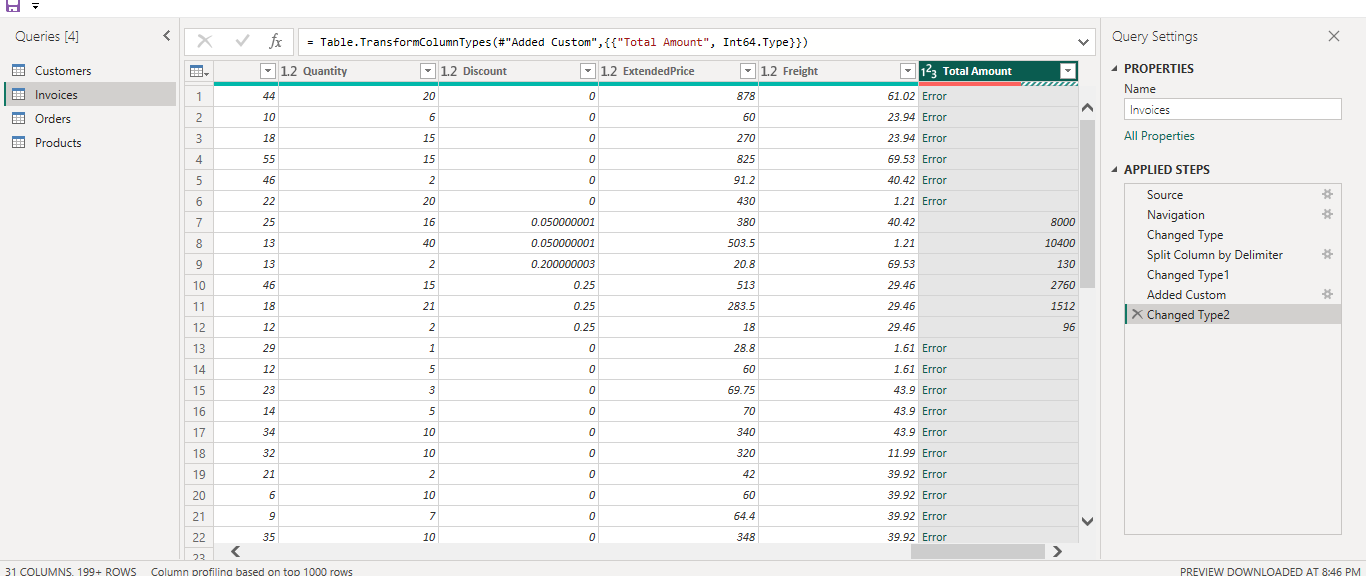
Go in add column>custom column



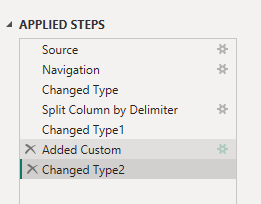


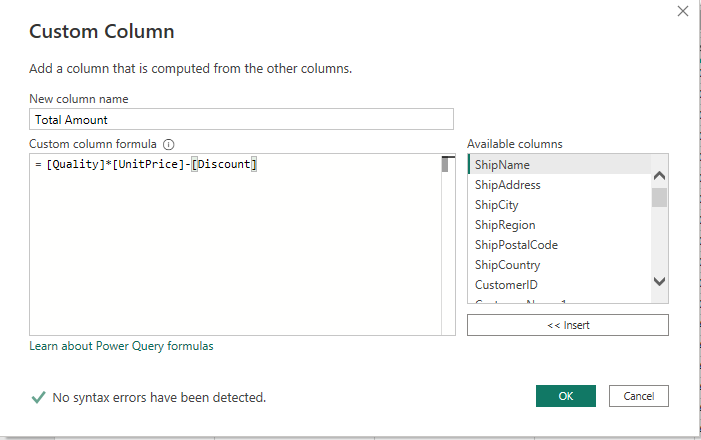


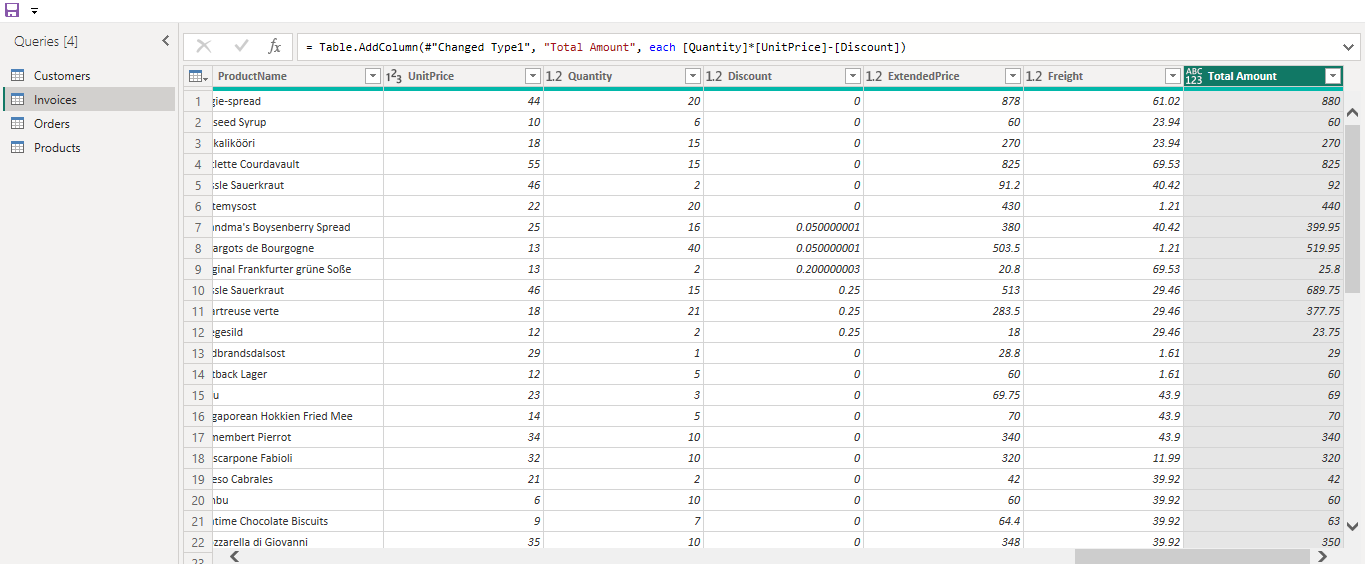




Click on Added Cutom sitting icon







Go in home Tab> Close Apply

