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import pandas as pd
df= pd.read_csv('/Users/ishayadav/PycharmProjects/PythonProject/dataset2.csv')

#Handle duplicate rows (keep first valid entry)
df_unique = df.drop_duplicates(keep='first')
#Fix Product typos (map variations to canonical names: ProdA/Product A →
"Product A")
product_standardisation = {
    'Proda': 'Product A',
    'Prod B': 'Product B',
    'Item C': 'Product C',
}
df['Product'] = df['Product'].replace(product_standardisation)
#Replace negative Quantity with 1
df.loc[df['Quantity'] < 0, 'Quantity'] = 1

#Drop rows with negative price
df = df.loc[df['Price'] >= 0]

#Fix Category inconsistencies (all electronics-related typos → "Electronics")

#Impute missing Regions using CustomerID's most common region
region_map = df.groupby('CustomerID')['Region'].agg(lambda x: x.mode()[0] if
not x.mode().empty else 'Unknown')

df['Region'] = df['Region'].fillna(df['CustomerID'].map(region_map))

print(df)

#Create `IsPromo` flag from PromoCode
df['IsPromo'] = df['PromoCode'].notna().astype(int)

print(df)

```