**PROGRAM :**

from openpyxl import load\_workbook

**# File name of the dataset**

file\_name = "icecreamparlourdataset.xlsx"

def get\_month(date\_obj):

    return date\_obj.strftime('%Y-%m-%d').split("-")[1]  # Extracts the month (e.g., "2023-08-15" -> "08")

month\_sales = {}

month\_items = {}

month\_revenue = {}

total\_sales = 0

wb = load\_workbook(file\_name)

sheet = wb.active

for row in sheet.iter\_rows(min\_row=2, values\_only=True):

    date, sku, unit\_price, quantity, total\_price = row

    unit\_price = float(unit\_price)

    quantity = int(quantity)

    total\_price = float(total\_price)

    total\_sales += total\_price

    month = get\_month(date)

    if month not in month\_sales:

        month\_sales[month] = 0

        month\_items[month] = {}

        month\_revenue[month] = {}

    month\_sales[month] += total\_price

    if sku not in month\_items[month]:

        month\_items[month][sku] = 0

        month\_revenue[month][sku] = 0

    month\_items[month][sku] += quantity

    month\_revenue[month][sku] += total\_price

**# Total sales of the store.**

print("Total Sales of the Store: {:.2f}".format(total\_sales))

**# Month wise sales totals.**

print("\nMonth-wise Sales Totals:")

for month, sales in month\_sales.items():

    print(f"Month {month}: {sales:.2f}")

**#Most popular item (most quantity sold) in each month.**

print("\nMost Popular Item (Quantity Sold) Each Month:")

for month, items in month\_items.items():

    most\_popular = max(items.items(), key=lambda x: x[1])

    print(f"Month {month}: {most\_popular[0]} (Quantity: {most\_popular[1]})")

**#Items generating most revenue in each month.**

print("\nItems Generating Most Revenue Each Month:")

for month, revenues in month\_revenue.items():

    most\_revenue = max(revenues.items(), key=lambda x: x[1])

    print(f"Month {month}: {most\_revenue[0]} (Revenue: {most\_revenue[1]:.2f})")

**#For the most popular item, find the min, max and average number of orders each month.**

print("\nMin, Max, and Average Orders for Most Popular Item Each Month:")

for month, items in month\_items.items():

    most\_popular = max(items.items(), key=lambda x: x[1])

    sku = most\_popular[0]

    orders = [quantity for item, quantity in items.items() if item == sku]

    min\_orders = min(orders)

    max\_orders = max(orders)

    avg\_orders = sum(orders) / len(orders)

    print(f"Month {month}: {sku} -> Min: {min\_orders}, Max: {max\_orders}, Avg: {avg\_orders:.2f}")