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Sub OptimizePrices()
    Dim dataWs As Worksheet
    Dim calcWs As Worksheet
    Dim lastRow As Long
    Dim i As Long

    Set dataWs = ThisWorkbook.Sheets("Data")
    Set calcWs = ThisWorkbook.Sheets("Calculations")

    lastRow = dataWs.Cells(dataWs.Rows.Count, "A").End(xlUp).Row

    ' Clear previous calculations
    calcWs.Cells.Clear

    ' Copy headers
    dataWs.Rows(1).Copy Destination:=calcWs.Rows(1)
    calcWs.Cells(1, 8).Value = "New Price"
    calcWs.Cells(1, 9).Value = "Price Change"
    calcWs.Cells(1, 10).Value = "Applied Rules"

    ' Apply rules to each product
    For i = 2 To lastRow
        Dim currentPrice As Double
        Dim newPrice As Double
        Dim unitsSold As Long
        Dim competitorPrice As Double
        Dim appliedRules As String

        currentPrice = dataWs.Cells(i, "E").Value
        unitsSold = dataWs.Cells(i, "D").Value
        competitorPrice = dataWs.Cells(i, "F").Value

        newPrice = ApplyPricingRules(currentPrice, unitsSold,
competitorPrice, appliedRules)

        ' Copy row data and add new price
        dataWs.Rows(i).Copy Destination:=calcWs.Rows(i)
        calcWs.Cells(i, 8).Value = newPrice
        calcWs.Cells(i, 9).Value = (newPrice - currentPrice) / currentPrice
        calcWs.Cells(i, 10).Value = appliedRules
    Next i

    ' Format the new columns
    With calcWs.Columns(8)
        .NumberFormat = "$#,##0.00"
        .AutoFit
    End With
    With calcWs.Columns(9)
        .NumberFormat = "0.00%"
        .AutoFit
    End With
    calcWs.Columns(10).AutoFit
End Sub

```

```
Function ApplyPricingRules(currentPrice As Double, unitsSold As Long,
competitorPrice As Double, ByRef appliedRules As String) As Double
    Dim newPrice As Double
    Dim profitMargin As Double

    newPrice = currentPrice
    appliedRules = ""

    ' Assume cost is 70% of price for profit margin calculation
    profitMargin = (currentPrice - (currentPrice * 0.7)) / currentPrice

    ' Rule 1: If demand is high
    If unitsSold > 95 Then ' Assuming 100 units as high demand threshold
        newPrice = newPrice * 1.05 ' Increase price by 5%
        appliedRules = appliedRules & "High demand (+5%); "
    End If

    ' Rule 2: If competitor's price is lower
    If competitorPrice < currentPrice Then
        newPrice = newPrice * 0.97 ' Decrease price by 3%
        appliedRules = appliedRules & "Lower competitor price (-3%); "
    End If

    ' Rule 3: If demand is low
    If unitsSold < 20 Then ' Assuming 50 units as low demand threshold
        newPrice = newPrice * 0.93 ' Decrease price by 7%
        appliedRules = appliedRules & "Low demand (-7%); "
    End If

    ' Rule 4: If profit margin is below 20%
    If profitMargin < 0.2 Then
        newPrice = newPrice * 1.02 ' Increase price by 2%
        appliedRules = appliedRules & "Low profit margin (+2%); "
    End If

    If appliedRules = "" Then
        appliedRules = "No rules applied"
    End If

    ApplyPricingRules = newPrice
End Function
```