

Appendix E

Source Code of Computer Program

```
Private Sub cmdCancle_Click()
    End
End Sub

Private Sub cmdContinue_Click()
    If CheckInput(txtTilt.Text) = False Then
        Exit Sub
    End If
    If CheckInput(txtLat.Text) = False Then
        Exit Sub
    End If
    If CheckInput(txtB.Text) = False Then
        Exit Sub
    End If
    If CheckInput(txtL.Text) = False Then
        Exit Sub
    End If
    If CheckInput(txtDepth.Text) = False Then
        Exit Sub
    End If
    If CheckInput(txtThick.Text) = False Then
        Exit Sub
    End If
    If CheckInput(txtkwall.Text) = False Then
        Exit Sub
    End If
    If CheckInput(txtkpart.Text) = False Then
        Exit Sub
    End If
    If CheckInput(txtN.Text) = False Then
        Exit Sub
    End If
    If CheckInput(txtTransmitt.Text) = False Then
        Exit Sub
    End If
    If CheckInput(txtEmittG.Text) = False Then
        Exit Sub
    End If
    If CheckInput(txtEmittP.Text) = False Then
        Exit Sub
    End If
    If CheckInput(txtAbsorp.Text) = False Then
        Exit Sub
    End If
    If CheckInput(txtMass.Text) = False Then
        Exit Sub
    End If
    If CheckInput(txtTfi.Text) = False Then
        Exit Sub
    End If
    If CheckInput(txtTsi.Text) = False Then
        Exit Sub
    End If
    If CheckInput(txtTime.Text) = False Then
        Exit Sub
    End If
    frmCharacteristic.Hide
    frmSelectCases.Show
End Sub

Function CheckInput(strInput As String) As Boolean
    If IsEmpty(strInput) = True Then
        MsgBox "Please fill a numerical data in all blanks", vbOKOnly, "Missing"
        CheckInput = False
        Exit Function
    End If
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If IsNumeric(strInput) = False Then
    MsgBox "Please fill a numerical data in all blanks", vbOKOnly, "Missing"
    CheckInput = False
    Exit Function
End If
CheckInput = True
End Function

Private Sub cmdBack_Click()
    frmSelectCases.Hide
    frmCharacteristic.Show
End Sub

Private Sub cmdContinue_Click()
    If optTransient.Value = True And optFlow.Value = True Then
        frmSelectCases.Hide
        frmIndividualTime.Show
    ElseIf optTransient.Value = True And optNoFlow.Value = True Then
        frmSelectCases.Hide
        frmIndividualTime.Show
    ElseIf optTransient.Value = True And optCheck.Value = True Then
        frmSelectCases.Hide
        frmIndividualTime.Show
    ElseIf optInputFile.Value = True And optFlow.Value = True Then
        frmSelectCases.Hide
        frmFileAverage.Show
    ElseIf optInputFile.Value = True And optNoFlow.Value = True Then
        frmSelectCases.Hide
        frmFileAverage.Show
    ElseIf optInputFile.Value = True And optCheck.Value = True Then
        frmSelectCases.Hide
        frmFileAverage.Show
    ElseIf optNode.Value = True And optFlow.Value = True Then
        MsgBox ("This case is underconstruction, please select another case"), vbOKOnly, "Underconstruction!"
        Exit Sub
        frmSelectCases.Hide
        frmFileNodes.Show
    ElseIf optNode.Value = True And optNoFlow.Value = True Then
        MsgBox ("This case is underconstruction, please select another case"), vbOKOnly, "Underconstruction!"
        Exit Sub
        frmSelectCases.Hide
        frmFileNodes.Show
    ElseIf optNode.Value = True And optCheck.Value = True Then
        MsgBox ("This case is underconstruction, please select another case"), vbOKOnly, "Underconstruction!"
        Exit Sub
        frmSelectCases.Hide
        frmFileNodes.Show
    Else
        MsgBox "Select any input type and then select an operation case before continue", vbOKOnly, "Try again"
    End If
End Sub

Private Sub cmdInput_Click()
    fOutput = cdIOutputFile.FileName
    If fOutput = "" Then
        MsgBox "Please define the name for the output file before select the input file", vbOKOnly, "Missing"
    Else
        frmSelectCases.Hide
        cdIInputFile.ShowOpen
        fInput = cdIInputFile.FileName
    End If
    If fInput = "" Then
        Exit Sub
    End If
End Sub

Private Sub cmdOutput_Click()
    cdIOutputFile.ShowOpen
    fOutput = cdIOutputFile.FileName
    If fOutput = "" Then
        Exit Sub
    End If
End Sub

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Private Sub cmdBack_Click()
    frmFileNodes.Hide
    frmSelectCases.Show
End Sub
Private Sub cmdExit_Click()
    Close #filenum
    End
End Sub

Private Sub cmdStart_Click()
    fOutput = cd\OutputFile.FileName
    fInput = cd\InputFile.FileName
    If fOutput = "" Or fInput = "" Then
        MsgBox "Please define the output file and then select the input file before start simulation", vbOKOnly, "Try again"
    Else
        Open fOutput For Output As 3
        Print #3, "hf(W/m2-K)", "Th_Head", "Flow(kg/s)", "Ut(W/m2-K)", "Tfb(C)", "Tfm(C)", "Tf(C)", "Tsb(C)", "Tsm(C)", "Tst(C)",
        "Tfplus(C)", "Tsplus(C)", "Qu(kJ)", "Eff"
        Open "C:\My Documents\Simulation\output.txt" For Output As 4
        Dim dN As Double
        Dim dTa As Double
        Dim dhv As Double
        Dim dEmittG As Double
        Dim dEmittP As Double
        Dim dTmp As Double
        Dim dSolar As Double
        Dim dWind As Double
        Dim dTime As Double
        Dim dFactor As Double
        Dim de As Double
        Dim df As Double
        Dim dC As Double
        Dim dUof As Double
        Dim dUos As Double
        Dim dUsf As Double
        Dim dUt1 As Double
        Dim dUt2 As Double
        Dim dUt As Double
        Dim dDepth As Double
        Dim dPr1 As Double
        Dim dDen1 As Double
        Dim dCp1 As Double
        Dim dMeu1 As Double
        Dim dCond1 As Double
        Dim dBeta1 As Double
        Dim dDen2 As Double
        Dim dCp2 As Double
        Dim dMeu2 As Double
        Dim dBeta2 As Double
        Dim dDen3 As Double
        Dim dCp3 As Double
        Dim dNu As Double
        Dim dConvec As Double
        Dim dFlow As Double
        Dim dTfi As Double
        Dim dTsi As Double
        Dim dTref As Double
        Dim dTbeta As Double
        Dim dTfm As Double
        Dim dTsm As Double
        Dim dTfave As Double
        Dim dTsave As Double
        Dim dTfbot As Double
        Dim dTfmid As Double
        Dim dTftop As Double
        Dim dTsbot As Double
        Dim dTsmid As Double
        Dim dTstop As Double
        Dim dTf1 As Double
        Dim dTf2 As Double
        Dim dTf3 As Double
        Dim dTf4 As Double
        Dim dTf5 As Double
        Dim dTf6 As Double
        Dim dTf7 As Double
    
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Dim dTf8 As Double
Dim dTf9 As Double
Dim dTf10 As Double
Dim dTf11 As Double
Dim dTf12 As Double
Dim dTf13 As Double
Dim dTf14 As Double
Dim dTf15 As Double
Dim dTf16 As Double
Dim dTf17 As Double
Dim dTs1 As Double
Dim dTs2 As Double
Dim dTs3 As Double
Dim dTs4 As Double
Dim dTs5 As Double
Dim dTs6 As Double
Dim dTs7 As Double
Dim dTs8 As Double
Dim dTs9 As Double
Dim dTs10 As Double
Dim dTs11 As Double
Dim dTs12 As Double
Dim dTs13 As Double
Dim dTs14 As Double
Dim dTs15 As Double
Dim dTs16 As Double
Dim dTs17 As Double
Dim dTf1p As Double
Dim dTf2p As Double
Dim dTf3p As Double
Dim dTf4p As Double
Dim dTf5p As Double
Dim dTf6p As Double
Dim dTf7p As Double
Dim dTf8p As Double
Dim dTf9p As Double
Dim dTf10p As Double
Dim dTf11p As Double
Dim dTf12p As Double
Dim dTf13p As Double
Dim dTf14p As Double
Dim dTf15p As Double
Dim dTf16p As Double
Dim dTf17p As Double
Dim dTs1p As Double
Dim dTs2p As Double
Dim dTs3p As Double
Dim dTs4p As Double
Dim dTs5p As Double
Dim dTs6p As Double
Dim dTs7p As Double
Dim dTs8p As Double
Dim dTs9p As Double
Dim dTs10p As Double
Dim dTs11p As Double
Dim dTs12p As Double
Dim dTs13p As Double
Dim dTs14p As Double
Dim dTs15p As Double
Dim dTs16p As Double
Dim dTs17p As Double
Dim dAngle As Double
Dim dAngle2 As Double
Dim dOption As Double
Dim dKe As Double
Dim dfb As Double
Dim dCond4 As Double
Dim dCond5 As Double
Dim data(5)
Dim dTf(17) As Double
Dim dTs(17) As Double
Dim dTfp(17) As Double
Dim dTsp(17) As Double
Dim dConv(17)
dDepth = Val(frmCharacteristic.txtDepth.Text)

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dX = Val(frmCharacteristic.txtThick.Text)
dB = Val(frmCharacteristic.txtB.Text)
dL = Val(frmCharacteristic.txtL.Text)
dTime = Val(frmCharacteristic.txtTime.Text)
dMs = Val(frmCharacteristic.txtMass.Text)
dH = dMs / (dB * dL) / 1000
dToa = Val(frmCharacteristic.txtTransmitt.Text)
dAlfa = Val(frmCharacteristic.txtAbsorp.Text)
dTfi = Val(frmCharacteristic.txtTfi.Text) + 273.15
dTsi = Val(frmCharacteristic.txtTsi.Text) + 273.15
dTf1 = dTfi - 273.15
dTf2 = dTfi - 273.15
dTf3 = dTfi - 273.15
dTf4 = dTfi - 273.15
dTf5 = dTfi - 273.15
dTf6 = dTfi - 273.15
dTf7 = dTfi - 273.15
dTf8 = dTfi - 273.15
dTf9 = dTfi - 273.15
dTf10 = dTfi - 273.15
dTf11 = dTfi - 273.15
dTf12 = dTfi - 273.15
dTf13 = dTfi - 273.15
dTf14 = dTfi - 273.15
dTf15 = dTfi - 273.15
dTf16 = dTfi - 273.15
dTf17 = dTfi - 273.15
dTf(1) = dTfi
dTf(2) = dTfi
dTf(3) = dTfi
dTf(4) = dTfi
dTf(5) = dTfi
dTf(6) = dTfi
dTf(7) = dTfi
dTf(8) = dTfi
dTf(9) = dTfi
dTf(10) = dTfi
dTf(11) = dTfi
dTf(12) = dTfi
dTf(13) = dTfi
dTf(14) = dTfi
dTf(15) = dTfi
dTf(16) = dTfi
dTf(17) = dTfi
dTmp = dTfi
dTs1 = dTsi - 273.15
dTs2 = dTsi - 273.15
dTs3 = dTsi - 273.15
dTs4 = dTsi - 273.15
dTs5 = dTsi - 273.15
dTs6 = dTsi - 273.15
dTs7 = dTsi - 273.15
dTs8 = dTsi - 273.15
dTs9 = dTsi - 273.15
dTs10 = dTsi - 273.15
dTs11 = dTsi - 273.15
dTs12 = dTsi - 273.15
dTs13 = dTsi - 273.15
dTs14 = dTsi - 273.15
dTs15 = dTsi - 273.15
dTs16 = dTsi - 273.15
dTs17 = dTsi - 273.15
dTs(1) = dTsi
dTs(2) = dTsi
dTs(3) = dTsi
dTs(4) = dTsi
dTs(5) = dTsi
dTs(6) = dTsi
dTs(7) = dTsi
dTs(8) = dTsi
dTs(9) = dTsi
dTs(10) = dTsi
dTs(11) = dTsi
dTs(12) = dTsi
dTs(13) = dTsi

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dTs(14) = dTsi
dTs(15) = dTsi
dTs(16) = dTsi
dTs(17) = dTsi
dTfm = dTfi - 273.15
dTsm = dTsi - 273.15
dTfbot = dTfi - 273.15
dTfmid = dTfi - 273.15
dTftop = dTfi - 273.15
dTsbot = dTsi - 273.15
dTsmid = dTsi - 273.15
dTstop = dTsi - 273.15
dTfave = dTfi - 273.15
dTsave = dTsi - 273.15
dConvave = 0
C3 = (0.46 * (dTfm - dTsbot) + 0.1 * ((dTfbot + dTsbot) / 2 - dTsbot) - 0.1 * ((dTftop + dTstop) / 2 - dTsbot) - 0.46 * (dTsm -
dTsbot))
If frmSelectCases.optFlow.Value = True Then
  If C3 >= 0 Then
    dKe = 0.0015
    dFlow = dKe * C3 ^ (1 / 2)
  Else
    dKe = -0.0155
    dFlow = dKe * (-C3) ^ (1 / 2)
  End If
ElseIf frmSelectCases.optNoFlow.Value = True Then
  If C3 >= 0 Then
    dKe = 0.0006
    dFlow = dKe * C3 ^ (1 / 2)
  Else
    dKe = -0.00025
    dFlow = dKe * (-C3) ^ (1 / 2)
  End If
ElseIf frmSelectCases.optCheck.Value = True Then
  If C3 >= 0 Then
    dKe = 0.00045
    dFlow = dKe * C3 ^ (1 / 2)
  Else
    dKe = -0.0002
    dFlow = dKe * (-C3) ^ (1 / 2)
  End If
End If
dUt = 0
Qu = 0
Eff = 0
Print #3, Format$(dConvave, "##0.00"), Format$(C3, "0.0000000"), Format$(dFlow, "0.0000000"), Format$(dUt, "#0.000"),
Format$(dTfbot, "00.00"), Format$(dTfmid, "00.00"), Format$(dTftop, "00.00"), Format$(dTsbot, "00.00"), Format$(dTsmid,
"00.00"), Format$(dTstop, "00.00"), Format$(dTfave, "00.00"), Format$(dTsave, "00.00"), Format$(Qu, "###0.000"), Format$(Eff,
"##0.0")
dUof = Val(frmCharacteristic.txtkwall.Text) / dX
dUos = (Val(frmCharacteristic.txtkwall.Text) / dX)
dUsf = Val(frmCharacteristic.txtkpart.Text) / 0.035
dN = Val(frmCharacteristic.txtN.Text)
dEmittG = Val(frmCharacteristic.txtEmittG.Text)
dEmittP = Val(frmCharacteristic.txtEmittP.Text)
dTf(j) = dTfi
dTs(j) = dTsi
dConv(j) = dConvec
Open finput For Input As 1
Do While Not (EOF(1))
  For i = 1 To 5
    Input #1, data(i)
  Next i
  dTa = data(3) + 273.15
  dWind = data(4)
  dSolar = data(5) / 0.00507
  If dSolar > 0 Then
    dSolar = dSolar
  Else
    dSolar = 0
  End If
  dhv = 5.7 + 3.8 * dWind
  Dim propcheck As Integer
  propcheck = 1
  Open "C:\Program Files\Microsoft Visual Studio\VB98\prop2.txt" For Input As 2

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Do While propcheck = 1
  If Not (EOF(2)) Then
    Input #2, Temp, Den, Cp, Meu, Cond, Pr, Beta
    dTref = dTfm + 273.15
    If dTref > Temp Then
      Temp1 = Temp
      Den1 = Den
      Cp1 = Cp
      Meu1 = Meu
    Else
      Temp2 = Temp
      Den2 = Den
      Cp2 = Cp
      Meu2 = Meu
      propcheck = 0
    End If
  Else
    MsgBox ("The reference temperature out of data range")
    Exit Sub
  End If
Loop
Close #2
dDen1 = Den1 + (Den2 - Den1) * (dTref - Temp1) / (Temp2 - Temp1)
dCp1 = Cp1 + (Cp2 - Cp1) * (dTref - Temp1) / (Temp2 - Temp1)
dMeu1 = Meu1 + (Meu2 - Meu1) * (dTref - Temp1) / (Temp2 - Temp1)
'Find out water properties of water in the storage tank
propcheck = 1
Open "C:\Program Files\Microsoft Visual Studio\VB98\prop2.txt" For Input As 2
Do While propcheck = 1
  If Not (EOF(2)) Then
    Input #2, Temp, Den, Cp, Meu, Cond, Pr, Beta
    dTref = dTsm + 273.15
    If dTref > Temp Then
      Temp1 = Temp
      Den1 = Den
      Cp1 = Cp
      Meu1 = Meu
    Else
      Temp2 = Temp
      Den2 = Den
      Cp2 = Cp
      Meu2 = Meu
      propcheck = 0
    End If
  Else
    MsgBox ("The reference temperature out of data range")
    Exit Sub
  End If
Loop
Close #2
dDen2 = Den1 + (Den2 - Den1) * (dTref - Temp1) / (Temp2 - Temp1)
dCp2 = Cp1 + (Cp2 - Cp1) * (dTref - Temp1) / (Temp2 - Temp1)
dMeu2 = Meu1 + (Meu2 - Meu1) * (dTref - Temp1) / (Temp2 - Temp1)
'Calculate Flow
C3 = (0.46 * (dTfm - dTs1) + 0.1 * ((dTf1 + dTs1) / 2 - dTs1) - 0.1 * ((dTf17 + dTs17) / 2 - dTs1) - 0.46 * (dTsm - dTs1))
If frmSelectCases.optFlow.Value = True Then
  If C3 >= 0 Then
    dKe = 0.0015
    dFlow = dKe * C3 ^ (1 / 2)
  Else
    dKe = -0.0155
    dFlow = dKe * (-C3) ^ (1 / 2)
  End If
ElseIf frmSelectCases.optNoFlow.Value = True Then
  If C3 >= 0 Then
    dKe = 0.0006
    dFlow = dKe * C3 ^ (1 / 2)
  Else
    dKe = -0.00025
    dFlow = dKe * (-C3) ^ (1 / 2)
  End If
ElseIf frmSelectCases.optCheck.Value = True Then
  If C3 >= 0 Then
    dKe = 0.00045
    dFlow = dKe * C3 ^ (1 / 2)
  End If
End If

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Else
  dKe = -0.0002
  dFlow = dKe * (-C3) ^ (1 / 2)
End If
End If

For j = 1 To 17
'A: portion 1
  If j = 1 Then
    If dTmp = dTfi Then
      dTmp = dTfi
    Else
      dTmp = (1.01 * dToa * dAlfa * dSolar + dConv(j) * (dTf(j) - 273.15) + dUt * (dTa - 273.15)) / (dConv(j) + dUt) + 273.15
      If dTmp <= dTa Then
        dTmp = dTf(j)
      Else
        dTmp = dTmp
      End If
    End If
    de = 0.43 * (1 - 100 / dTmp)
    df = (1 + 0.089 * dhv - 0.1166 * dhv * dEmittP) * (1 + 0.07866 * dN)
    dC = 520 * (1 - 0.000051 * Val(frmCharacteristic.txtTilt.Text) ^ 2)
    If dTmp > dTa Then
      dUt1 = (dN / (dC / dTmp * (((dTmp - dTa) / (dN + df)) ^ de)) + 1 / dhv) ^ (-1)
    Else
      dUt1 = 0
    End If
    dUt2 = (5.6697 * 10 ^ (-8)) * (dTmp + dTa) * ((dTmp * dTmp) + (dTa * dTa)) / (1 / (dEmittP + 0.00591 * dN * dhv) + (2 *
dN + df - 1 + 0.133 * dEmittP) / dEmittG - dN)
    dUt = dUt1 + dUt2
    propcheck = 1
    Open "C:\Program Files\Microsoft Visual Studio\VB98\prop2.txt" For Input As 2
    Do While propcheck = 1
      If Not (EOF(2)) Then
        Input #2, Temp, Den, Cp, Meu, Cond, Pr, Beta
        dTref = dTmp - 0.25 * (dTmp - dTf(j))
        If dTref > Temp Then
          Temp1 = Temp
          Den1 = Den
          Cp1 = Cp
          Meu1 = Meu
          Cond1 = Cond
          Pr5 = Pr
        Else
          Temp2 = Temp
          Den2 = Den
          Cp2 = Cp
          Meu2 = Meu
          Cond2 = Cond
          Pr2 = Pr
          propcheck = 0
        End If
      Else
        MsgBox ("The reference temperature out of data range")
      Exit Sub
    End If
  Loop
  Close #2
  propcheck = 1
  Open "C:\Program Files\Microsoft Visual Studio\VB98\prop2.txt" For Input As 2
  Do While propcheck = 1
    If Not (EOF(2)) Then
      Input #2, Temp, Den, Cp, Neu, Cond, Pr, Beta
      dTbeta = dTf(j) + 0.5 * (dTmp - dTf(j))
      If dTbeta > Temp Then
        Temp3 = Temp
        Beta3 = Beta
      Else
        Temp4 = Temp
        Beta4 = Beta
        propcheck = 0
      End If
    Else
      MsgBox ("The reference temperature out of data range")
    Exit Sub
  End If

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End If
Loop
Close #2
dDen3 = Den1 + (Den2 - Den1) * (dTref - Temp1) / (Temp2 - Temp1)
dCp3 = Cp1 + (Cp2 - Cp1) * (dTref - Temp1) / (Temp2 - Temp1)
dMeu3 = Meu1 + (Meu2 - Meu1) * (dTref - Temp1) / (Temp2 - Temp1)
dCond3 = Cond1 + (Cond2 - Cond1) * (dTref - Temp1) / (Temp2 - Temp1)
dPr3 = Pr1 + (Pr2 - Pr1) * (dTref - Temp1) / (Temp2 - Temp1)
dBeta = Beta3 + (Beta4 - Beta3) * (dTbeta - Temp3) / (Temp4 - Temp3)
dAngle = Cos(Val(frmCharacteristic.txtTilt.Text) * 22 / 7 / 180)
If dTmp > dTf(j) Then
    dAngle = dAngle
Else
    dAngle = (-1) * dAngle
End If
dNu = 0.56 * (9.81 * dBeta * (dTmp - dTf(j)) * (dL) ^ 3 * dPr3 * dAngle / (dMeu3 / dDen3) ^ 2) ^ 0.25
dConv(j) = dNu * dCond3 / dL
propcheck = 1
Open "C:\Program Files\Microsoft Visual Studio\VB98\prop2.txt" For Input As 2
Do While propcheck = 1
    If Not (EOF(2)) Then
        Input #2, Temp, Den, Cp, Meu, Cond, Pr, Beta
        dTref = dTf(j)
        If dTref > Temp Then
            Temp1 = Temp
            Den1 = Den
            Cp1 = Cp
            Meu1 = Meu
            Cond1 = Cond
        Else
            Temp2 = Temp
            Den2 = Den
            Cp2 = Cp
            Meu2 = Meu
            Cond2 = Cond
            propcheck = 0
        End If
    Else
        MsgBox ("The reference temperature out of data range")
        Exit Sub
    End If
Loop
Close #2
dDen4 = Den1 + (Den2 - Den1) * (dTref - Temp1) / (Temp2 - Temp1)
dCp4 = Cp1 + (Cp2 - Cp1) * (dTref - Temp1) / (Temp2 - Temp1)
dMeu4 = Meu1 + (Meu2 - Meu1) * (dTref - Temp1) / (Temp2 - Temp1)
dCond4 = Cond1 + (Cond2 - Cond1) * (dTref - Temp1) / (Temp2 - Temp1)
propcheck = 1
Open "C:\Program Files\Microsoft Visual Studio\VB98\prop2.txt" For Input As 2
Do While propcheck = 1
    If Not (EOF(2)) Then
        Input #2, Temp, Den, Cp, Meu, Cond, Pr, Beta
        dTref = dTs(j)
        If dTref > Temp Then
            Temp1 = Temp
            Den1 = Den
            Cp1 = Cp
            Meu1 = Meu
            Cond1 = Cond
        Else
            Temp2 = Temp
            Den2 = Den
            Cp2 = Cp
            Meu2 = Meu
            Cond2 = Cond
            propcheck = 0
        End If
    Else
        MsgBox ("The reference temperature out of data range")
        Exit Sub
    End If
Loop
Close #2
dDen5 = Den1 + (Den2 - Den1) * (dTref - Temp1) / (Temp2 - Temp1)
dCp5 = Cp1 + (Cp2 - Cp1) * (dTref - Temp1) / (Temp2 - Temp1)

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dMeu5 = Meu1 + (Meu2 - Meu1) * (dTref - Temp1) / (Temp2 - Temp1)
dCond5 = Cond1 + (Cond2 - Cond1) * (dTref - Temp1) / (Temp2 - Temp1)
If C3 >= 0 Then
    dTfp(j) = dTf(j) + dTime / (dCp4 * dDen4 * dDepth) * (dConv(j) * (1.01 * dToa * dAlfa * dSolar - dUt * (dTf(j) - dTa)) /
(dConv(j) + dUt) - dUsf * (dTf(j) - dTs(j)) - dUof * (1 / (dL / 17) + 2 / dB) * dDepth * (dTf(j) - dTa) - (dFlow * dCp4) / (dB * dL / 17)
* (dTf(j) - dTs(j)))
    dTsp(j) = dTs(j) + dTime / (dCp5 * dDen5 * dH) * (dFlow * dCp5 / (dB * dL / 17) * (dTs(j + 1) - dTs(j)) + dUsf * (dTf(j)
- dTs(j)) - dUos * (1 + 2 * dH / dB + dH / (dL / 17)) * (dTs(j) - dTa))
Else
    dTfp(j) = dTf(j) + dTime / (dCp4 * dDen4 * dDepth) * (dConv(j) * (1.01 * dToa * dAlfa * dSolar - dUt * (dTf(j) - dTa)) /
(dConv(j) + dUt) - dUsf * (dTf(j) - dTs(j)) - dUof * (1 / (dL / 17) + 2 / dB) * dDepth * (dTf(j) - dTa) - (dFlow * dCp4) / (dB * dL / 17)
* (dTf(j) + 1) - dTf(j)))
    dTsp(j) = dTs(j) + dTime / (dCp5 * dDen5 * dH) * (dFlow * dCp5 / (dB * dL / 17) * (dTs(j) - dTf(j)) + dUsf * (dTf(j) -
dTs(j)) - dUos * (1 + 2 * dH / dB + dH / (dL / 17)) * (dTs(j) - dTa))
End If
'At portions 2 to 16
ElseIf j > 1 And j < 17 Then
    dTmp = (1.01 * dToa * dAlfa * dSolar + dConv(j) * (dTf(j) - 273.15) + dUt * (dTa - 273.15)) / (dConv(j) + dUt) + 273.15
    If dTmp <= dTa Then
        dTmp = dTf(j)
    Else
        dTmp = dTmp
    End If
    de = 0.43 * (1 - 100 / dTmp)
    df = (1 + 0.089 * dhv - 0.1166 * dhv * dEmittP) * (1 + 0.07866 * dN)
    dC = 520 * (1 - 0.000051 * Val(frmCharacteristic.txtTilt.Text) ^ 2)
    If dTmp > dTa Then
        dUt1 = (dN / (dC / dTmp * (((dTmp - dTa) / (dN + df)) ^ de)) + 1 / dhv) ^ (-1)
    Else
        dUt1 = 0
    End If
    dUt2 = (5.6697 * 10 ^ (-8)) * (dTmp + dTa) * ((dTmp * dTmp) + (dTa * dTa)) / (1 / (dEmittP + 0.00591 * dN * dhv) + (2 *
dN + df - 1 + 0.133 * dEmittP) / dEmittG - dN)
    dUt = dUt1 + dUt2
    propcheck = 1
    Open "C:\Program Files\Microsoft Visual Studio\VB98\prop2.txt" For Input As 2
    Do While propcheck = 1
        If Not (EOF(2)) Then
            Input #2, Temp, Den, Cp, Meu, Cond, Pr, Beta
            dTref = dTmp - 0.25 * (dTmp - dTf(j))
            If dTref > Temp Then
                Temp1 = Temp
                Den1 = Den
                Cp1 = Cp
                Meu1 = Meu
                Cond1 = Cond
                Pr5 = Pr
            Else
                Temp2 = Temp
                Den2 = Den
                Cp2 = Cp
                Meu2 = Meu
                Cond2 = Cond
                Pr2 = Pr
                propcheck = 0
            End If
        Else
            MsgBox ("The reference temperature out of data range")
            Exit Sub
        End If
    Loop
    Close #2
    propcheck = 1
    Open "C:\Program Files\Microsoft Visual Studio\VB98\prop2.txt" For Input As 2
    Do While propcheck = 1
        If Not (EOF(2)) Then
            Input #2, Temp, Den, Cp, Neu, Cond, Pr, Beta
            dTbeta = dTf(j) + 0.5 * (dTmp - dTf(j))
            If dTbeta > Temp Then
                Temp3 = Temp
                Beta3 = Beta
            Else
                Temp4 = Temp
                Beta4 = Beta
                propcheck = 0
            End If
        End If
    Loop

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    End If
Else
    MsgBox ("The reference temperature out of data range")
Exit Sub
End If
Loop
Close #2
dDen3 = Den1 + (Den2 - Den1) * (dTref - Temp1) / (Temp2 - Temp1)
dCp3 = Cp1 + (Cp2 - Cp1) * (dTref - Temp1) / (Temp2 - Temp1)
dMeu3 = Meu1 + (Meu2 - Meu1) * (dTref - Temp1) / (Temp2 - Temp1)
dCond3 = Cond1 + (Cond2 - Cond1) * (dTref - Temp1) / (Temp2 - Temp1)
dPr3 = Pr1 + (Pr2 - Pr1) * (dTref - Temp1) / (Temp2 - Temp1)
dBeta = Beta3 + (Beta4 - Beta3) * (dTbeta - Temp3) / (Temp4 - Temp3)
dAngle = Cos(Val(frmCharacteristic.txtTilt.Text) * 22 / 7 / 180)
If dTmp > dTf(j) Then
    dAngle = dAngle
Else
    dAngle = (-1) * dAngle
End If
dNu = 0.56 * (9.81 * dBeta * (dTmp - dTf(j)) * (dL / 17) ^ 3 * dPr3 * dAngle / (dMeu3 / dDen3) ^ 2) ^ 0.25
dConv(j) = dNu * dCond3 / (dL / 17)
propcheck = 1
Open "C:\Program Files\Microsoft Visual Studio\VB98\prop2.txt" For Input As 2
Do While propcheck = 1
    If Not (EOF(2)) Then
        Input #2, Temp, Den, Cp, Meu, Cond, Pr, Beta
        dTref = dTf(j)
        If dTref > Temp Then
            Temp1 = Temp
            Den1 = Den
            Cp1 = Cp
            Meu1 = Meu
            Cond1 = Cond
        Else
            Temp2 = Temp
            Den2 = Den
            Cp2 = Cp
            Meu2 = Meu
            Cond2 = Cond
            propcheck = 0
        End If
    Else
        MsgBox ("The reference temperature out of data range")
    Exit Sub
    End If
Loop
Close #2
dDen4 = Den1 + (Den2 - Den1) * (dTref - Temp1) / (Temp2 - Temp1)
dCp4 = Cp1 + (Cp2 - Cp1) * (dTref - Temp1) / (Temp2 - Temp1)
dMeu4 = Meu1 + (Meu2 - Meu1) * (dTref - Temp1) / (Temp2 - Temp1)
dCond4 = Cond1 + (Cond2 - Cond1) * (dTref - Temp1) / (Temp2 - Temp1)
propcheck = 1
Open "C:\Program Files\Microsoft Visual Studio\VB98\prop2.txt" For Input As 2
Do While propcheck = 1
    If Not (EOF(2)) Then
        Input #2, Temp, Den, Cp, Meu, Cond, Pr, Beta
        dTref = dTs(j)
        If dTref > Temp Then
            Temp1 = Temp
            Den1 = Den
            Cp1 = Cp
            Meu1 = Meu
            Cond1 = Cond
        Else
            Temp2 = Temp
            Den2 = Den
            Cp2 = Cp
            Meu2 = Meu
            Cond2 = Cond
            propcheck = 0
        End If
    Else
        MsgBox ("The reference temperature out of data range")
    Exit Sub
    End If

```

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Loop
Close #2
dDen5 = Den1 + (Den2 - Den1) * (dTref - Temp1) / (Temp2 - Temp1)
dCp5 = Cp1 + (Cp2 - Cp1) * (dTref - Temp1) / (Temp2 - Temp1)
dMeu5 = Meu1 + (Meu2 - Meu1) * (dTref - Temp1) / (Temp2 - Temp1)
dCond5 = Cond1 + (Cond2 - Cond1) * (dTref - Temp1) / (Temp2 - Temp1)
If j <= 9 Then
  If C3 >= 0 Then
    dTfp(j) = dTf(j) + dTime / (dCp4 * dDen4 * dDepth) * (dConv(j) * (1.01 * dToa * dAlfa * dSolar - dUt * (dTf(j) - dTa)) / (dConv(j) + dUt) - dUsf * (dTf(j) - dTs(j)) - dUof * (2 * dDepth / dB) * (dTf(j) - dTa) - (dFlow * dCp4) / (dB * dL / 17) * (dTf(j) - dTf(j - 1)))
    dTsp(j) = dTs(j) + dTime / (dCp5 * dDen5 * dH) * (dFlow * dCp5 / (dB * dL / 17) * (dTs(j + 1) - dTs(j)) + dUsf * (dTf(j) - dTs(j)) - dUos * (1 + 2 * dH / dB) * (dTs(j) - dTa))
  Else
    dTfp(j) = dTf(j) + dTime / (dCp4 * dDen4 * dDepth) * (dConv(j) * (1.01 * dToa * dAlfa * dSolar - dUt * (dTf(j) - dTa)) / (dConv(j) + dUt) - dUsf * (dTf(j) - dTs(j)) - dUof * (2 * dDepth / dB) * (dTf(j) - dTa) - (dFlow * dCp4) / (dB * dL / 17) * (dTf(j + 1) - dTf(j)))
    dTsp(j) = dTs(j) + dTime / (dCp5 * dDen5 * dH) * (dFlow * dCp5 / (dB * dL / 17) * (dTs(j) - dTs(j - 1)) + dUsf * (dTf(j) - dTs(j)) - dUos * (1 + 2 * dH / dB) * (dTs(j) - dTa))
  End If
  Else
    If C3 >= 0 Then
      dTfp(j) = dTf(j) + dTime / (dCp4 * dDen4 * dDepth) * (dConv(j) * (1.01 * dToa * dAlfa * dSolar - dUt * (dTf(j) - dTa)) / (dConv(j) + dUt) - dUsf * (dTf(j) - dTs(j)) - dUof * (2 * dDepth / dB) * (dTf(j) - dTa) - (dFlow * dCp4) / (dB * dL / 17) * (dTf(j) - dTf(j - 1)))
      dTsp(j) = dTs(j) + dTime / (dCp5 * dDen5 * dH) * (dFlow * dCp5 / (dB * dL / 17) * (dTs(j + 1) - dTs(j)) + dUsf * (dTf(j) - dTs(j)) - dUos * (1 + 2 * dH / dB) * (dTs(j) - dTa))
    Else
      dTfp(j) = dTf(j) + dTime / (dCp4 * dDen4 * dDepth) * (dConv(j) * (1.01 * dToa * dAlfa * dSolar - dUt * (dTf(j) - dTa)) / (dConv(j) + dUt) - dUsf * (dTf(j) - dTs(j)) - dUof * (2 * dDepth / dB) * (dTf(j) - dTa) - (dFlow * dCp4) / (dB * dL / 17) * (dTf(j + 1) - dTf(j)))
      dTsp(j) = dTs(j) + dTime / (dCp5 * dDen5 * dH) * (dFlow * dCp5 / (dB * dL / 17) * (dTs(j) - dTs(j - 1)) + dUsf * (dTf(j) - dTs(j)) - dUos * (1 + 2 * dH / dB) * (dTs(j) - dTa))
    End If
  End If
'At portion 17
Elseif j = 17 Then
  dTmp = (1.01 * dToa * dAlfa * dSolar + dConv(j) * (dTf(j) - 273.15) + dUt * (dTa - 273.15)) / (dConv(j) + dUt) + 273.15
  If dTmp <= dTa Then
    dTmp = dTf(j)
  Else
    dTmp = dTmp
  End If
  de = 0.43 * (1 - 100 / dTmp)
  df = (1 + 0.089 * dhv - 0.1166 * dhv * dEmittP) * (1 + 0.07866 * dN)
  dC = 520 * (1 - 0.000051 * Val(frmCharacteristic.txtTilt.Text) ^ 2)
  If dTmp > dTa Then
    dUt1 = (dN / (dC / dTmp * (((dTmp - dTa) / (dN + df)) ^ de)) + 1 / dhv) ^ (-1)
  Else
    dUt1 = 0
  End If
  dUt2 = (5.6697 * 10 ^ (-8)) * (dTmp + dTa) * ((dTmp * dTmp) + (dTa * dTa)) / (1 / (dEmittP + 0.00591 * dN * dhv) + (2 * dN + df - 1 + 0.133 * dEmittP) / dEmittG - dN)
  dUt = dUt1 + dUt2
  propcheck = 1
  Open "C:\Program Files\Microsoft Visual Studio\VB98\prop2.txt" For Input As 2
  Do While propcheck = 1
    If Not (EOF(2)) Then
      Input #2, Temp, Den, Cp, Meu, Cond, Pr, Beta
      dTref = dTmp - 0.25 * (dTmp - dTf(j))
      If dTref > Temp Then
        Temp1 = Temp
        Den1 = Den
        Cp1 = Cp
        Meu1 = Meu
        Cond1 = Cond
        Pr5 = Pr
      Else
        Temp2 = Temp
        Den2 = Den
        Cp2 = Cp
        Meu2 = Meu
        Cond2 = Cond
        Pr2 = Pr
        propcheck = 0
      End If
    End If
  Loop

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    End If
Else
    MsgBox ("The reference temperature out of data range")
Exit Sub
End If
Loop
Close #2
propcheck = 1
Open "C:\Program Files\Microsoft Visual Studio\VB98\prop2.txt" For Input As 2
Do While propcheck = 1
    If Not (EOF(2)) Then
        Input #2, Temp, Den, Cp, Neu, Cond, Pr, Beta
        dTbeta = dTf(j) + 0.5 * (dTmp - dTf(j))
        If dTbeta > Temp Then
            Temp3 = Temp
            Beta3 = Beta
        Else
            Temp4 = Temp
            Beta4 = Beta
            propcheck = 0
        End If
    Else
        MsgBox ("The reference temperature out of data range")
Exit Sub
End If
Loop
Close #2
dDen3 = Den1 + (Den2 - Den1) * (dTref - Temp1) / (Temp2 - Temp1)
dCp3 = Cp1 + (Cp2 - Cp1) * (dTref - Temp1) / (Temp2 - Temp1)
dMeu3 = Meu1 + (Meu2 - Meu1) * (dTref - Temp1) / (Temp2 - Temp1)
dCond3 = Cond1 + (Cond2 - Cond1) * (dTref - Temp1) / (Temp2 - Temp1)
dPr3 = Pr1 + (Pr2 - Pr1) * (dTref - Temp1) / (Temp2 - Temp1)
dBeta = Beta3 + (Beta4 - Beta3) * (dTbeta - Temp3) / (Temp4 - Temp3)
dAngle = Cos(Val(frmCharacteristic.txtTilt.Text) * 22 / 7 / 180)
If dTmp > dTf(j) Then
    dAngle = dAngle
Else
    dAngle = (-1) * dAngle
End If
dNu = 0.56 * (9.81 * dBeta * (dTmp - dTf(j)) * (dL / 17) ^ 3 * dPr3 * dAngle / (dMeu3 / dDen3) ^ 2) ^ 0.25
dConv(j) = dNu * dCond3 / (dL / 17)
propcheck = 1
Open "C:\Program Files\Microsoft Visual Studio\VB98\prop2.txt" For Input As 2
Do While propcheck = 1
    If Not (EOF(2)) Then
        Input #2, Temp, Den, Cp, Meu, Cond, Pr, Beta
        dTref = dTf(j)
        If dTref > Temp Then
            Temp1 = Temp
            Den1 = Den
            Cp1 = Cp
            Meu1 = Meu
            Cond1 = Cond
        Else
            Temp2 = Temp
            Den2 = Den
            Cp2 = Cp
            Meu2 = Meu
            Cond2 = Cond
            propcheck = 0
        End If
    Else
        MsgBox ("The reference temperature out of data range")
Exit Sub
End If
Loop
Close #2
dDen4 = Den1 + (Den2 - Den1) * (dTref - Temp1) / (Temp2 - Temp1)
dCp4 = Cp1 + (Cp2 - Cp1) * (dTref - Temp1) / (Temp2 - Temp1)
dMeu4 = Meu1 + (Meu2 - Meu1) * (dTref - Temp1) / (Temp2 - Temp1)
dCond4 = Cond1 + (Cond2 - Cond1) * (dTref - Temp1) / (Temp2 - Temp1)
propcheck = 1
Open "C:\Program Files\Microsoft Visual Studio\VB98\prop2.txt" For Input As 2
Do While propcheck = 1
    If Not (EOF(2)) Then

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Input #2, Temp, Den, Cp, Meu, Cond, Pr, Beta
dTref = dTs(j)
If dTref > Temp Then
    Temp1 = Temp
    Den1 = Den
    Cp1 = Cp
    Meu1 = Meu
    Cond1 = Cond
Else
    Temp2 = Temp
    Den2 = Den
    Cp2 = Cp
    Meu2 = Meu
    Cond2 = Cond
    propcheck = 0
End If
Else
    MsgBox ("The reference temperature out of data range")
Exit Sub
End If
Loop
Close #2
dDen5 = Den1 + (Den2 - Den1) * (dTref - Temp1) / (Temp2 - Temp1)
dCp5 = Cp1 + (Cp2 - Cp1) * (dTref - Temp1) / (Temp2 - Temp1)
dMeu5 = Meu1 + (Meu2 - Meu1) * (dTref - Temp1) / (Temp2 - Temp1)
dCond5 = Cond1 + (Cond2 - Cond1) * (dTref - Temp1) / (Temp2 - Temp1)
If C3 >= 0 Then
    dTfp(j) = dTf(j) + dTime / (dCp2 * dDen2 * dDepth) * (dConv(j) * (1.01 * dToa * dAlfa * dSolar - dUt * (dTf(j) - dTa)) /
(dConv(j) + dUt) - dUsf * (dTf(j) - dTs(j)) - dUof * (1 / (dL / 17) + 2 / dB) * dDepth * (dTf(j) - dTa) - (dFlow * dCp2) / (dB * dL / 17)
* (dTf(j) - dTf(j - 1)))
    dTsp(j) = dTs(j) + dTime / (dCp3 * dDen3 * dH) * (dFlow * dCp3 / (dB * dL / 17) * (dTf(j) - dTs(j)) + dUsf * (dTf(j) -
dTs(j)) - dUos * (1 + 2 * dH / dB + dH / (dL / 17)) * (dTf(j) - dTa))
Else
    dTfp(j) = dTf(j) + dTime / (dCp2 * dDen2 * dDepth) * (dConv(j) * (1.01 * dToa * dAlfa * dSolar - dUt * (dTf(j) - dTa)) /
(dConv(j) + dUt) - dUsf * (dTf(j) - dTs(j)) - dUof * (1 / (dL / 17) + 2 / dB) * dDepth * (dTf(j) - dTa) - (dFlow * dCp2) / (dB * dL / 17)
* (dTf(j) - dTf(j)))
    dTsp(j) = dTs(j) + dTime / (dCp3 * dDen3 * dH) * (dFlow * dCp3 / (dB * dL / 17) * (dTf(j) - dTs(j) - 1) + dUsf * (dTf(j)
- dTs(j)) - dUos * (1 + 2 * dH / dB + dH / (dL / 17)) * (dTf(j) - dTa))
End If
End If
'End
dTf(j) = dTfp(j)
dTs(j) = dTsp(j)
If j = 17 Then
    Exit For
End If
Next j
dTf1 = dTf(1)
dTs1 = dTs(1)
dTf17 = dTf(17)
dTs17 = dTs(17)
dTfm = (dTf(1) + dTf(9) + dTf(17)) / 3 - 273.15
dTsi = dTsm
dTsm = (dTsp(1) + dTsp(9) + dTsp(17)) / 3 - 273.15
dTfave = dTfm
dTsave = dTsm
dTfbot = dTf(1) - 273.15
dTfmid = dTf(9) - 273.15
dTftop = dTf(17) - 273.15
dTsbot = dTsp(1) - 273.15
dTsmid = dTsp(9) - 273.15
dTstop = dTsp(17) - 273.15
propcheck = 1
Open "C:\Program Files\Microsoft Visual Studio\VB98\prop2.txt" For Input As 2
Do While propcheck = 1
    If Not (EOF(2)) Then
        Input #2, Temp, Den, Cp, Meu, Cond, Pr, Beta
        dTref = dTsm + 273.15
        If dTref > Temp Then
            Temp1 = Temp
            Den1 = Den
            Cp1 = Cp
            Meu1 = Meu
            Cond1 = Cond
        Else

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Temp2 = Temp
Den2 = Den
Cp2 = Cp
Meu2 = Meu
Cond2 = Cond
propcheck = 0
End If
Else
MsgBox ("The reference temperature out of data range")
Exit Sub
End If
Loop
Close #2
dDen5 = Den1 + (Den2 - Den1) * (dTref - Temp1) / (Temp2 - Temp1)
dCp5 = Cp1 + (Cp2 - Cp1) * (dTref - Temp1) / (Temp2 - Temp1)
dMeu5 = Meu1 + (Meu2 - Meu1) * (dTref - Temp1) / (Temp2 - Temp1)
dCond5 = Cond1 + (Cond2 - Cond1) * (dTref - Temp1) / (Temp2 - Temp1)
Qu = dDen5 * dH * dB * dL * dCp5 * (dTsm - dTsi) / 1000
If Qu >= 0 Then
Qu = Qu
Else
Qu = 0
End If
If Solar > 0 Then
Eff = Qu * 1000 / (dB * dL * Solar * dTime) * 100
Else
Eff = 0
End If
dTf1 = dTf(1) - 273.15
dTf2 = dTf(2) - 273.15
dTf3 = dTf(3) - 273.15
dTf4 = dTf(4) - 273.15
dTf5 = dTf(5) - 273.15
dTf6 = dTf(6) - 273.15
dTf7 = dTf(7) - 273.15
dTf8 = dTf(8) - 273.15
dTf9 = dTf(9) - 273.15
dTf10 = dTf(10) - 273.15
dTf11 = dTf(11) - 273.15
dTf12 = dTf(12) - 273.15
dTf13 = dTf(13) - 273.15
dTf14 = dTf(14) - 273.15
dTf15 = dTf(15) - 273.15
dTf16 = dTf(16) - 273.15
dTf17 = dTf(17) - 273.15
dTs1 = dTs(1) - 273.15
dTs2 = dTs(2) - 273.15
dTs3 = dTs(3) - 273.15
dTs4 = dTs(4) - 273.15
dTs5 = dTs(5) - 273.15
dTs6 = dTs(6) - 273.15
dTs7 = dTs(7) - 273.15
dTs8 = dTs(8) - 273.15
dTs9 = dTs(9) - 273.15
dTs10 = dTs(10) - 273.15
dTs11 = dTs(11) - 273.15
dTs12 = dTs(12) - 273.15
dTs13 = dTs(13) - 273.15
dTs14 = dTs(14) - 273.15
dTs15 = dTs(15) - 273.15
dTs16 = dTs(16) - 273.15
dTs17 = dTs(17) - 273.15
dConvave = (dConv(1) + dConv(2) + dConv(3) + dConv(4) + dConv(5) + dConv(6) + dConv(7) + dConv(8) + dConv(9) +
dConv(10) + dConv(11) + dConv(12) + dConv(13) + dConv(14) + dConv(15) + dConv(16) + dConv(17)) / 17
Print #3, Format$(dConvave, "##0.00"), Format$(C3, "0.0000000"), Format$(dFlow, "0.0000000"), Format$(dUt, "#0.000"),
Format$(dTfbot, "00.00"), Format$(dTfmid, "00.00"), Format$(dTftop, "00.00"), Format$(dTfbot, "00.00"), Format$(dTfmid,
"00.00"), Format$(dTstop, "00.00"), Format$(dTfave, "00.00"), Format$(dTsave, "00.00"), Format$(Qu, "###0.000"), Format$(Eff,
"##0.0")
Print #4, Format$(dTf1, "##0.00"), Format$(dTf2, "##0.00"), Format$(dTf3, "##0.00"), Format$(dTf4, "##0.00"), Format$(dTf5,
"##0.00"), Format$(dTf6, "##0.00"), Format$(dTf7, "##0.00"), Format$(dTf8, "##0.00"), Format$(dTf9, "##0.00"), Format$(dTf10,
"##0.00"), Format$(dTf11, "##0.00"), Format$(dTf12, "##0.00"), Format$(dTf13, "##0.00"), Format$(dTf14, "##0.00"), Format$(
dTf15, "##0.00"), Format$(dTf16, "##0.00"), Format$(dTf17, "##0.00"), Format$(dTs1, "##0.00"), Format$(dTs2, "##0.00"),
Format$(dTs3, "##0.00"), Format$(dTs4, "##0.00"), Format$(dTs5, "##0.00"), Format$(dTs6, "##0.00"), Format$(dTs7, "##0.00"),
Format$(dTs8, "##0.00"), Format$(dTs9, "##0.00"), Format$(dTs10, "##0.00"), Format$(dTs11, "##0.00"), Format$(dTs12,

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##0.00"), Format$(dT13, "##0.00"), Format$(dT14, "##0.00"), Format$(dT15, "##0.00"), Format$(dT16, "##0.00"), Format$(dT17, "##0.00")
    Loop
    MsgBox "Simulation complete!", vbOKOnly
    Close #filenum
End If
End
End Sub
```