Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ CSI - Section 5.1 – Boolean Expressions

In Exercises 7 through 18, determine whether the condition is true or false. Assume a = 2 and b = 3.

7. 3 \* a = 2 \* b

8. (5 - a) \* b < 7

9. b <= 3

10. a^b = b^a

11. a^(5 - 2) > 7

12. 3E-02 <.01 \* a

13. (a < b) or (b < a)

14. (a \* a < b) Or Not (a \* a < a)

15. Not ((a < b) And (a < (b + a)))

16. Not (a < b) Or Not (a < (b + a))

17. ((a = b) And (a \* a < b \* b)) Or ((b < a) And (2 \* a < b))

18. ((a = b) Or Not (b < a)) And ((a < b) Or (b = a + 1))

In Exercises 19 through 30, determine whether the condition is true or false.

19. "9W" < > "9w"

20. "Inspector" < "gadget"

21. "Car" < "Train"

22. "J" > = "J"

23. "99" > "ninety-nine"

24. "B" > "?"

25. ("Duck" < "pig") And ("pig" < "big")

26. "Duck" < "Duck" & "Duck"

27. Not (("B" = "b") Or ("Big" < "big"))

28. Not ("B" = "b") And Not ("Big" < "big")

29. (("Ant" < "hill") And ("mole" > "hill")) Or Not (Not ("Ant" < "hill") Or Not ("Mole" >"hill"))

30. (7 < 34) And ("7" > "34")

In Exercises 31 through 40, determine whether or not the two conditions are equivalentthat is, whether

they will be true or false for exactly the same values of the variables appearing in them.

31. a <= b; (a < b) Or (a = b)

32. Not (a < b); a > b

33. (a = b) And (a < b); a <> b

34. Not ((a = b) Or (a = c)); (a <> b) And (a <> c)

35. (a < b) And ((a > d) Or (a > e)); ((a < b) And (a > d)) Or ((a < b) And (a > e))

36. Not ((a = b + c) Or (a = b)); (a <> b) Or (a <> b + c)

37. (a < b + c) Or (a = b + c); Not ((a > b) Or (a > c))

38. Not (a >= b); (a <= b) Or Not (a = b)

39. Not (a >= b); (a <= b) And Not (a = b)

40. (a = b) And ((b = c) Or (a = c)); (a = b) Or ((b = c) And (a = c))

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ CSI - Section 5.2 – Decision Statements

Part I: Determine the output displayed in the text box when the button is clicked.

1. Private Sub btnDisplay\_Click(...) Handles btnDisplay.Click

Dim gpa As Double = 3.49

txtOutput.Clear()

If gpa >= 3.5 Then

txtOutput.Text = "Honors "

End If

txtOutput.Text &= "Student"

End Sub

1. Private Sub btnDisplay\_Click(...) Handles btnDisplay.Click

Dim change As Double = 356 'Amount of change in cents

If change >= 100 Then

txtOutput.Text = "Your change contains " & \_

Int(change / 100) & " dollars."

Else

txtOutput.Text = "Your change contains no dollars."

End If

End Sub

1. Private Sub btnDisplay\_Click(...) Handles btnDisplay.Click

Dim a, b As Double

a = CDbl(InputBox("Enter a number."))

b = CDbl(InputBox("Enter another number."))

If a > b Then

a += 1

Else

b += 1

End If

txtOutput.Text = a & " "& b

End Sub

(Assume the response is a = 5, b = 2.)

1. Private Sub btnDisplay\_Click(...) Handles btnDisplay.Click

Dim letter As String

letter = InputBox("Enter A, B, or C.")

If letter = "A" Then

txtOutput.Text = "A, my name is Alice."

ElseIf letter = "B" Then

txtOutput.Text = "To be, or not to be."

ElseIf letter = "C" Then

txtOutput.Text = "Oh, say, can you see."

Else

txtOutput.Text = "Not a valid letter."

End If

End Sub

(Assume the response is B.)

1. Private Sub btnDisplay\_Click(...) Handles btnDisplay.Click

Dim a As Double = 5

If (a > 2) And ((a = 3) Or (a < 7)) Then

txtOutput.Text = "Hi"

End If

End Sub

1. Private Sub btnDisplay\_Click(...) Handles btnDisplay.Click

Dim msg As String, age As Integer

msg = "You are eligible to vote"

age = CInt(InputBox("Enter your age."))

If age >= 18 Then

txtOutput.Text = msg

Else

txtOutput.Text = msg & " in "& (18 - age) & " years."

End If

End Sub

(Assume the response is 16.)

Part II: Identify the errors.

1. Private Sub btnDisplay\_Click(...) Handles btnDisplay.Click

Dim num As Double = 0.5

If (1 < num < 3) Then

txtOutput.Text = "Number is between 1 and 3."

End If

End Sub

1. Private Sub btnDisplay\_Click(...) Handles btnDisplay.Click

Dim num As Double = 6

If num > 5 And < 9 Then

txtOutput.Text = "Yes"

Else

txtOutput.Text = "No"

End If

End Sub

1. Private Sub btnDisplay\_Click(...) Handles btnDisplay.Click

If (2 <> 3)

txtOutput.Text = "Numbers are not equal"

End If

End Sub

1. Private Sub btnDisplay\_Click(...) Handles btnDisplay.Click

Dim major As String

major = "Computer Science"

If major = "Business" Or "Computer Science" Then

txtOutput.Text = "Yes"

End If

End Sub

1. Private Sub btnDisplay\_Click(...) Handles btnDisplay.Click

Dim numName As String, num As Double

numName = "Seven"

num = CDbl(InputBox("Enter a number."))

If num < numName Then

txtOutput.Text = "Less than"

Else

txtOutput.Text = "Greater than"

End If

End Sub

1. Private Sub btnDisplay\_Click(...) Handles btnDisplay.Click

'Display "OK" if either j or k equals 4

Dim j As Double = 2

Dim k As Double = 3

If j Or k = 4 Then

txtOutput.Text = "OK"

End If

End Sub

1. Private Sub btnDisplay\_Click(...) Handles btnDisplay.Click

'Is your program correct?

Dim query, answer1, answer2 As String

query = "Are you sure everything in your program is correct?"

answer1 = InputBox(query)

answer1 = answer1.ToUpper.Substring(0, 1)

If answer1 = "N" Then

txtOutput.Text = "Don't patch bad code, rewrite it."

Else

query = "Does your program run correctly?"

answer2 = InputBox(query)

answer2 = answer2.ToUpper.Substring(0, 1)

If answer2 = "Y" Then

txtOutput.Text = "Congratulations."

Else

txtOutput.Text = "Something you are sure about is wrong."

End If

End Sub