**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Chapter 4**

**Exercises 4.1**

In Exercises 1 through 34, determine the output displayed when the button is clicked

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

'Quote from Kermit

Quotation()

lstOutput.Items.Add ("Kermit the frog")

End Sub

Sub Quotation()

'Display a quotation

lstOutput.Items.Add("Time's fun when you're having flies.")

End Sub

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

lstOutput.Items.Add("Today")

WhatDay()

lstOutput.Items.Add("of the rest of your life.")

End Sub

Sub WhatDay()

lstOutput.Items.Add("is the first day")

End Sub

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

Question()

Answer()

End Sub

Sub Answer()

lstOutput.Items.Add("Since they were invented in the northern")

lstOutput.Items.Add("hemisphere where sundials go clockwise.")

End Sub

Sub Question()

lstOutput.Items.Add("Why do clocks run clockwise?")

lstOutput.Items.Add("")

End Sub

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

FirstName()

lstOutput.Items.Add("How are you today?")

End Sub

Sub FirstName()

Dim name As String

name = InputBox("What is your first name?", "Name")

lstOutput.Items.Add("Hello "& name.ToUpper)

End Sub

(Assume that the response is George.)

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

'The fates of Henry the Eighth's six wives

CommonFates()

lstOutput.Items.Add("died,")

CommonFates()

lstOutput.Items.Add("survived")

End Sub

Sub CommonFates()

'The most common fates

lstOutput.Items.Add("divorced")

lstOutput.Items.Add("beheaded")

End Sub

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

lstOutput.Items.Add("a rose")

Rose()

Rose()

End Sub

Sub Rose()

lstOutput.Items.Add("is a rose")

End Sub

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

'Good advice to follow

Advice()

End Sub

Sub Advice()

lstOutput.Items.Add("Keep cool, but don't freeze.")

Source()

End Sub

Sub Source()

lstOutput.Items.Add("Source: A jar of mayonnaise.")

End Sub

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

Answer()

Question()

End Sub

Sub Answer()

lstOutput.Items.Add("The answer is 9W.")

lstOutput.Items.Add("What is the question?")

End Sub

Sub Question()

'Note: "Wagner"is pronounced "Vagner"

lstOutput.Items.Add("Do you spell your name with a V,")

lstOutput.Items.Add("Mr. Wagner?")

End Sub

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

Piano(88)

End Sub

Sub Piano(ByVal num As Integer)

txtOutput.Text = num & " keys on a piano"

End Sub

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

'Opening line of Moby Dick

FirstLine("Ishmael")

End Sub

Sub FirstLine(ByVal name As String)

'Display first line

txtOutput.Text = "Call me "& name & "."

End Sub

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

'Beginning of Tale of Two Cities

Times("best")

Times("worst")

End Sub

Sub Times(ByVal word As String)

'Display sentence

lstOutput.Items.Add("It was the "& word & " of times.")

End Sub

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

Potato(1)

Potato(2)

Potato(3)

lstOutput.Items.Add(4)

End Sub

Sub Potato(ByVal quantity As Integer)

lstOutput.Items.Add(quantity & " potato")

End Sub

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

'Analyze a name

Dim name As String = "Gabriel"

AnalyzeName(name)

End Sub

Sub AnalyzeName(ByVal name As String)

'Display length and first letter

lstBox.Items.Add("Your name has "& name.Length & " letters.")

lstBox.Items.Add("The first letter is "& name.Substring(0, 1))

End Sub

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

Dim color As String

color = InputBox("What is your favorite color?")

Flattery(color)

End Sub

Sub Flattery(ByVal color As String)

txtOutput.Text = "You look dashing in "& color & "."

End Sub

(Assume that the response is blue.)

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

Dim num As Integer

num = CInt(InputBox("Give a number from 1 to 26."))

Alphabet(num)

End Sub

Sub Alphabet(ByVal num As Integer)

txtOutput.Text = "abcdefghijklmnopqrstuvwxyz".Substring(0, num)

End Sub

(Assume that the response is 5.)

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

Dim size As Double

size = 435

House(size)

lstOutput.Items.Add("of Representatives")

End Sub

Sub House(ByVal size As Double)

lstOutput.Items.Add(size & " members in the House")

End Sub

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

Dim num As Double

num = 144

Gross(num)

End Sub

Sub Gross(ByVal amount As Double)

txtOutput.Text = amount & " items in a gross"

End Sub

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

Dim a As String = "mile"

Acres(a)

End Sub

Sub Acres(ByVal length As String)

txtOutput.Text = "640 acres in a square "& length

End Sub

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

Dim candy As String

candy = "M&M's Plain Chocolate Candies"

Brown(candy)

End Sub

Sub Brown(ByVal item As String)

txtOutput.Text = "30% of "& item & " are brown."

End Sub

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

Dim annualRate As Double = 0.08

Balance(annualRate)

End Sub

Sub Balance(ByVal r As Double)

Dim p As Double

p = CDbl(InputBox("What is the principal?"))

txtOutput.Text = "The balance after 1 year is "& (1 + r) \* p

End Sub

(Assume that the response is 100.)

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

Dim hours As Double

hours = 24

Minutes(60 \* hours)

End Sub

Sub Minutes(ByVal num As Double)

txtOutput.Text = num & " minutes in a day"

End Sub

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

Dim a, b As String

a = "United States"

b = "acorn"

Display(a.Substring(0, 3) & b.Substring(1, 4))

End Sub

Sub Display(ByVal word As String)

txtOutput.Text = word

End Sub

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

Dim word As String

word = InputBox("Enter a word.")

T(word.IndexOf("t"))

End Sub

Sub T(ByVal num As Integer)

txtBox.Text = "t is the "& (num + 1) & "th letter of the word."

End Sub

(Assume that the response is computer.)

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

Dim states, senators As Double

states = 50

senators = 2

Senate(states \* senators)

End Sub

Sub Senate(ByVal num As Double)

txtBox.Text = "The number of U.S. Senators is "& num

End Sub

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

DisplaySource()

Database("Sybase SQL Server", 75633)

Database("Oracle", 73607)

Database("Windows CE", 73375)

Database("Microsoft SQL Server", 68295)

End Sub

Sub DisplaySource()

lstOutput.Items.Add("A recent salary survey of readers of")

lstOutput.Items.Add("Visual Basic Programmer's Journal gave")

lstOutput.Items.Add("average salaries of database developers")

lstOutput.Items.Add("according to the database used.")

lstOutput.Items.Add("")

End Sub

Sub Database(ByVal db As String, ByVal salary As Double)

lstOutput.Items.Add(db & " programmers earned "& \_

FormatCurrency(salary, 0) & ".")

End Sub

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

'Sentence using number, thing, and place

Sentence(168, "hour", "a week")

Sentence(76, "trombone", "the big parade")

End Sub

Sub Sentence(ByVal num As Double, ByVal thing As String, \_

ByVal where As String)

lstOutput.Items.Add(num & " "& thing & "s in "& where)

End Sub

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

Dim pres, college As String

Dim sr As IO.StreamReader = IO.File.OpenText("CHIEF.TXT")

pres = sr.ReadLine

college = sr.ReadLine

PresAlmaMater(pres, college)

pres = sr.ReadLine

college = sr.ReadLine

PresAlmaMater(pres, college)

sr.Close()

End Sub

Sub PresAlmaMater(ByVal pres As String, ByVal college As String)

lstBox.Items.Add("President "& pres & " is a graduate of "\_

& college & ".")

End Sub

(Assume that the four lines of the file CHIEF.TXT contain the following data: Clinton, Georgetown University, Bush, Yale University.)

**28.** Private Sub btnDisplay\_Click(...) Handles btnDisplay.Click

Dim name As String, yob As Integer

name = InputBox("Name?")

yob = CInt(InputBox("Year of birth?"))

AgeIn2010(name, yob)

End Sub

Sub AgeIn2010(ByVal name As String, ByVal yob As Integer)

txtBox.Text = name & ", in the year 2010 your age will be "\_

& (2010 yob) & "."

End Sub

(Assume that the responses are Gabriel and 1980.)

**29.** Private Sub btnDisplay\_Click(...) Handles btnDisplay.Click

Dim word As String, num As Integer

word = "Visual Basic"

num = 6

FirstPart(word, num)

End Sub

Sub FirstPart(ByVal term As String, ByVal digit As Integer)

txtOutput.Text = "The first "& digit & " letters are "\_

& term.Substring(0, digit) & "."

End Sub

**30.** Private Sub btnDisplay\_Click(...) Handles btnDisplay.Click

Dim statue As String, tons As Double

statue = "The Statue of Liberty"

tons = 250

HowHeavy(statue, tons)

End Sub

Sub HowHeavy(ByVal what As String, ByVal weight As Double)

txtOutput.Text = what & " weighs "& weight & " tons."

End Sub

**31.** Private Sub btnDisplay\_Click(...) Handles btnDisplay.Click

Dim word As String

word = "worldly"

Negative("un" & word, word)

End Sub

Sub Negative(ByVal neg As String, ByVal word As String)

txtOutput.Text = "The negative of " & word & " is " & neg

End Sub

**32.** Private Sub btnDisplay\_Click(...) Handles btnDisplay.Click

Dim age, yrs As Integer, major As String

age = CInt(InputBox("How old are you?"))

yrs = CInt(InputBox("In how many years will you graduate?"))

major = InputBox("What sort of major do you have "& \_

"(Arts or Sciences)?")

Graduation(age + yrs, major.Substring(0, 1))

End Sub

Sub Graduation(ByVal num As Integer, ByVal letter As String)

txtOutput.Text = "You will receive a B"& letter.ToUpper & \_

" degree at age "& num

End Sub

(Assume that the responses are 19, 3, and arts.)

**33.** Private Sub btnDisplay\_Click(...) Handles btnDisplay.Click

HowMany(24)

lstOutput.Items.Add("a pie.")

End Sub

Sub HowMany(ByVal num As Integer)

What(num)

lstOutput.Items.Add("baked in")

End Sub

Sub What(ByVal num As Integer)

lstOutput.Items.Add(num & " blackbirds")

End Sub

**34.** Private Sub btnDisplay\_Click(...) Handles btnDisplay.Click

txtOutput.Text = "All's"

PrintWell()

PrintWords(" that ends")

PrintWell()

txtOutput.Text &= "."

End Sub

Sub PrintWell()

txtOutput.Text &= " well"

End Sub

Sub PrintWords(ByVal words As String)

txtOutput.Text &= words

End Sub

In Exercises 35 through 38, find the errors.

**35.** Private Sub btnDisplay\_Click(...) Handles btnDisplay.Click

Dim n As Integer = 5

Alphabet()

End Sub

Sub Alphabet(ByVal n As Integer)

txtOutput.Text = "abcdefghijklmnopqrstuvwxyz".Substring(0, n)

End Sub

**36.** Private Sub btnDisplay\_Click(...) Handles btnDisplay.Click

Dim word As String, number As Double

word = "seven"

number = 7

Display(word, number)

End Sub

Sub Display(ByVal num As Double, ByVal term As String)

txtOutput.Text = num & " "& term

End Sub

**37.** Private Sub btnDisplay\_Click(...) Handles btnDisplay.Click

Dim name As String

name = InputBox("Name")

Handles(name)

End Sub

Sub Handles(ByVal moniker As String)

txtOutput.Text = "Your name is "& moniker

End Sub

**38.** Private Sub btnDisplay\_Click(...) Handles btnDisplay.Click

Dim num As Integer = 2

Tea(num)

End Sub

Sub Tea()

txtOutput.Text = "Tea for "& num

End Sub

Code the following program:

Write a program to compute tips for services rendered. The program should request the

person's occupation, the amount of the bill, and the percentage tip as input and pass this

information to a Sub procedure to display the person and the tip. A sample run is shown

in the following figure:

