Programming Logic – Beginning

Unit 4: Sequential Processing

In-Class Exercise Development Steps: Bowling

1. Create a new project called Bowling
2. Rename Form1.vb to frmBowling.vb (ensure the form is renamed as well)
3. Add the bowling icon to the form
4. Change the form's title bar to Bowling Results
5. Center the form on the screen
6. Using the screen layout from the design:
   a. Add a title label to the top of the form: lblLeagueName, Arial Black, 16, Blue, centered
   b. Add txtBowlerName and label
   c. Add txtGame1, txtGame2, txtGame3 with labels
   d. Insert dtpBowlDate before the score
   e. Add lblSeries with descriptive label (not autosize, single border)
   f. Add lblAverage with descriptive label (not autosize, single border)
   g. Add lblNextBowlDate with descriptive label (not autosize, single border)
   h. Add btnCalculate, btnClear, btnExit
   i. Add bowling image (autosize), picBowling
7. Code the Exit button. Add procedure documentation
8. Set the maximum length for each textbox to 3
9. Set the format of date picker to Short and resize
10. Experiment with the date picker checkbox (remove when done)
11. Create and document btnClear_Click
12. In btnClear_Click, clear all textboxes using 3 techniques
13. In btnClear_Click, clear output labels.
14. In btnClear_Click, set the DatePicker value to the current date.
15. In btnClear_Click, set focus to txtBowlerName
16. Set default (sample) values for output labels
17. Test btnClear_Click
18. If necessary, set Strict Data Typing for this project.
19. If necessary, set Strict Data Typing for all future projects.
20. In btnCalculate_Click declare variables to hold the bowling scores
21. In btnCalculate_Click declare variables to hold series and average
22. In btnCalculate_Click, declare a variable to store the bowling date
23. In the General Declarations (form-level) declare two constants GAMESPERSERIES and LEAGUENAME. Assign appropriate values to the constants.
24. In btnCalculate_Click, transfer textbox inputs to variables
25. In btnCalculate_Click, transfer the bowling date from the DatePicker to the date variable
26. In btnCalculate_Click, calculate the series total and average. Use the constant from step 9 where appropriate.
27. In btnCalculate_Click, calculate the date 14 days after the bowling date
28. In btnCalculate_Click, transfer the series and average variables to the appropriate labels.
29. In btnCalculate_Click, transfer the next bowling date to the appropriate label
30. In frmBowling_Load, create a variable to hold the league name (leagueNameWorking)
31. In frmBowling_Load, use string concatenation to change the league name to "League : " followed by the contents of the league name constant from step 9.
32. In frmBowling_Load, display the league name
33. In frmBowling_Load, set the default date picker value to today’s date
34. In frmBowling_Load, set the minDate value of the date picker to 9/1/2005
   Set the maxDate value to Today
35. Format the average for 2 decimal places. Run the program to verify the results (use 110, 110, 100 for the Games)
36. Format the average for 1 decimal place. Verify the results.
37. Format the next bowling date as a long date. Verify the results.
38. Format the next bowling date as a short date. Verify the results.
39. After displaying all results, set focus to the Clear button
40. Set the tab order of the form so textboxes and buttons are visited in a logical order.
41. Assign shortcut keys to all buttons
42. Make the Calculate button the form's Accept Button
43. Make the Clear button the form's Cancel Button
44. Ensure all shortcut keys, the Accept Button and the Cancel Button work
45. Anchor the label so it remains centered at the top of the screen regardless of the size of the form.
46. Anchor the exit button to the bottom, right of the form, clear and calc to bottom, left
47. Add the Welcome Screen form and About Screen form to the project.
48. Make the Welcome Screen the project's start up form.
49. Ensure the application doesn't end until the last form is closed
50. Modify the Welcome Screen to allow the user to start the program (show the main form) or exit the application.
51. Modify the bowling form to display the About screen as a dialog box.

52. Add a timer to Welcome Screen that automatically "clicks" the Start button after 6 seconds.
53. Add a timer to the bowling form that alternately hides and then shows the clipart every half second.
54. Add code to the picture's click event disable/enable the picture's flashing (enable/disable timer).

55. Add exception handling to the btnCalculate.Click event
56. Add application and form level documentation