# Homework – Week 3 – Programming

Name:

Question 3.1 - Write a program that reads in the temperature of water in a container (in Centigrade) and displays a message stating whether the water is frozen, boiling or neither.

## Designer file:

namespace Homework\_3.\_1

{

partial class Form1

{

/// <summary>

/// Required designer variable.

/// </summary>

private System.ComponentModel.IContainer components = null;

/// <summary>

/// Clean up any resources being used.

/// </summary>

/// <param name="disposing">true if managed resources should be disposed; otherwise, false.</param>

protected override void Dispose(bool disposing)

{

if (disposing && (components != null))

{

components.Dispose();

}

base.Dispose(disposing);

}

#region Windows Form Designer generated code

/// <summary>

/// Required method for Designer support - do not modify

/// the contents of this method with the code editor.

/// </summary>

private void InitializeComponent()

{

this.TBInput = new System.Windows.Forms.TextBox();

this.LBLOutput = new System.Windows.Forms.Label();

this.SuspendLayout();

//

// TBInput

//

this.TBInput.Location = new System.Drawing.Point(12, 12);

this.TBInput.Name = "TBInput";

this.TBInput.Size = new System.Drawing.Size(100, 20);

this.TBInput.TabIndex = 0;

this.TBInput.TextChanged += new System.EventHandler(this.TBInput\_TextChanged);

//

// LBLOutput

//

this.LBLOutput.AutoSize = true;

this.LBLOutput.Location = new System.Drawing.Point(118, 19);

this.LBLOutput.Name = "LBLOutput";

this.LBLOutput.Size = new System.Drawing.Size(127, 13);

this.LBLOutput.TabIndex = 1;

this.LBLOutput.Text = "Enter Water Temperature";

//

// Form1

//

this.AutoScaleDimensions = new System.Drawing.SizeF(6F, 13F);

this.AutoScaleMode = System.Windows.Forms.AutoScaleMode.Font;

this.ClientSize = new System.Drawing.Size(800, 450);

this.Controls.Add(this.LBLOutput);

this.Controls.Add(this.TBInput);

this.Name = "Form1";

this.Text = "Form1";

this.ResumeLayout(false);

this.PerformLayout();

}

#endregion

private System.Windows.Forms.TextBox TBInput;

private System.Windows.Forms.Label LBLOutput;

}

}

## Code file:

using System;

using System.Collections.Generic;

using System.ComponentModel;

using System.Data;

using System.Drawing;

using System.Text;

using System.Windows.Forms;

namespace Homework\_3.\_1

{

public partial class Form1 : Form

{

public Form1()

{

InitializeComponent();

}

private void TBInput\_TextChanged(object sender, EventArgs e)

{

if (Convert.ToDouble(TBInput.Text) > 100)

{

LBLOutput.Text = TBInput.Text + " is boiling";

}

else if (Convert.ToDouble(TBInput.Text) < 0)

{

LBLOutput.Text = TBInput.Text + " is frozen";

}

else

{

LBLOutput.Text = TBInput.Text + " is not frozen or boiling";

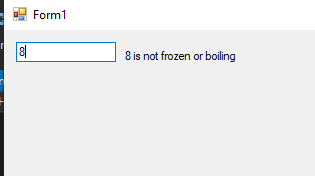
}

}

}

}

## Screenshot of running program:



Question 3.2 - Write a program that asks the user for the number of hours worked this week and their hourly rate of pay. The program is to calculate the gross pay. If the number of hours worked is greater than 40, the extra hours are paid at 1.5 times the rate. The program should display an error message if the number of hours worked is not in the range 0 to 60

## Designer file:

## Code file:

## Screenshot of running program:

Question 3.3 - Write a program that reads in an exam mark and display the relevant grade. The grade boundaries are:

0 to 40 marks          grade U

41 to 50 marks        grade E

51 to 60 marks        grade D

61 to 70 marks        grade C

71 to 80 marks        grade B

81 to 100 marks      grade A

## Designer file:

## Code file:

## Screenshot of running program:

Question 3.4 - Write a program that asks the user for a month number and displays the number of days that month has. Then extend this to include leap years. A leap year is a leap year if the year divides exactly by 4, but a century is not a leap year unless it is divisible by 400. For example, the year 1996 was a leap year, the year 1900 was not, but the year 2000 was a leap year. HINT: Use the operators DIV and MOD.

## Designer file:

## Code file:

## Screenshot of running program:

Question 3.5 - Write a program that accepts a date as three separate integers such as 12 5 03. The program should display the date in the form 12th May 2003.

## Designer file:

namespace Homework\_3.\_5

{

partial class Form1

{

/// <summary>

/// Required designer variable.

/// </summary>

private System.ComponentModel.IContainer components = null;

/// <summary>

/// Clean up any resources being used.

/// </summary>

/// <param name="disposing">true if managed resources should be disposed; otherwise, false.</param>

protected override void Dispose(bool disposing)

{

if (disposing && (components != null))

{

components.Dispose();

}

base.Dispose(disposing);

}

#region Windows Form Designer generated code

/// <summary>

/// Required method for Designer support - do not modify

/// the contents of this method with the code editor.

/// </summary>

private void InitializeComponent()

{

this.TBDay = new System.Windows.Forms.TextBox();

this.TBYear = new System.Windows.Forms.TextBox();

this.TBMonth = new System.Windows.Forms.TextBox();

this.BTNRun = new System.Windows.Forms.Button();

this.LBLOutput = new System.Windows.Forms.Label();

this.SuspendLayout();

//

// TBDay

//

this.TBDay.Location = new System.Drawing.Point(12, 12);

this.TBDay.Name = "TBDay";

this.TBDay.Size = new System.Drawing.Size(100, 20);

this.TBDay.TabIndex = 0;

//

// TBYear

//

this.TBYear.Location = new System.Drawing.Point(12, 64);

this.TBYear.Name = "TBYear";

this.TBYear.Size = new System.Drawing.Size(100, 20);

this.TBYear.TabIndex = 1;

//

// TBMonth

//

this.TBMonth.Location = new System.Drawing.Point(12, 38);

this.TBMonth.Name = "TBMonth";

this.TBMonth.Size = new System.Drawing.Size(100, 20);

this.TBMonth.TabIndex = 2;

//

// BTNRun

//

this.BTNRun.Location = new System.Drawing.Point(13, 91);

this.BTNRun.Name = "BTNRun";

this.BTNRun.Size = new System.Drawing.Size(75, 23);

this.BTNRun.TabIndex = 3;

this.BTNRun.Text = "Run";

this.BTNRun.UseVisualStyleBackColor = true;

this.BTNRun.Click += new System.EventHandler(this.BTNRun\_Click);

//

// LBLOutput

//

this.LBLOutput.AutoSize = true;

this.LBLOutput.Location = new System.Drawing.Point(119, 13);

this.LBLOutput.Name = "LBLOutput";

this.LBLOutput.Size = new System.Drawing.Size(63, 13);

this.LBLOutput.TabIndex = 4;

this.LBLOutput.Text = "The Date Is";

//

// Form1

//

this.AutoScaleDimensions = new System.Drawing.SizeF(6F, 13F);

this.AutoScaleMode = System.Windows.Forms.AutoScaleMode.Font;

this.ClientSize = new System.Drawing.Size(800, 450);

this.Controls.Add(this.LBLOutput);

this.Controls.Add(this.BTNRun);

this.Controls.Add(this.TBMonth);

this.Controls.Add(this.TBYear);

this.Controls.Add(this.TBDay);

this.Name = "Form1";

this.Text = "Form1";

this.ResumeLayout(false);

this.PerformLayout();

}

#endregion

private System.Windows.Forms.TextBox TBDay;

private System.Windows.Forms.TextBox TBYear;

private System.Windows.Forms.TextBox TBMonth;

private System.Windows.Forms.Button BTNRun;

private System.Windows.Forms.Label LBLOutput;

}

}

## Code file:

using System;

using System.Collections.Generic;

using System.ComponentModel;

using System.Data;

using System.Drawing;

using System.Text;

using System.Windows.Forms;

namespace Homework\_3.\_5

{

public partial class Form1 : Form

{

public Form1()

{

InitializeComponent();

}

public string dayAppend()

{

string Day = TBDay.Text;

if (Convert.ToInt32(Day) == 1)

{

Day = Day + "st";

}

else if (Convert.ToInt32(Day) == 2)

{

Day = Day + "nd";

}

else if (Convert.ToInt32(Day) == 3)

{

Day = Day + "rd";

}

else

{

Day = Day + "th";

}

return Day;

}

public string monthConversion()

{

switch(TBMonth.Text)

{

case "1":

return ("January");

break;

case "2":

return ("February");

break;

default:

return ("Not A Month Number");

break;

}

}

public string yearSubstring()

{

string year = (TBYear.Text).Substring(TBYear.Text.Length-2);

return year;

}

private void BTNRun\_Click(object sender, EventArgs e)

{

LBLOutput.Text = dayAppend() + " " + monthConversion() + " " + yearSubstring();

}

}

}

## Screenshot of running program:

Graphical user interface

Description automatically generated with low confidence