



## The Newport News Computer Challenge

March 6, 2002

Visual Basic Division

Problems 2002

### 1. "Time On Earth" (10 points)

Using information from the Time Zone Chart:

Allow the user to select two locations from the chart, using combo boxes for each. Next, allow the user to type in a time, using the format hh:mm AM/PM.

Output (you decide how) should be a sentence that says, "When it's [user's time] in [first location], it's [converted time] in [second location]."

Suppose the user selects Newport News and Kabul, and types 5:15 AM. Output would be: "When it's 5:15 AM in Newport News, it's 2:45 PM in Kabul."

Suppose the user selects Karachi and Caracas, and types 8:15 AM. Output would be: "When it's 8:15 AM in Karachi, it's 11:15 PM in Caracas."

Time Zone Chart

<i>Time</i>	<i>Location</i>
GMT-12:00	Eniwetok
GMT-11:00	Midway Island
GMT-10:00	Hawaii
GMT-09:00	Alaska
GMT-08:00	San Diego
GMT-07:00	Tucson
GMT-06:00	Dallas
GMT-05:00	Newport News
GMT-04:00	Caracas
GMT-03:30	Newfoundland
GMT-03:00	Buenos Aires
GMT-02:00	Mid-Atlantic
GMT-01:00	Azores
GMT	London
GMT+01:00	Amsterdam
GMT+02:00	Israel
GMT+03:00	Moscow
GMT+03:30	Tehran
GMT+04:00	Abu Dhabi
GMT+04:30	Kabul
GMT+05:00	Karachi
GMT+05:30	New Delhi
GMT+06:00	Dhaka
GMT+07:00	Hanoi
GMT+08:00	Beijing
GMT+09:00	Seoul
GMT+09:30	Adelaide
GMT+10:00	Sydney
GMT+11:00	New Caledonia
GMT+12:00	Auckland



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### **2. "Slot Machine" (20 points)**

You are to design a slot machine. When the user clicks a button displaying the word "Roll", the program randomly selects and displays any combination of three images from a total of six images that you select from Visual Basic's Assorted Bitmaps\*. A cumulative score is also displayed based on the rules below. Only selected images should be visible on your form.

One of the images (you decide) is the "loser". If that image appears, the player loses all money. (Be sure to indicate which image it is.)

Another of the images (you decide) is a "wild card". If that image appears, it can match with any other image except the "loser". (Be sure to indicate which image it is.)

Scoring is as follows:

loser is displayed - lose all money  
2 matches - win \$10 (unless loser is displayed)  
3 matches - Jackpot! win \$100 (can't be losers)  
all else, roll again



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### **3. "Make a Face" (30 points)**

The start up form contains, at minimum, a slider with values from 100 to 1000 and a drop-down combo box listing at least six colors. Labels appear appropriately.

The user can select a value using the slider and a color using the drop-down combo box, then click anywhere on the form any number of times. Each time the user clicks, a round smiley face is drawn whose radius is the value of the slider and whose eye color is the color selected in the drop-down combo box. The face should have two circles for eyes (filled with the eye color) and a semicircle for a mouth. Nothing more.

The face is to be implemented as a **class module** named **Face**.

Private data should be, at minimum, the coordinates of the center of the face, the radius, the eye color, and the container.

The class should have public properties (Get and Let) named **Radius** and **EyeColor** which allow the user to access and assign the private radius and eye color data.

The class should contain a minimum of three public methods (subs) as follows:

**SetContainer** should set the container variable to the form on which the face will be drawn.

**Locate** should accept two parameters which will be the coordinates of the point where the mouse is clicked.

**Draw** will contain the code to actually draw the face.

*Tips:* Base the location and radius of the eyes on some factor of the radius of the face. Do the same for the mouth. Remember to use your container variable with dot notation to draw the parts of the face and set the various properties.