

IST 256
Lab Week 15, Day 1, Monday, December 7, 2009

Exam Review, Part 1
(Both parts can be handed in on Wednesday.)

1. Two-Dimensional Arrays

a. Write the piece of code that would declare a two-dimensional array of Integers with 5 rows and 10 columns. The name of the array should be *numbers*.

b. Given the array declaration for *numbers* in the previous question, assume that you have the following code to assign a value to each element of the array:

```
For row = 0 to 4
  For col = 0 to 9
    numbers ( row, col ) = row + col
  Next
Next
```

After this coded is executed, give the values of the following array elements:

```
numbers ( 0, 0 )
numbers ( 2, 3 )
numbers ( 4, 4 )
```

2. Reading a File into an Array of Records and using it

a. Suppose that we have a file *Pictures.txt* that contains information about images. Each line has the name of an image, the name of the photographer, the number of prints sold and the type of medium (either C for color or B&W for black and white). An example file might look like:

Mountain,	Adams ,	40,	B&W
Workers,	Salgado,	31,	B&W
Flower ,	Mapplethorpe,	25,	C
Baseball,	Allen,	200,	C
Woman,	Lange,	38,	B&W

Write the code that declares a record structure suitable for each line of data from this file, i.e. each record should have a field for *imagenam*e, *photographer*, *numprints*, *medium*.

b. Write the declaration of a one-dimensional array of records of the type declared in the structure in part a. This array should have 12 elements.

c. Write the code that will read the file *Pictures.txt* and put the contents into the one-dimensional array of records declared in part b. It should also save the number of records read from the file.

d. After reading the file *Pictures.txt* into the array of records, the program should compute and display the total number of prints sold for photographers of color images and the total number of prints sold for photographers of black and white images. Each total should be displayed in a Label that should appear something like:

Total number of color images is 225

Total number of black and white images is 109

Write the code that will compute these totals and display them.

3. Procedure to swap variable contents:

Suppose that we want to write a Procedure that swaps two variables of type integer. Here is the procedure header:

Private Sub swap(ByRef x as Integer, ByRef y as Integer)

Write the rest of the procedure, that is, give the code that will swap the two variables x and y: