

**UNCA CSCI 107**  
**Ordinary Final Exam**  
4 May, 2015

This is a closed book and closed notes exam. It is to be turned in by 9:00 AM. This you can start working on the practical part of the exam which can be turned in by 10:30 AM.

Communication with anyone other than the instructor is not allowed during the exam. Calculators may be used during this exam, but cell phones and any other electronic or communication devices may not.

Name: \_\_\_\_\_

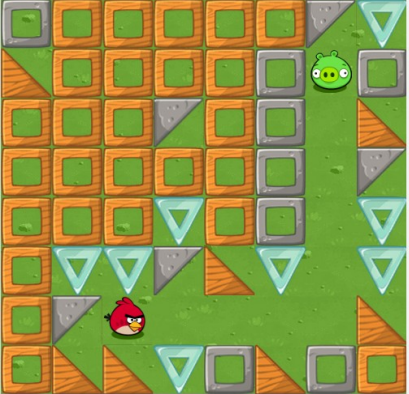
**Problem 1 (10 points) Database query**

Complete the following table to make a query for all customers from either Asheville, NC, or Ashland, KY. (Those are matches in the City and State fields.)

Field:	FirstName	LastName	City	State	Destination	CostPerPerson
Table:	CUSTOMER	CUSTOMER	CUSTOMER	CUSTOMER	CUSTOMER	CUSTOMER
Sort:						
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:						
or:						

**Problem 2 (10 points) Hour of code**

Describe how you might get the bird to the frog using the turn and move operators. Drawing the needed blocks would be nice.



Run

Blocks

move forward

turn left ↶

turn right ↷

repeat 5 times  
do

**Problem 3 (5 points)**

How many values can be encoded using 6 bits?

**Problem 4 (5 points)**

If you want to encode 12 possible values, how many bits are needed.

**Problem 5 (10 points) It's back...**

Programming can be complicated, but most programmers think there are three common elements of programming. One is sequencing. Name and describe the other two.

**Problem 6 (15 points)**

Suppose 20 seconds of music is sampled at the rate of 48000 samples per second. How many samples will be taken?

If the samples are digitized at a bit depth of 16 bits. How many bits will be generated.

If the encoded bits stream is stored in a file, what is the size of the file in kilobytes?

**Problem 7 (5 points)**

If a  $800 \times 1000$  image is encoded in color with separate 8-bit values for *each of the three* RGB color components (that's 24 bits per pixel), how many bits are needed to encode the image?

**Problem 6 (10 points)**

What physical structure of the human eye allows most people to see three different colors?

**Problem 7 (5 points)**

What is the HTML you would include in an HTML document to make the home page for UNC Asheville (stored using the URL <http://www.cs.unca.edu>) appear when you clicked on the phrase: "[My future alma mater](#)".

**Problem 8 (25 points)**

What is the purpose of the three CSS or JavaScript phrases found, and underlined, in examples shown on the next page? Write one or two sentences for each.

- p#parting
- var partingElement = document.getElementById("parting");
- setTimeout(changePartingBorderColor, 10000);

**The promised section of CSS**

```
/* The starter CSS */
h1 {
    text-align:center;
    color:green;
}

p#parting {
    border-width: medium ;
    border-style: solid ;
    border-color: red ;
}
```

**The promised section of JavaScript**

```
/* The starter JavaScript */
/*jslint browser:true */

function changePartingBorderColor() {
    'use strict';
    var partingElement = document.getElementById("parting");
    partingElement.style.borderColor = "purple";
}

function changePartingQuote() {
    'use strict';
    var partingElement = document.getElementById("parting");
    partingElement.innerHTML =
        "To be, or not to be: that is the question";
}

function startup() {
    'use strict';
    setTimeout(changePartingBorderColor, 10000);
    var partingElement = document.getElementById("parting");
    partingElement.onclick = changePartingQuote;
}

window.onload = startup;
```