CSE 1321 Lecture Final Exam 4A

Fall 2019

1. **DO NOT OPEN YOUR TEST UNTIL TOLD TO DO SO.**
2. Nothing may be on your desk except the exam, your photo ID (REQUIRED), and your writing utensil(s).
3. **THERE ARE FOUR (4) QUESTIONS AND AN EXTRA CREDIT QUESTION ON THIS TEST. CHECK EACH PAGE TO MAKE SURE YOU HAVE ALL QUESTIONS!**
4. Student has 110 minutes to complete the exam
5. Student MAY NOT use notes or books
6. **Please make sure to check the corresponding language box for each question:**
   1. Pseudocode answers should be clearly explained enough that a reader could take the answer and turn it into source code with minimal interpretation.
   2. Source code must be exact source code (include all required symbols, syntax, and indentation). It should be written to where a compiler would allow that code to run without any changes from the reader.
7. Student is not allowed any electronic devices (including but not limited to: earbuds, headphones, cell phones, tablets, laptops, watches, etc.) that can be used to look up or store answers.
8. If you’re wearing a hat with a brim, turn it backwards or remove it. You may not wear a hood.
9. All answers are to be your own, without the assistance of others
10. Partial credit will be given where appropriate
11. **You must put your KSU ID# (and only KSU ID#) on every page of the test after this cover page.**

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

Student KSU ID#\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Student NetID: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Student Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Question 1) Warmup question:** Create a 4 by 6 2D array of integers and populate it with random numbers between 0 and 100 using a random number generator. **(30 points)**

Answer is in: Pseudocode ⃝ C# ⃝ Java ⃝ C++ ⃝

**Extra Credit)** Draw a picture or tell us a joke **(1 point)**

**Question 2) 2D Arrays:** Utilizing the 2D array you created in the previous question, use the search algorithm of your choice to see if 42 appears in the array.Find all occurrences of 42 within the array and multiply them by two. If it does not appear print “Sorry, that value does not exist.” **(30 points)**

Answer is in: Pseudocode ⃝ C# ⃝ Java ⃝ C++ ⃝

**Question 3) Classes/Methods:** Imagine someone has written a CoffeePot class for you with the following methods (all attributes are private):

// Constructor

CoffeePot(parameters: podPresent(Boolean), ouncesOfWater(int), brewTime(int))

// Method1 – it fills the water compartment to 100 ounces to allow brewing

fillWater (parameters:none)

// Method2 – it increases the brewing time of the coffee by the value sent in.

IncreaseBrewStrength (parameters: timeInSeconds (int))

// Method 3 – Brews coffee if a podPresent == true, brewTime > 0 and ouncesOfWater > 0.

BrewCoffee (parameters: none)

**Keurig has asked you to help them by creating two CoffeePot Objects so they can test their new Keuring brewing machine before releasing it for Holiday sales. (5 points per object created successfully)**

**OBJECT CREATION**

Answer is in: Pseudocode ⃝ C# ⃝ Java ⃝ C++ ⃝

**Now you must call each method for the objects one time each in order (method 1, method 2 then method 3) (10 points total)**

**METHOD CALLS**

Answer is in: Pseudocode ⃝ C# ⃝ Java ⃝ C++ ⃝

**Question 4) Sorting:** Sort {55 65 60 72 45} into ascending order using the sorting algorithm of your choice (Bubble, Exchange, Insertion or Selection). You must show each movement of the sort and indicate your algorithm selection to get any credit (no need to write down the algorithm) **(20 points)**

Answer is using: Bubble ⃝ Exchange ⃝ Insertion ⃝ Selection ⃝