CS180

Test 7 – 8 December 2019

1. Indicate the value of each expression:
   1. 9 > 19 ? ‘c’ : ‘q’
   2. Given the initializations:

string feline = “cat”;

string canine = “DOG”;

the expression: feline > canine

* 1. (8 > 7 || 5 = 5) && 1.2 < 3.4

1. Write the definition of a function that finds and returns the position of the minimum value in an unsorted vector of int values. Do not write a prototype or any Javadoc, just the function itself.
2. State what a data type is, and list the names of two C++ data types
3. Write the Javadoc and the prototype of a function named **display\_values** that can be used to print all the values of an array of doubles for the positions that are currently on use. Do not write the function itself, only the Javadoc and Prototype. Then write a single statement that would appear in main that calls your function
4. Given the following code, draw a picture of memory when line 14 has just finished, and then show what would change by the time line 16 has just finished by lightly crossing out any previous values and showing the new values. Be sure to diagram the memory for both main and for **increment\_a\_value**. Finally, show the output when the coed is run to completion

1 int main()

2 {

3 int array[] {5, 6, 1, 7, 9};

4

5 increment\_a\_value(array, 0);

6 for (auto item : array)

7 {

8 cout << item << ‘ ‘;

9 }

10 cout << endl;

11 return 0;

12 }

13

14 void increment\_a\_value(int values[], size\_t position)

15 {

1. values[position]++;

17 }

1. Assuming that x and y are variables declared and initialized as doubles, write the fragment of code that you would use to determine whether they are equal.
2. State the fundamental difference of the while loop, do-while loop, for loop and foreach loop structure, and briefly explain how this affects the operation and use of those structures.
3. A file name data.txt exists on disk that continue exactly 200 integers. Write a fragment of C++ code that declares necessary variables and constants, reads the numbers from the file. And finds the smallest and largest values. Print the smallest and largest to the screen after all of the numbers have been read.
4. Write the bubble sort algorithm
5. Write selection sort algotithm
6. Write the linear search algorithm
7. Write the binary search algorithm
8. Convert decimal number 0 – 10 to binary number and hex number
9. create a structure and draw a picture of how it works, then use it to create the vectors and push back to the vectors.
10. Here is two structs:

Database database1{“I”, “wanna”, “get”, 100, “pass”, “final”, 180.0};

Database database2;

Now copy database1 to the database2 just use a single statement.

1. Compares whether the elements of two structures in the question 14 are equal or not.
2. Write a fragment of the code that can print the first struct in the question 14.
3. add 0x518 + 0xe9
4. subtract 0x4a6 − 0x1bf
5. Write the ASCII encoding list. (from the smallest to the biggest)
6. Write a fragment of code that can open a binary file with input and output mode.
7. Write a fragment of code that can write structure below to a binary file.

Record record{42342345, 23423434, 6757}

1. Write a fragment of code that can actually “convert” a C++ string to a C-string: