CS 180

Test 3 – 6 November, 2019

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.Given the following declaration, state what each output will be:

unsigned numbers[] {1, 2, 3, 4, 5};

1. cout << numbers[2];
2. cout << numbers[0] + 2;
3. int x = numbers[1];

x--;

numbers[4] = x;

cout << numbers[2] << ‘ ‘ << numbers[3] << ‘ ‘ << numbers[4];

3. Assume the following declarations have already been made:

int array1 [SIZE];

int array2 [SIZE];

and assume some code has already been run that fills array1 with data. Write a code fragment that will copy the entire contents of array1 into array2

4.Given the following array

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 3 | 4 | 7 | 11 | 14 | 16 | 23 |

Show the exact sequence of values taken on by the variable middle in searching for each of the. Following values, using binary search, for each values below

1. 2
2. 18
3. 7

5. Write the Javadoc, prototype, and definition of a function that accepts a measured length in inches and returns the equivalent length in centimeters. One inch equals 2.54 centimeters

6. 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

7. 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[] {3, 8, 9, 5, 4};

4

5 increment\_a\_value(array, 3);

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 {

16 values[position]++;

17 }