[Ravi Patel] Instructor: Dr. Thamira Hindo

[CPSC 230]

Chapter 7- Homework (20 points)

Due date: Friday midnight

Note: Submit your homework document in the inbox (chapter 7 HW).

Your name should be at the top left with the course code as above.

For the program code, write your code with clear comments + print out the output of the each program.

**Part1:**

1. What are the valid indexes for the array shown below?

int myArray[25]; **B**

* 1. 0-25
  2. **0-24**
  3. 1-25
  4. 1-24

1. Given an array named scores with 25 elements, what is the correct way to access the 25th element? **B**
   1. scores+25
   2. **scores[24]**
   3. scores[25]
   4. scores[last]
2. What is wrong with the following code fragment?

const int SIZE =5; **C**

float scores[SIZE];

for(int i=0; i<=SIZE;i++)

{

cout << "Enter a score\n";

cin >> scores[i];

}

* 1. Array indexes start at 1 not 0
  2. Arrays must be integers
  3. **Array indexes must be less than the size of the array**
  4. Should be cin >> scores[0];

1. Arrays are always passed to a function using **C**
   1. pass by value
   2. pass by reference
   3. **pass by array**
   4. you cannot pass arrays to a function
2. Which of the following function declarations correctly expect an array as the first argument? **F**
   1. void f1(int array, int size);
   2. void f1(int& array, int size);
   3. void f1(int array[100], int size);
   4. void f1(float array[], int size);
   5. All of the above
   6. **C and D**
   7. A and B
3. Which of the following function declarations correctly guarantee that the function will not change any values in the array argument? **D**
   1. void f1(int array[], int size) const;
   2. void f1(int array[], int size);
   3. void f1(int &array, int size);
   4. **void f1(const int array[], int size);**
   5. void f1(int array[], const int size);
4. The following function definition has an error in it. What line is this error on?

0. void f1(const double array[], int size) **C**

1. {

2. int i=0;

3. while(i< size)

4. {

5. array[i] += 2;

6. cout <<array[i];

7. i++;

8. }

9. }

* 1. 0
  2. 2
  3. **5**
  4. 6
  5. 2

1. Which of the following function declarations could be used to input data from the keyboard into the array? **A**
   1. **void input(int array[], int &numElements, int MAX\_SIZE);**
   2. void input(int array[], int numElements, int MAX\_SIZE);
   3. void input(int &array[], int numElements, int MAX\_SIZE);
   4. int array[] input(int array[], int &numElements, int MAX\_SIZE);

**Part 2:**

Q1 –

1. (4pts) Study the algorithm of selection sort. Then write a function to sort double array [20]. Write a main program to input the array, call the sort function and show the sorted array.
2. (2pts) What is the difference between the bubble sort algorithm and the selection sort one -
   1. **Selection sort is the sorting algorithm that starts by finding the smallest element in the list and swapping it with the first element, the process is repeated for the entire list by placing all the swapped elements in order. Bubble sort is the sorting algorithm that goes through the list repeatedly comparing different pairs in the array that are next to each other and sorting them. If they are the wrong order they are swapped to put them in the right order, and then the swapping is repeated until no more swaps are required.**

Q3- (6 pts)

Write a program to initialize a list of double from {9.5, 7.5, 7.0, 8, 10, 6, 10, 7, 8 , 9, 10, 8, 5, 8.5,9.5, 9.4,7.2,7.9,5.8, 9.5}.

These are your scores in test 2 for 20 students. Display two columns: the first column is the score item of the list and the second item is the number of occurrence of that item. The program should list the numbers from largest to smallest.