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[CPSC 230]

Chapter 9- Homework (20 points)

Note: Submit your homework document in the inbox (chapter 9 HW).

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

**Part 1 (8 pts.)**

1. Which of the following correctly declare 3 integer pointers? **C**
   1. int\* p1, p2, p3;
   2. int \*p1, p2, p3;
   3. **int \*p1, \*p2, \*p3;**
   4. all of the above.
2. Which of the following assigns to p1 the pointer to the address of value? **C**
   1. \*p1=&value;
   2. p1=value;
   3. **p1=&value;**
   4. &p1 = \*value;
3. What is the output of the following code fragment? **A**

int v1=2, v2=-1, \*p1, \*p2;

p1 = & v1;

p2= & v2;

p2=p1;

cout << \*p2 << endl;

* 1. **2**
  2. -1
  3. -2
  4. 1

1. Which of the following statements correctly prints out the value that is in the memory address that the pointer p1 is pointing to? **D**
   1. cout << &p1;
   2. cout << p1;
   3. cout << int\* p1;
   4. **cout << \*p1;**
2. Given that p1 is a pointer variable of the string class, which of the following are legal statements? **A**
   1. **p1 = new int;**
   2. cout << \*p1;
   3. p1 = new char[10];
   4. \*p1 = new string;
   5. B and D
3. What is the output of the following code fragment?

float \*p1; **A**

p1 = new float(3);

cout << \*p1;

* 1. **3.0**
  2. unknown, the address p1 points to is not initialized
  3. unknown, the code is illegal, p1 points to a dynamic array
  4. 0.0

1. What is the output of the following code? **C**

int \*p1, \*p2;

p1 = new int;

p2 = new int;

\*p1=11;

\*p2=0;

p2=p1;

cout << \*p1 <<" " << \*p2 << endl;

* 1. 11 0
  2. 0 11
  3. **11 11**
  4. 0 0

1. Which of the following correctly declares a user-defined data type that defines a pointer to a float? **B**
   1. float\* floatPtr ;
   2. **typedef float\* floatPtr;**
   3. typedef floatPtr \*float;
   4. typedef floatPtr\* float
2. Given that a typedef for IntPtr defines a pointer to an integer, what would be the correct declaration for a function that expects a reference to an integer pointer? **A**
   1. **void f1 (IntPtr& ptr);**
   2. void f1 (IntPtr&\* ptr);
   3. void f1 (IntPtr\*& ptr);
   4. All of the above
3. Which of the following correctly declares a dynamic array of strings? **C**
   1. p1 = new string(13);
   2. p1 = new string[];
   3. **p1 = new string[13];**
   4. p1 = new stringArray(13);
4. Given that p1 is an integer pointer variable, and a1 is an integer array, which of the following statements are not legal code? **D**
   1. p1= a1;
   2. cout << p1[0];
   3. cin >> p1[0];
   4. **a1 = p1;**
5. If p1 is an integer pointer that is pointing to memory location 1001, and an integer takes 4 bytes, then (p1+1) evaluates to: **C**
   1. 1002
   2. 1004
   3. **1005**
   4. Unknown

Part 2:

Q1- This program requires that you read the optional section about pointer arithmetic. Complete

the function isPalindrome so that it returns true if the string cstr is a palindrome (the same

backwards as forwards like “*madam”* or “*kayak”, a*nd false if it is not. The function uses

the cstring library.

Bool is Palindrome (char\* cstr)

{ char \* front= cstr;

char\* back= cstr+strl(cstr)-1;

while(front < back)

{ //complete code here

}

return true;

int main ( ) { char s1[50]=”neveroddoreven”;

char s1[50]=”not a palindrome”;

cout<< is Palindrome(s1) <<endl; // true

cout<< is Palindrome(s2) <<endl; //false

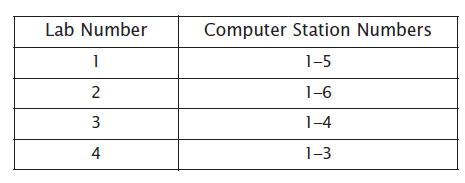
return 0;

}

Q2-

You run four computer labs. Each lab contains computer stations that are numbered as shown in the table

below



Each user has a unique five-digit ID number. Whenever a user logs on, the user’s ID, lab number, and the computer station number are transmitted to your system. For example, if user 49193 logs onto station 2 in lab 3, then your system receives (49193, 2, 3) as input data. Similarly, when a user logs off a station, then your system receives the lab number and computer station number. Write a computer program that could be used to track, by lab, which user is logged onto which computer. For example, if user 49193 is logged into station 2 in lab 3 and user 99577 is logged into station 1 of lab 4 then your system might display the following:

Lab Number Computer Stations

1 1: empty 2: empty 3: empty 4: empty 5: empty

2 1: empty 2: empty 3: empty 4: empty 5: empty 6:empty

3 1: empty 2: 49193 3: empty 4: empty

4 1: 99577 2: empty 3: empty

