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[CPSC 230]

Chapter 8- Homework (20 points)

Note: Submit your homework document in the inbox (chapter 8 HW).

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

**Part 1 (8 pts.)**

1. Which of the following declarations correctly creates a c-string that can hold the value “phonebook" **D**
   1. char s1;
   2. char s1[9];
   3. char s1=10;
   4. **char s1[10];**
2. To declare a c-string and initialize it to the value of “phonebook", **B**
   1. char s1=phonebook;
   2. **char s1[10]="phonebook";**
   3. c-string phonebook;
   4. char s1[10]=phonebook;
3. Which of the following will print out the value in str? **F**

char str[30];

cin >> str;

* 1. cout << str;
  2. for(int i=0;i<30;i++)

cout << str[i];

* 1. int i=0;

while(i<30 && str[i] != '\0')

cout << str[i];

* 1. All of the above
  2. A and B
  3. **A and C**

1. When the extraction operator is used to read data into a string, **A**
   1. **it skips all white spaces**
   2. it skips only new lines
   3. it reads everything on the line
   4. it reads as many characters that will fit into the c-string
2. If you want to read into a c-string, you must ensure that the user does not enter more characters than **C**
   1. The size of the c-string
   2. The size of the c-string + 1
   3. **The size of the c-string -1**
   4. It doesn't matter.
3. What is wrong with the following attempted c-string declaration and initialization?

char str1[5]={'a', 'b', ‘c'}; **C**

* 1. There are only 3 values in the braces
  2. The single quotes should be double quotes
  3. **The values do not constitute a c-string**
  4. nothing

1. How can you assign the value "toaster" to a c-string name str of size 10? **C**
   1. str="toaster;
   2. str=toaster;
   3. **strcpy(str,"toaster");**
   4. str.strcpy("toaster");
2. What is the difference between strcmp and strncmp? **B**
   1. No difference
   2. **they both compare, one expects an integer for the number of characters to compare.**
   3. one copies, the other compares
   4. They are in different libraries
3. strcmp(first, second) returns **A**
   1. **<0 if first < second, 0 if first == second, positive otherwise**
   2. true if first=second, false otherwise
   3. nothing, it's a void function
   4. >0 if first < second, 0 if first > second, <0 otherwise
4. What is wrong with the following code fragment? **C**

char str1[10]="Mark", str2[15]="What's my name";

strcpy(str1,str2);

* 1. Nothing
  2. str2 has white space in it
  3. **str1 does not have enough room**
  4. str2 does not have enough room

1. Which assignment statements will copy the value " toaster" into a string variable (str1)? **B**
   1. strcpy(str1,"toaster");
   2. **str1 = "toaster";**
   3. str1 = toaster;
   4. str1 += toaster;
2. What is the value of str after the following code? string str; **B**
   1. a garbage string
   2. **the empty string**
   3. the null character
   4. unknown
3. Which is the proper way to determine how many characters are in the string variable named str? **B**
   1. str.getLength()
   2. **str.length()**
   3. length(str)
   4. getLength(str)
4. The notation vector<Base\_Type> means that the vector is **B**
   1. an array
   2. **a template class**
   3. primitive data type
   4. all of the above
5. The base type for a vector can be **D**
   1. int
   2. float or double
   3. char
   4. **any data type**
6. Given the following code, what is the correct statement to insert the string str2 into str1, directly after the ‘d'? **A**

string str1="abcdefg"; string str2="ABCDE";

* 1. **str1.insert(4,str2);**
  2. str2.insert(4,str1);
  3. insert(str1,4)=str2;
  4. insert(str2,4)=str1;

**Part 2 (12 pts.)**

Q1- Write a program that will read in a line of text and output the number of words in the line and the number of occurrences of each letter. Define a word to be any string of letters that is delimited at each end by whitespace, a period, a comma, or the beginning or end of the line.

//CPSC 230 RAVI PATEL HW8 P2 Q1

#include <iostream>

using namespace std;

int main(int argc, char \*argv[]){

string user\_input;

cout << "Please enter a string of text: ";

getline(cin, user\_input);

int count[26] = {0}, i, wordCount = 0;

for(i = 0; i < user\_input.size(); i++){

if(((user\_input[i] >= 'a' && user\_input[i] <= 'z') || (user\_input[i] >= 'A' && user\_input[i] <= 'Z')) && (user\_input[i + 1] == '.' || user\_input[i + 1] == ',' || user\_input[i + 1] == ' '))

wordCount++;

if(user\_input[i] >= 'a' && user\_input[i] <= 'z')

count[user\_input[i] - 'a']++;

if(user\_input[i] >= 'A' && user\_input[i] <= 'Z')

count[user\_input[i] - 'A']++;

}

char x = user\_input[user\_input.size() - 1];

if(x != '.' && x != 'z' && x != ' ')

wordCount++;

cout << endl << wordCount << " words are in your string" << endl;

cout << "\nLetter Distribution: \n";

for(i = 0; i < 26; i++){

if(count[i] > 0) cout << count[i] << " " << (char)('a' + i) << endl;

}

}

**SAMPLE OUTPUT:**

**Please enter a string of text: Hello, my name is Ravi!**

**5 words are in your string**

**Letter Distribution:**

**2 a**

**2 e**

**1 h**

**2 i**

**2 l**

**2 m**

**1 n**

**1 o**

**1 r**

**1 s**

**1 v**

**1 y**

Q2- Write a function named SwapFrontBack that takes as input a vector of integers from text file, The function swap the first element in the vector with the last element in the vector.

Q3- Repeat Q2 If the elements of vector are strings.