

Quiz: Chapter 7 (string Type) and Chapter 8

Due Jul 17 at 11:59pm Points 100.16 Questions 32

Available until Jul 21 at 11:59pm Time Limit 64 Minutes

Allowed Attempts Unlimited

Instructions

This quiz consists of 32 questions from Chapter 8 and the string Type section of Chapter 7. You have 64 minutes to complete the quiz. You may retake this quiz as many times as you would like. You cannot use your textbook or any other materials, so make sure you are familiar with the content prior to taking the quiz.

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Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	37 minutes	97.03 out of 100.16

! Correct answers are hidden.

Score for this attempt: **97.03** out of 100.16

Submitted Jul 15 at 7:50pm

This attempt took 37 minutes.

Question 1

3.13 / 3.13 pts

Consider the following statements:

```
string str1 = "ABCDEFGHIJKLM";  
  
string str2;
```

What is the value of str2 after the following statement executes:

```
str2 = str1.substr(1,4);
```

"ABCD"

"BCDE"

"CDE"

"BCD"

Question 2

3.13 / 3.13 pts

The data type string has a named constant, _____, associated with it.

string::npos

string::pos

string::size_type

string::size

Question 3

3.13 / 3.13 pts

Suppose that str1, str2, and str3 are string variables. After the following statements execute, the value of str3 is "_____".

```
str1 = "abc";
```

```
str2 = "xyz";
```

```
str3 = str1 + '-' + str2;
```

- xyz
- xyz-abc
- abc
- abc-xyz

Question 4**3.13 / 3.13 pts**

In C++, [] is called the array subscript operator.

- True
- False

Question 5**3.13 / 3.13 pts**

Suppose str = "ABCDEFGHI". What is the output of the following statement?

```
cout << str.length() << endl;
```

- 9
- 7

8 10**Question 6****3.13 / 3.13 pts**

Considering the statement:

```
string str = "Gone with the wind";
```

What is the output of the following statement:

```
cout << str.find("the") << endl;
```

 11 9 10 12**Question 7****3.13 / 3.13 pts**

The length of the string "Hello There. " is ____.

 14 11 12

13**Question 8****3.13 / 3.13 pts**

What is the value of `alpha[2]` after the following code executes?

```
int alpha[5];
int j;

for (j = 0; j < 5; j++)
    alpha[j] = 2 * j + 1;
```

 5

Correct. The value of `alpha[2]` is computed as $\text{alpha}[2] = 2*2+1 = 4+1 = 5$.

 4 1 6**Question 9****3.13 / 3.13 pts**

Assume you have the following declaration

```
int beta[50];
```

Which of the following is a valid element of beta?

beta['50']

beta[0]

Correct. The valid index range for beta is 0 through 49. Thus, beta[0] is a valid element.

beta['2']

beta[50]

Question 10

3.13 / 3.13 pts

Consider the following statement:

```
int alpha[25][10];
```

Which of the following statements is true about alpha?

Rows of alpha are numbered 1...24 and columns are numbered 0...9.

Rows of alpha are numbered 0...24 and columns are numbered 1...10.

Rows of alpha are numbered 1...25 and columns are numbered 1...10.

Rows of alpha are numbered 0 . . . 24 and columns are numbered 0 . . . 9.

Correct. The two-dimensional array `int alpha[25][10];` has 25 rows numbered from 0 . . . 24 and 10 columns numbered from 0 . . . 9.

Question 11

3.13 / 3.13 pts

Arrays can be passed as parameters to a function by value, but it is faster to pass them by reference.

False

In C++, arrays are passed by reference only.

True

Incorrect

Question 12

0 / 3.13 pts

Suppose that `gamma` is an array of 50 components of type `int` and `j` is an `int` variable. Which of the following `for` loops sets the index of `gamma` out of bounds?

`for (j = 1; j < 50; j++)`

`cout << gamma[j] << " ";`

`for (j = 0; j <= 48; j++)`

`cout << gamma[j] << " ";`

Incorrect. The components of gamma are gamma [0], gamma [1], ..., gamma [49]. An array index j is valid for gamma if $0 \leq j \leq 49$. In this `for` loop, the array index variable j ranges from 0 to 48, and so this loop will not set the index of gamma out of bounds.

- ```
for (j = 0; j <= 49; j++)
 cout << gamma[j] << " ";
```
- 
- ```
for (j = 0; j <= 50; j++)  
 cout << gamma[j] << " ";
```

Question 13

3.13 / 3.13 pts

Consider the following statement:

```
double alpha[10][5];
```

The number of components of alpha is ____.

150

50

Correct. In the given two-dimensional array `double alpha[10][5];`, there are 10 rows and 5 columns. Thus, there are $10*5=50$ components in the array.

15

100

Question 14**3.13 / 3.13 pts**

Assume you have the following declaration

```
char nameList[100];
```

Which of the following ranges is valid for the index of the array nameList?

0 through 100

1 through 101

1 through 100

0 through 99

Correct. The valid range for the index of the array nameList is 0 through 99.

Question 15**3.13 / 3.13 pts**

After the following statements execute, what are the contents of matrix?

```
int matrix[3][2];
int j, k;

for (j = 0; j < 3; j++)
    for (k = 0; k < 2; k++)
        matrix[j][k] = j + k;
```

0 1
1 2

2 3

Correct. `matrix` is an array of 3 rows and 2 columns. The element in the j th row and k th column of `matrix`, `matrix[j][k]`, is set to $j + k$, i.e., `matrix[j][k] = j + k`. For example, `matrix[0][0] = 0 + 0 = 0`, `matrix[0][1] = 0 + 1 = 1`, and `matrix[2][1] = 2 + 1 = 3`. Therefore, the contents of `matrix` are:

0 1
1 2
2 3

1 1
2 2

3 3

0 1
2 3

4 5

0 0

1 1

2 2

Question 16

3.13 / 3.13 pts

When you pass an array as a parameter, the base address of the actual array is passed to the formal parameter.

True

When you pass an array as a parameter, the base address of the actual array is passed to the formal parameter.

 False**Question 17****3.13 / 3.13 pts**

The form of the `for` loop shown below is called a(n) _____ `for` loop.

```
for (dataType identifier : arrayName)
    statements
```

 range-based loop-based for-based**Question 18****3.13 / 3.13 pts**

What is the output of the following C++ code?

```
int alpha[5] = {2, 4, 6, 8, 10};
int j;

for (j = 4; j >= 0; j--)
{
```

```
    cout << alpha[j] << " ";\n}\n\ncout << endl;
```

10 8 6 4 2

Correct. The statement `int list[5] = {2, 4, 6, 8, 10};` declares `list` to be an array of five components and also initializes `list[0] = 2, list[1] = 4, list[2] = 6, list[3] = 8,` and `list[4] = 10.` In the `for` loop, the array index variable `j` is initialized to 4. After each iteration of the `for` loop `j` is decremented by 1, and so it ranges from 4 to 0 and outputs the `list` elements in the order `list[4], list[3], list[2], list[1], and list[0]` with a space between the numbers. Therefore, the output is: 10 8 6 4 2

8 6 4 2 0

4 3 2 1 0

2 4 6 8 10

Question 19

3.13 / 3.13 pts

Consider the statement

```
int list[10][8];
```

Which of the following is true about `list`?

- list has a total of 18 components.
- list has 8 rows and 10 columns.
- list has a total of 108 components.
- list has 10 rows and 8 columns.

Correct. The two-dimensional array list has 10 rows and 8 columns.

Question 20

3.13 / 3.13 pts

The array index can be any integer less than the array size.

- True
- False

An array index is any expression whose value is a nonnegative integer.

Question 21

3.13 / 3.13 pts

In row order form, the ____.

- first column is stored last
- first row is stored first

Correct. In row order form, the first row is stored first, followed by the second row, followed by the third row, and so on.

- first column is stored first
- first row is stored last

Question 22

3.13 / 3.13 pts

Given the following declaration:

```
int j;
int sum;
double sales[10][7];
```

which of the following correctly finds the sum of the elements of the fourth column of `sales`?

```
sum = 0;

for(j = 0; j < 10; j++)
    sum = sum + sales[j][4];
```

```
sum = 0;

for(j = 0; j < 10; j++)
    sum = sum + sales[j][3];
```

Correct. `sales` is a two-dimensional array of 10 rows and 7 columns. The rows are numbered 0 to 9 and the columns are numbered 0 to 6. The elements of the fourth column are `sales[j][3]`, where `j = 0 to 9`. Therefore, this code correctly finds the sum of the elements of the fourth column of `sales`.

```
sum = 0;  
  
for(j = 0; j < 7; j++)  
 sum = sum + sales[j][4];
```

```
sum = 0;  
for(j = 0; j < 7; j++)  
 sum = sum + sales[j][3];
```

Question 23

3.13 / 3.13 pts

Suppose `list` is a one-dimensional array of size 25, wherein each component is of type `int`. Further, suppose that `sum` is an `int` variable. The following `for` loop correctly finds the sum of the elements of `list`.

```
sum = 0;  
  
for (int i = 0; i < 25; i++)  
{  
    sum = sum + list;  
}
```

True

False

The value of the variable `list` is the base address of the array. Therefore, the statement `sum = sum + list;` is invalid. To correctly find the sum of the elements of `list`, replace this statement with `sum = sum + list[i];`. Note that `sum` is correctly initialized to 0 and the `for` loop variable `i` correctly ranges from 0 to 24.

Question 24**3.13 / 3.13 pts**

Given the following declaration:

```
int j;
int sum;
double sales[10][7];
```

which of the following correctly finds the sum of the elements of the fifth row of `sale`?

-
- ```
sum = 0;
for(j = 0; j < 10; j++)
```
- sum = sum + sales[5][j];
- 
- ```
sum = 0;
for(j = 0; j < 7; j++)
```
- sum = sum + sales[4][j];

Correct. `sales` is a two-dimensional array of 10 rows and 7 columns. The rows are numbered from 0 to 9 and the columns are numbered 0 to 6. The elements of the fifth row are `sales[4][j]`, where `j = 0` to 6. Therefore, this code correctly finds the sum of the elements of the fifth row.

-
- ```
sum = 0;
for(j = 0; j < 7; j++)
```
- sum = sum + sales[5][j];
- 
- ```
sum = 0;
for(j = 0; j < 10; j++)
```
- sum = sum + sales[4][j];

Question 25**3.13 / 3.13 pts**

Which of the following correctly declares and initializes `alpha` to be an array of four rows and three columns with the component type `int`?



```
int alpha[4][3] = {{0,1,2}, {1,2,3}, {2,3,4},  
{3,4,5}};
```

Correct. To initializing a two dimensional array, during declaration, the elements of each row are all enclosed within a set of curly braces and separated by commas and also the set of all rows is enclosed within curly braces. Thus, given statement declares and initializes `alpha` correctly.

- int alpha[4][3] = {0,1,2: 1,2,3: 2,3,4: 3,4,5};
- int alpha[4][3] = {0,1,2; 1,2,3; 2,3,4; 3,4,5};
- int alpha[4][3] = {{0,1,2} {1,2,3} {2,3,4}
{3,4,5}};

Question 26**3.13 / 3.13 pts**

Given the declaration

```
int list[20];
```

the statement

```
list[12] = list[5] + list[7];
```

updates the content of the 12th component of the array `list`.

True False

Because the index of the first component of an array is 0, `list[12]` is the 13th component of the array `list`. Therefore, the statement
`list[12] = list[5] + list[7];` updates the content of the 13th component of the array `list`.

Question 27**3.13 / 3.13 pts**

In C++, `[]` is called the array subscript operator.

 False True

In C++, the square bracket `[]` is referred to as the array subscript operator.

Question 28**3.13 / 3.13 pts**

What is the output of the following C++ code?

```
int list[5] = {0, 5, 10, 15, 20};  
int j;  
  
for (j = 1; j <= 5; j++)  
    cout << list[j] << " ";  
cout << endl;
```

5 10 15 20 0 5 10 15 20 20 Code results in index out-of-bounds

Correct. list is an array of 5 components and the components are list[0], list[1], list[2], list[3], and list[4]. In the for loop, the array index variable j is initialized to 1 and ranges from 1 to 5. When j = 5, list[5] does not exist, and so the index is out-of-bounds.

 0 5 10 15 20

Question 29

3.13 / 3.13 pts

Suppose that sales is an array of 50 components of type double. Which of the following correctly initializes the array sales?

```
for (int j = 1; j <= 49; j++)
```

 sales[j] = 0;

```
for (int j = 0; j <= 48; j++)
```

 sales[j] = 0.0;

```
for (int j = 0; j <= 49; j++)
```

 sales[j] = 0.0;

Correct. The valid index range for sales is 0 to 49. Therefore, this for loop correctly initializes the array sales.

```
for (int j = 1; j <= 50; j++)  
 sales[j] = 0;
```

Question 30

3.13 / 3.13 pts

Consider the following declaration:

```
char str[15];
```

Which of the following statements stores "Blue Sky" into str?

strcpy(str, "Blue Sky");

Correct. The statement strcpy(str, "Blue Sky"); uses the C-string function strcpy to store "Blue Sky" into str, which is correct.

str[15] = "Blue Sky";

str = "Blue Sky";

strcpy("Blue Sky");

Question 31

3.13 / 3.13 pts

In a two-dimensional array, the elements are arranged in a table form.

False

True

In a two-dimensional array, the array elements are arranged in rows and columns in a tabular form.

Question 32

3.13 / 3.13 pts

In C++, the null character is represented as ____.

" \0 "

" 0 "

' \0 '

Correct. In C++, ' \0 ' represents the null character.

' 0 '

Quiz Score: **97.03** out of 100.16