Midterm 2 Study Guide

Due No due date Points 25 Questions 25 Time Limit 30 Minutes Allowed Attempts Unlimited

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Attempt History

	Attempt	Time	Score
KEPT	Attempt 20	26 minutes	25 out of 25
LATEST	Attempt 20	26 minutes	25 out of 25
	Attempt 19	22 minutes	20 out of 25
	Attempt 18	30 minutes	23 out of 25
	Attempt 17	19 minutes	24 out of 25
	Attempt 16	21 minutes	24 out of 25
	Attempt 15	30 minutes	23 out of 25
	Attempt 14	22 minutes	24 out of 25
	Attempt 13	25 minutes	24 out of 25
	Attempt 12	30 minutes	22 out of 25
	Attempt 11	29 minutes	25 out of 25
	Attempt 10	30 minutes	20.17 out of 25
	Attempt 9	29 minutes	20 out of 25
	Attempt 8	29 minutes	20.5 out of 25
	Attempt 7	28 minutes	21 out of 25
	Attempt 6	24 minutes	21 out of 25
	Attempt 5	20 minutes	17.83 out of 25
	Attempt 4	30 minutes	17.67 out of 25
	Attempt 3	22 minutes	16 out of 25
	Attempt 2	16 minutes	16.17 out of 25
	Attempt 1	30 minutes	18.33 out of 25

① Correct answers are hidden.

Submitted Jun 29 at 4:51pm

Question 1	1 / 1 pts
In a <i>guarded</i> loop, the loop actions are always executed at least once.	
O True	
False	

Question 2	1 / 1 pts

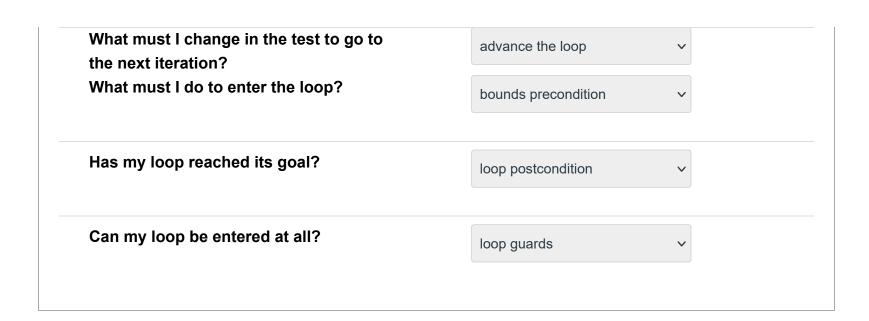
Question 3 1 / 1 pts

Below is the illustration from the loop building strategy. The *highlighted lines* represent. Add one to (or increment) the counter variable:

```
Given: the variable str is a string (may be empty)
Create the counter variable, initialized to -1
If the variable str has any characters then
    Set counter to 0
    Create the variable current-character as a character
    Place the first character in str into current-character
    While more-characters and current-character not a period
       Add one to (or increment) the counter variable
       Store the next character from str in current-character
    If current-character is a period then
       Add one to the counter to account for the period.
    Else
      Set counter to -2
If counter is -1 the string was empty
Else if counter is -2 there was no period
advancing the loop
goal precondition
loop bounds
bounds precondition
goal operation
loop postcondition
```

Question 4

Match each item with the correct question below.



Question 5	1 / 1 pts
A <i>guarded</i> loop is also known as a <i>test-at-the-top</i> loop.	
True	
O False	

Question 6	1 / 1 pts
Below is the illustration from the loop building strategy. The <i>highlighted lines</i> re While more-characters and current-character not a period:	present.
Given: the variable str is a string (may be empty) Create the counter variable, initialized to -1 If the variable str has any characters then { Set counter to 0 Create the variable current-character as a character Place the first character in str into current-character While more-characters and current-character not a period { Add one to (or increment) the counter variable Store the next character from str in current-character	
} If current-character is a period then Add one to the counter to account for the period. Else Set counter to -2 } If counter is -1 the string was empty Else if counter is -2 there was no period	
O goal operation	
O loop postcondition	
O bounds precondition	
O advancing the loop	
O goal precondition	
loop bounds	



1 / 1 pts **Question 7**

The highlighted section below illustrates:

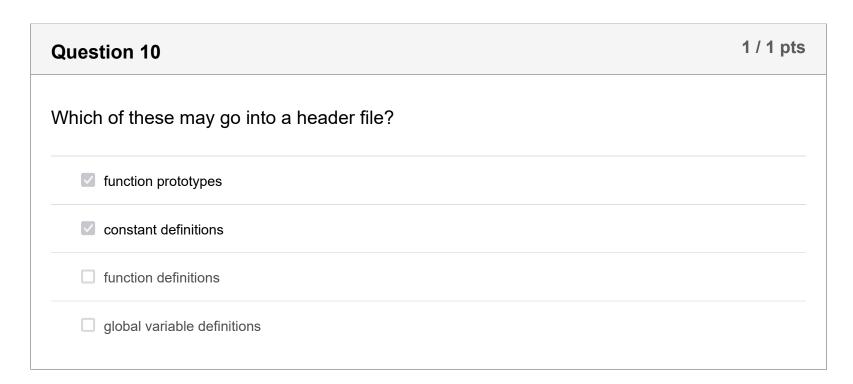
```
Given: the variable str is a string (may be empty)
Create the counter variable, initialized to -1
If the variable str has any characters then
    Set counter to 0
    Create the variable current-character as a character
    Place the first character in str into current-character
    While more-characters and current-character not a period
       Add one to (or increment) the counter variable
       Store the next character from str in current-character
    If current-character is a period then
       Add one to the counter to account for the period.
    Else
      Set counter to -2
If counter is -1 the string was empty
Else if counter is -2 there was no period
a necessary condition
a postcondition
a boundary condition
None of these
an intentional condition
a loop guard
```

```
1 / 1 pts
Question 8
How many times is this loop entered? (That is, how many times is i printed?)
  for (int i = 0; i < 10; i++)
cout << i;
  cout << endl;</pre>
   0 11
   10
   0 9
   Never
```

1 / 1 pts **Question 9**

Which line represents the *intentional bounds* in this loop?

```
string s("Hello CS 150");
1.
       while (s.size())
2.
3.
           if (s.at(0) == 'C') break;
4.
           s = s.substr(1);
5.
       }
6.
       cout << s << endl;</pre>
7.
   4
   None of these
   O 5
   O 2
```



Question 11	1 / 1 pts
To allow $f()$ to change the argument passed here, the parameter str should be deas:	eclared
<pre>void f(str); int main() { string s = "hello"; f(s); }</pre>	
○ const string&	
O string	
O const string	
\bigcirc It is not possible for $f()$ to change the argument passed here.	

Question 12	1 / 1 pts
In a library, the <i>interface</i> file:	
consists of function calls	
consists of instructions that produce the executable	
O None of these	
o consists of declarations or prototypes	
O consists of function definitions	



Question 13	1 / 1 pts
What kind of error is this?	
<pre>ex1.cpp:6:5: error: use of undeclared identifier 'a' a = 4; ^</pre>	
Linker error (something is missing when linking)	
Operating system signal or trap	
Compiler error (something is missing when compiling)	
O Syntax error (mistake in grammar)	
Runtime error (throws exception when running)	
Type error (wrong initialization or assignment)	
O None of these	

Question 14	1 / 1 pts
An <i>undeclared</i> error message is a compiler error.	
True	
O False	

Question 15	1 / 1 pts
What kind of error is this?	

ntation fault
Runtime error (throws exception when running)
None of these
Compiler error (something is missing when compiling)
Syntax error (mistake in grammar)
Linker error (something is missing when linking)
Type error (wrong initialization or assignment)
Operating system signal or trap



Question 16	1 / 1 pts
What kind of error is this?	
ex1.cpp:6:12: error: no viable conversion from 'int' to 'string' string a = 15; ^ ~~	
Operating system signal or trap	
Runtime error (throws exception when running)	
O None of these	
Linker error (something is missing when linking)	
O Syntax error (mistake in grammar)	
Type error (wrong initialization or assignment)	
O Compiler error (something is missing when compiling)	

Question 17	1 / 1 pts
A while loop is a hasty or unguarded loop.	
O True	
False	

Question 18	1 / 1 pts
Which of these <i>are not</i> state filters?	

~	copy a file
	print one sentence per line
	counting word transitions
	compress input by turning off echo when reading blank spaces
✓	search for a particular value in a stream
~	translating data from one form to another

```
Question 20 1 / 1 pts
```

Two quantities a and b are said to be in the *golden ratio* if $\frac{(a+b)}{a}$ is equal to $\frac{a}{b}$. Assuming a and b are line segments, the *golden section* is a line segment divided according to the golden ratio: The total length (a+b) is to the longer segment a as a is to the shorter segment b. One way to calculate the golden ratio is through the continued square root (also called an *infinite surd*): golden ratio = $\sqrt{1+\sqrt{1+\sqrt{1+\sqrt{1+\cdots}}}}$. In a recursive implementation of this function, what should be the *base case* for the recursion?

```
if (number <= 1) { return sqrt(number);}

if (number <= 1) { return 1.0;}

if (number <= 1) { return 0.0;}

if (number <= 1) { return pow(number, 2.0);}</pre>
```



Question 21	1 / 1 pts
When using cat with redirection, the program only stops running when you pre Control+D.	ss
O True	
False	

Question 22	1 / 1 pts
How can you ensure that a recursive function terminates?	
Provide a special case for the most complex inputs.	
Call the recursive function with more complex inputs.	
Provide a special case for the simplest inputs.	
O Use more than one return statement.	

Question 23	1 / 1 pts
Which command displays a the names of the files in a folder in reverse order?	
□ None of these	
✓ ls -r	
☐ ls wc -l	
☐ ls sort	
✓ ls sort -r	
☐ ls -r sort	

Question 24	1 / 1 pts
The cout object is an instance of the ostream class.	
True	
O False	



Question 25	1 / 1 pts
cat < a.txt > b.txt makes a copy of a.txt in the file b.txt	
True	
O False	

