Midterm 2 Study Guide

Due No due date

Points 25

Questions 25

Time Limit 30 Minutes

Allowed Attempts Unlimited

Take the Quiz Again

Attempt History

	Attempt	Time	Score
KEPT	Attempt 11	29 minutes	25 out of 25
LATEST	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 28 at 8:16pm



Question 2	1 / 1 pts
A <i>guarded</i> loop is also known as a <i>test-at-the-top</i> loop.	
True	
○ False	

Question 3	1 / 1 pts
Which of these is a <i>flow-of-control</i> statement?	
□ x++;	
□ int x;	
✓ while (x < 3)	

```
✓ for (auto e : s) ...

☐ int y{15};

✓ if (x < 3) ... else ...
</pre>
```

```
1 / 1 pts
Question 4
Below is the illustration from the loop building strategy. The highlighted lines represent.
Store the next character from str in current-character:
    Given: the variable str is a string (may be empty)
    Create the counter variable, initialized to {	ext{-}}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.
          Set counter to -2
    If counter is -1 the string was empty
Else if counter is -2 there was no period
   goal operation
   advancing the loop
   O bounds precondition
   O loop bounds
   loop postcondition

    goal precondition
```

Question 5	1 / 1 pts
In the classic <i>for</i> loop, which portion of code is not followed by a semicolon?	
O condition expression	
update expression	
initialization statement	
O None of these	

Question 6	1 / 1 pts
Below is the illustration from the loop building strategy. The <i>highlighted lines</i> represent. While more-characters and current-character not a period:	



```
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

    bounds precondition

loop bounds

    goal precondition

goal operation
loop postcondition
```

Question 7	1 / 1 pts
An <i>unguarded</i> loop is also known as a <i>test-at-the-top</i> loop.	
O True	
False	

Question 8		1 / 1 pts
Match each item with the correct statement below.		
Keeps processing input until a particular value is found in input.	sentinel loop	~
Keeps processing until the output gets no closer to the answer.	limit loop	~
Repeats its actions a fixed number of times	definite loop	~
Keeps processing until the input device signals that it is finished.	data loop	~

Question 9	1 / 1 pts
Below is the illustration from the loop building strategy. The <i>highlighted lines</i> 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
O bounds precondition

    loop postcondition

    goal precondition

advancing the loop
goal operation
O loop bounds
```

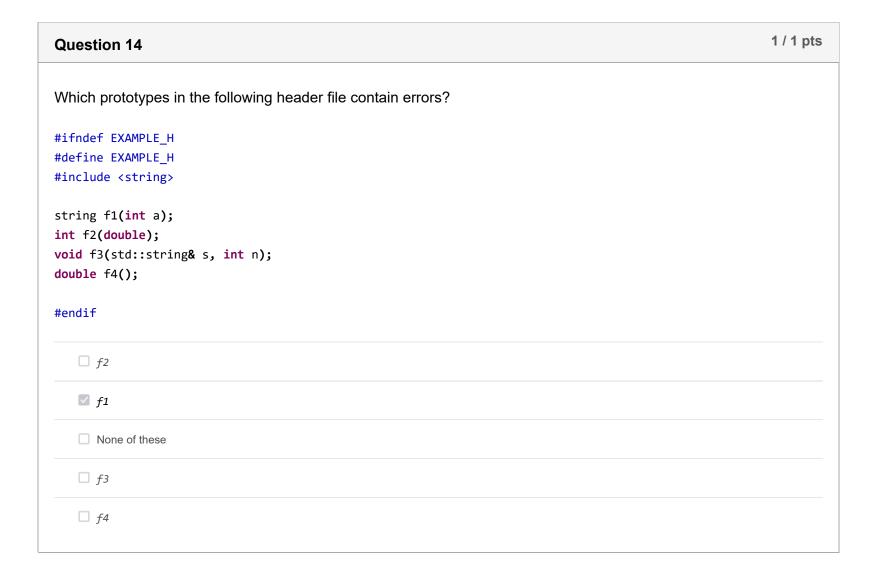
Question 10	1 / 1 pts
Header guards:	
☑ go in every interface file	
includes the directive #if	
go in every client file	
start with the directive #ifdef	
✓ includes the directive #define	
go in every implementation file	
end with the directive #endif	
start with the directive #ifndef	

Question 11	1 / 1 pts
Given the overloaded functions prototypes and the variable definition below, which of the function calls will compile?	I fail to
<pre>int f(int&); int f(const int&); int f(int, int); int a = 7;</pre>	
□ f(3)	
✓ None of these fail to compile	
☐ f(2.0);	
☐ f('a', 'b')	
☐ f(a);	



Question 12	1 / 1 pts
In a while loop, (condition) is followed by a semicolon.	
O True	
False	

Question 13		1 / 1 pts
Match each item with the correct statement below.		
End a block of source code	@endcode v	
Required to document functions, global variables and constants.	@file v	
Your name	@author v	
When was it created?	@date v	

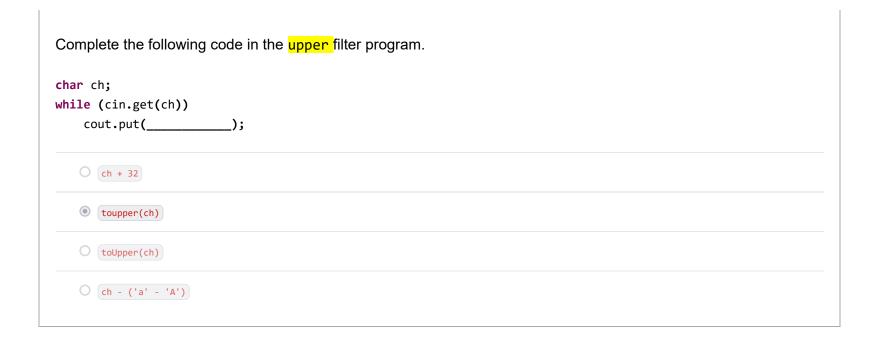


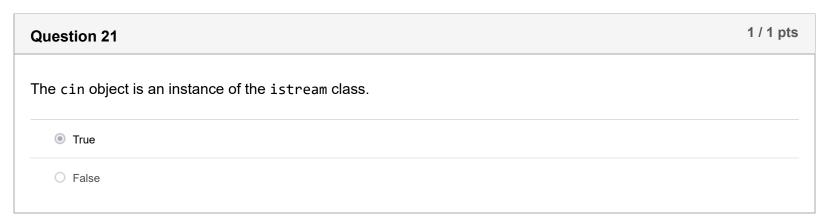


O 4321	
O 54321	
O Infinite loop	
Question 16	1 / 1 pts
An incomplete, yet compilable, linkable and executable function is called a?	
O None of these	
stub	
O prototype	
O declaration	
Question 17	1 / 1 pts
Which of these documentation tags are used in a <i>function comment?</i>	
☐ @file	
✓ @code	
<pre>@version</pre>	
Question 18	1 / 1 pts
Which line runs the dwk program and gets its input from a file named y.data?	
○ ./dwk >> y.data	
○ ./dwk y.data	
○ ./dwk << y.data	
○ ./dwk > y.data	
○ None of these	
Question 19	1 / 1 pts
The return value of the getline() function is an input stream object.	
True	
O False	









```
Examine the code below:

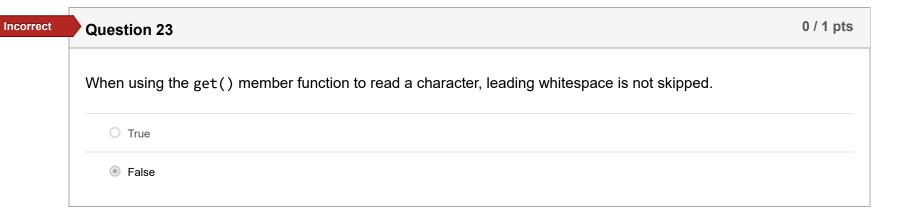
int mystery1(int n, int a, int b) {
   if (n == 0) return a;
   if (n == 1) return b;
   return mystery1(n - 1, b, a + b);
}

int mystery2(int n) {
   return mystery1(n, 0, 1);
}

mystery1 is a recursive helper
mystery1 is a recursive wrapper

The algorithm implemented is Fibonacci
if (n==1) is a base case

mystery2 is a recursive wrapper around the recursive helper mystery1. Together they implement the Fibonacci sequence in an efficient manner. mystery2 will not complete for any negative inputs.
```





1 / 1 pts **Question 24**

```
One remarkably simple formula for calculating the value of \pi is the so-called Madhava–Leibniz series: \frac{\pi}{4} =
1-\frac{1}{3}+\frac{1}{5}-\frac{1}{7}+\frac{1}{9}-\dots Consider the recursive function below to calculate this formula:
double computePI(int number)
    if (number <= 1) { return 1.0;}</pre>
    int oddnum = 2 * number - 1;
    return computesign(number) * 1.0 / oddnum
         + computePI(number - 1);
}
In this recursive function, what is the recursive base case?
   When the parameter variable is less than or equal to one

    When the parameter variable is zero

    O When the value that is returned from the function is zero
    O When the parameter variable is greater than one
```

Question 25	1 / 1 pts
The operating system stream stdin is connected to your monitor by default.	
O True	
False	