Midterm exam

This is a preview of the published version of the quiz

Started: Mar 30 at 1pm

Quiz Instructions

Question 1 **0 pts**

Honor Pledge

University of Maryland Honor Pledge: The University is committed to Academic Integrity, and has a nationally recognized Honor Code, administered by the Student Honor Council. In an effort to affirm a community of trust, the Student Honor Council proposed and the University Senate approved an Honor Pledge. The University of Maryland Honor Pledge Reads:

"I pledge on my honor that I have not given or received any unau
assistance on this examination (or assignment)"

Please write the exact wording of the Pledge, and sign it by typing your full name, in the space below:

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12pt Paragraph B I U A T²

p

0 words

Instructions

- The problems are of varying difficulty. The point value of each problem is indicated. Pile up the easy points quickly and then come back to the harder problems.
- You may only submit this quiz once, so make sure you answer all the questions before you do this.
- The quiz is not auto-graded. You will not receive your grade immediately after you finish the exam.
- This exam is OPEN BOOK. You may use any books or notes you like. Obviously, you may also use your computer.
- You may ask clarification questions on the Piazza message board. However, you are not allowed to post any information that would reveal your answer to the exam problems. If you are unsure, feel free to send us a private message on Piazza.
- While the exam quiz is open, you are not allowed to communicate with any of your classmates or to receive assistance from anybody other than the ENEE 140 instructors.

Good luck!

Question 2

10 pts

This problem tests your knowledge of **for** and **while** loops. Rewrite the following code using only ***for*** loops.

```
int main() {
    int distance = 150;
```

```
    int time = 0;
    int step = 30;

    while (distance > 0) {
        time = 0;
        step -= 2;
        printf("%d far away from target\n", distance);

        while (time < 20 && step > 5) {
            time++;
        }
        distance -= 10;
    }

    return 0;
}
```

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Question 3 15 pts

This problem tests your knowledge of **function prototypes**. write a function prototype for the three functions: *check_grade, get_bonus,* and *update_grade*.

```
int main() {
    int class = 140;
    float bonus = 0.0;
    char first_initial = 'B';
    char last_name[] = "Gates";

    if (check_grade(first_initial, last_name, class) == -1) {
        bonus = get_bonus(first_initial, last_name);
        update_grade(first_initial, last_name, 100.00);
    }

    return 0;
}
```

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Question 4 — 20 pts

This problem tests your knowledge of C functions and integer arithmetic. The following code should ask the user for an hour of day (0-23), and then ask the user for another number, *x*. The program prints out what our of day it will be *x* hours after the original time given. Fill in the blanks to make the code work properly. An example input/output is as follows:

Enter an hour of day (0-23): 9

Enter a delay time: 7

7 hours after 9, it will be 16 hours past midnight.

```
// FUNCTION PROTOTYPE

int get_answer(_____ x, int y); //


int main() {
    unsigned int hour = 0;
    int delay = 0;
    int answer = 0;

    printf("Enter an hour of day (0-23): ");

    scanf("%_", &hour); //


    printf("Enter a delay time: ");
    scanf("%d", &delay);


    _____ = get_answer(hour, delay); //


    printf("%d hours after %d, it will be %d hours past midnight.", delay, hour,
 answer);

    return 0;
}

// FUNCTION IMPLEMENTATION

int get_answer(/* HIDDEN */) {

return ______
```

```
}
```

Question 5

20 pts

This question tests your knowledge of debugging. The following code prompts the user for two integers and returns the greatest common divisor. There are several bugs that will prevent it from working as intended. Find and correct the bugs (there are 4 lines with bugs).

Example usage:

Entering 3 and 6 will print "The gcd of 3 and 6 is 3".

Entering 20 and 15 will print "The gcd of 20 and 15 is 5".

Entering 2 and 5 will print "The gcd of 2 and 5 is 1".

You may assume the inputs will be positive integers.

```
1 void find_gcd(){
2     int a, b, i;
3     int smaller_num, gcd = 1;
4     scanf("%s %s", a, b);
5 
6     if (a < b){
7         smaller_num = a;
8     } else {
9         smaller_num = b;
10    }
11 
12    for(i=0;i<=smaller_num;i++){
13        if (a/i == 0  && b/i == 0){
14            gcd = i;
15        }
16    }
17 
18    printf("The gcd of %d and %d is %d", gcd, a, b);
19 }
```

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Question 6

15 pts

This question tests your knowledge of program input/output and arithmetic in C. Observe the snippet below. It prompts the user for three inputs and prints three values.

This code prints "b 26 2" for a certain input. What is inputted to create this output?

```
int main() {

    int i, y = 2;
    char c;
    int a, b;

    scanf("%d %c %d", &a, &c, &y);
    b = a * 2 + 0.1;
    for (i = 3; i < 5; i++) {
        b += i;
    }

    printf("%c %d %d", c + 1, b * y, y);
```

```
    return 0;
}
```

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Question 7

20 pts

This question tests your knowledge of integer arithmetic and scanf.

Write a program that asks the user for a positive integer representing a quantity of seconds.
Convert the quantity of time in seconds to minutes and seconds (where seconds is less than 60).
(1 minute = 60 seconds).

Example 1:
Enter a number in seconds: 239
239 seconds is 3 minute(s) and 59 second(s).

Example 2:
Enter a number in seconds: 87
87 seconds is 1 minute(s) and 27 second(s).

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No new data to save. Last checked at 1:01pm Submit Quiz