Term test 1

Started: Feb 12 at 10:35am

Quiz Instructions

There are two parts to this test. This part of the test is 25 minutes long (plus 5 minutes for technical issues). Your work on this part will automatically be submitted when the time is up.

You can take a break between the two parts of the test.

The MarkUs portion of the test is 55 minutes long (plus 5 minutes for technical issues). For the MarkUs portion of the test you will download files from MarkUs, and it is your responsibility to upload the files within the time limit.

Remember that you are not permitted to discuss the test with anyone other than course staff while the test is running. You may want to leave group chats temporarily while you are writing the test.

Course staff will be monitoring Piazza for private messages. We will not be answering course content questions.

Question 1 — 4 pts

Given the following struct and variable definitions, give the type of each variable to make the following statements compile correctly.

```
struct ingredient {
    char label[30];
    int amount;
    char *unit;
};

struct ingredient *beans;
struct ingredient recipe[10];
```

struct ingredient ▾ x = *beans;

char * ▾ x = beans.unit;

char * ▾ x = recipe[2].unit;

Error x = *beans->amount;

Error x = &recipe[2].amount;

char x = recipe[1].unit[1];

char * x = beans[0].label;

Error x = *beans->unit;

Question 2 2 pts

Consider the following snippet of code. Assume LENGTH and OTHER are defined elsewhere in the code. Identify each of the following statements as either true or false:

```
char word[LENGTH];
char input[OTHER] = "Chaiman";
strncpy(word, input, ??);
```

True A correct third argument to `strncpy` is `LENGTH`

False A correct third argument to `strncpy` is `strlen(input) + 1`

False A correct third argument to `strncpy` is `OTHER`

False A correct third argument to `strncpy` is `LENGTH - strlen(input)`

False Even if the correct third argument is used, this statement will not produce the expected results because `word` is not initialized.

True The purpose of the third argument is to ensure that `strncpy` does not write past the space allocated for `word`.

False The purpose of the third argument is to ensure that the string copied to `name` is properly null-terminated.

Question 3 2 pts

Fill in the appropriate types for the function declaration so that a program including the code below would compile without error. (You do not need to implement the function.)

char * mystery(int x, char *** y, char z);

```
int rating[3] = {4, 5, 10};
char **items;
char name[30];
strncpy(name, mystery(rating[2], &items, name[10]), 29);
```

Question 4 2 pts

Using the dropdowns below, build the line that you would type into a bash shell to run the program `doit` that reads standard input from the keyboard and pipes its output to the program `filter` which takes the argument `cat`. Store the output of filter in a file called `output`.

If you don't need all of the dropdowns, use the first ones, and select "unused" for the ones you don't need.

doit	|
filter	cat
>	output

Quiz saved at 10:59am Submit Quiz