Post-Mortem

CS135 Winter 2024, Midterm

Question 1
— Almost no students got (b) correct. A majority missed the 3rd cons before 'b or missed the last empty
— Many students wrote "CS13" instead for (f)
— A large number of students didn’t point out it was an error for (c). instead they wrote empty

Question 2
— Calculates (not ...) first instead of a function
— Calculates (and ...) (or ...) in one step
— (or) remains instead of returning true; (and true) returns true directly

Question 3
— Common Q3abc errors include the wrong types for the "product" parameters such as using a symbol.
— Common Q3de errors include using (anyof Sym Str), had right clauses but wrong order

Question 4
Q4ab: Common Errors
— Thinking that Player or Game could be empty
— Writing listof instead of list

Q4c: Common Errors
— Very few students had their template consider all 4 parts of the game. Some accessed the fields partially, while many did not access the fields at all.
— A majority of students did not include a contract.
The function name usually was not descriptive enough. A common error was not making clear that the template was for a list.

Some students said the base case was empty.

Q4d: Common Errors

Many students mistakenly use length function, in some cases their own implementation of the function

I encountered many cases where they forgot to check whether the input is a list/cons or not

There were several cases where they did not check if it is an empty list or if there is 1 item in the list and jumped directly to checking for list of 2 items.

Question 5

Q5a: Common Errors

When checking if there are enough items in lop to sell, many student forgot to include the case when the number of product to be purchased in pr is exactly the same as the number of items left in lop (in which you would need to still update the list).

Many student forgot to cons (first lop) to the recursive call in the else condition.

Some student did not construct the list correctly if there were enough items to sell (i.e., lop was updated incorrectly).

Although no marks were taken off, note that because the product names are unique in lop, if enough items can be sold, the updated product simply can be cons-ed onto (rest lop) instead of a recursive call.

Q5b: Common Errors

Most students had something completely incorrect, where no recursion was being done.

Incorrectly using the earlier defined list “mylist” as part of their implementation

Incorrectly returning empty in the base case, or checking to see if both lists were empty in the base case.

Question 6

The majority of students didn’t use is-it from part one and tried to implement their own helper to do the same thing

When implementing the helper a lot of students don’t check if loc is empty before they call first on it

Some student use substring or check the first 1 or 2 characters only

Some students use string= or symbol= incorrectly to check a match with a code

Some students had an incorrect base case on code instead of loc
Question 7

— many students had the wrong base cases. A base case is needed for when \( n \) is zero and if the list is empty.

— many students did not check if \((\text{first lst})\) was an integer before checking if it was even.

— many students did not decrement \( n \) in their recursive call.

Question 8

— many students did not use a helper function that consumes the \((\text{first lst})\) as a parameter.

— many students tried comparing \((\text{first lst})\) and \((\text{second lst})\) in the main function, but this will lose track of the initial first element of the list when you recurse.