Post-Mortem
CS135 Fall 2023, Assignment 03

Question 2 (rgb.rkt)

General:

- Many students did not use accessor or helper functions to access the second and third elements of the list.

Part d: (valid-RGB?)

- Purpose statements are very well done in most cases.
- Many students used uppercase RGB as an identifier. Students should make sure that their parameter names abide by the style guide (lowercase letters with hyphens).
- Most students used the correct data types, but incorrect capitalization or abbreviations.
  - For example, use of anything instead of Any, or Boolean instead of Bool.
- Most students checked if the input was a list, but neglected to check if the list has exactly three elements.
- Some students only considered the cases when RGB values are 0 or 255, when it can also be any Nat in-between.

Part e: (RGB->hex)

- Many students did not consider to use RGB as the input in the contract, even though the data definition was given.
- Some students did not correctly represent the output list in the contract.
  - Common mistakes were forgetting the parentheses and mixing up list with listof.
- Some students only considered the cases when RGB values are 0 or 255, when it can also be any Nat in-between.
- Some students forgot to convert the numbers into strings, or used lowercase Hexadecimal letters.
Question 3 (robot.rkt)

Purpose:

- Some students only described how their code worked but not what the function in context of the problem is.
- General mistakes when naming the parameters:
  - Many students capitalized the first letter of "state"
  - Some students had parameter names not close to "state" and "command" at all
  - Some students had only one parameter

Contract: There were many errors with the contract; students rarely got full marks.

- Many students neglected the requirements section.
- Many students had some form of a list instead of "State", some of these students didn’t have the correct data types within the lists.
- Many students put "command" instead of the type "Sym" for the second input.
- Some students had incorrect requirements.
  - The most common one placed requirements on the direction within the State (’North, ’South, ’East, ’West) instead of on the Sym that is a part of the State.

Implementation:

- Most students did not use a helper function for accessing one or more of the elements in State.
- Most students did not define constants for the minimum and maximum coordinates of the robot.
- Some students did not check the boundaries.
- Some students were not turning their robot correctly.

Question 4de (sphere.rkt)

- Many students did not use distance-between-points as a helper function for both questions.
- In the contract for a Sphere, unless a Sphere data definition was created, many students forgot a requires statement to state that the radius must be greater than 0 (i.e., a valid Sphere).