Post-Mortem
Assignment 08
November 26, 2019

We normally publish the post-mortem for an assignment after it has been marked and released. Here is a list of common errors provided by the graders for assignment 8.

General

• Many students submitted code that did not run at all, hence they lost a great amount of correctness marks. You are advised to make sure your code runs.

• **Local functions also require a purpose and a contract.**

• All the functions in this assignment warrant 2-3 distinct examples. These should appear after the purpose and contract and before the function definition.

• Some students included intermediate values produced by a local helper function in the contract of the main function (e.g. $\text{FSObject} \rightarrow (\text{anyof Nat FSObject}) \rightarrow \text{Nat}$). There should be no difference in the contract for a function with a local helper and a function without any local definitions. Any intermediate values produced by the helper should be described in the contract of the helper.

Question 2

• This question was very well done!

Question 3a - Templates

• A vast majority of students did not include a contract for their template functions.

• Many students had missing ellipses in various locations in their templates.

• Some students did not name their templates $\text{fsobject-template}$ and $\text{listof-fsobject-template}$. **It is crucial that you name your functions exactly what we ask you to name them.**

• For $\text{fsobject-template}$, many students did not call $\text{listof-fsobject-template}$ on ($\text{dir-contents fsobject}$). Since the contents of the directory are defined to be a list of $\text{FSObject}$ and you were also asked to define a template for a function dealing with a list of $\text{FSObject}$, $\text{listof-fs-object-template}$ should be called on it as well. Some students compensated by writing the body of $\text{listof-fsobject-template}$ in $\text{fs-object-template}$, but then they were unable to properly handle the base case for when the contents were empty, thus that is an incorrect implementation. In general, do your best to make your templates as simple as possible.

• For $\text{fsobject-template}$, some students had the same selector functions for if the $\text{FSObject}$ was a $\text{File}$ and if it was a $\text{Dir}$, which is incorrect. Students are advised to be very careful when copy-pasting their own code and remember to make the appropriate changes in the pasted code.
• For listof-fsobject-template, some students forgot to include (first lo-fsobject) in their code.

• For listof-fsobject-template, many students forgot to call fsobject-template on (first lo-fsobject) in their code. Some students re-wrote the body of fsobject-template in (lo-fsobject-template) instead of passing (first lo-fsobject) into fsobject-template. While this is a correct template and no marks were deducted for it, students are advised to avoid repeating code and take advantage of previously-defined functions.

Question 3

• Many students only had one example for part (d).

• In part (d), some students had a requirement that was imposed on the result of the function (e.g. requires: the produced FSObject should not have any empty directories). Requirements can only be imposed on the arguments of a function, not on its produced result.

• Many students were unable to complete part (g).

• In part (g), some students used (list (listof Str)) instead of (listof (listof Str)). These two are not equivalent - a (list (listof Str)) is a list with only one element in it and that element is a list of strings (of arbitrary length) whereas a (listof (listof Str)) is a list of arbitrary length and each element in it is a list of strings (of arbitrary length as well).

Question 4

• Unfortunately, many students were unable to complete all or part of this question.

• Many students used (anyof Str Tag) in their contracts instead of HI. While this is still correct and no marks were deducted, HI is preferred since it is more succinct.

• Similarly, some students used (cons Sym (listof HI)) instead of Tag. No marks were deducted for this as well, but Tag is preferred.