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| (\* |
|  | CS 51 Problem Set 0 |
|  | Getting Started |
|  | \*) |
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|  | (\* This problem set is a short program that prints out a survey and, |
|  | if you wish, posts a message to a web server so that you can see |
|  | OCaml in action. Don't worry if you don't understand many of the |
|  | programming constructs used here. You'll become familiar with them |
|  | over the course of the semester. |
|  |  |
|  | To receive a key to enable posting your message, visit |
|  | <http://ps0.cs51.io/> and log in. |
|  | \*) |
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|  | (\*...................................................................... |
|  | Please define the eight variables below with appropriate values. Be |
|  | sure that these statements all type-check after editing them. You can |
|  | do this by typing "make all" in the terminal. \*) |
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|  | (\* 1. Replace FIRST and LAST with your first and last name \*) |
|  | let name : (string \* string) = ("FIRST", "LAST");; |
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|  | (\* 2. Replace "Other ..." in the line starting "let class\_year..." |
|  | with your current year in school, using one of the patterns shown |
|  | in the type definition for year below. For example, |
|  |  |
|  | let class\_year : year = FirstYear ;; |
|  |  |
|  | or |
|  |  |
|  | let class\_year : year = Other "HKS masters' student" ;; |
|  |  |
|  | \*) |
|  | type year = FirstYear | Sophomore | Junior | Senior | Other of string;; |
|  |  |
|  | let class\_year : year = Other "I haven't filled it in yet";; |
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|  |  |
|  | (\* 3. Replace "Other ..." in took\_cs\_50 with whether or not you took CS50, |
|  | \* with a pattern shown in the type definition for cs50 below. \*) |
|  | type cs50 = Took | DidNotTake | Other of string;; |
|  |  |
|  | let took\_cs\_50 : cs50 = Other "I haven't filled it out yet";; |
|  |  |
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|  |  |
|  | (\* 4. Replace "Other ..." in my\_system the operating system |
|  | \* of your computer. \*) |
|  | type system = Mac | Windows10 | Windows7 | Linux | Other of string;; |
|  |  |
|  | let my\_system : system = Other "I haven't filled it out yet";; |
|  |  |
|  |  |
|  |  |
|  | (\* 5. Replace the string below with a message to post to the problem |
|  | set website. \*) |
|  | let exciting : string = "I'm excited about ....!" ;; |
|  |  |
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|  |  |
|  | (\* 6. Set this variable to true if you want your information, |
|  | including the message in 1.g, to appear on |
|  | <http://ps0.cs51.io/responses>. Posting a message to the server is |
|  | optional, and is only available as an exercise to those students |
|  | who have an @college.harvard.edu email address (required for |
|  | authentication). All other students should leave the `post` flag |
|  | set to `false`. \*) |
|  | let post : bool = false;; |
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|  |  |
|  | (\* 7. Set this variable to the key you got from <http://ps0.cs51.io/> |
|  | under the "key" tab if you want your information to appear |
|  | there. \*) |
|  | let key : string = "";; |
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|  | (\* 8. Please complete the start-of-term survey for the course, |
|  | available at <http://section.cs51.io>. When you have completed the |
|  | survey, set this variable to true. \*) |
|  | let sectioned : bool = false;; |
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|  | (\*...................................................................... |
|  | Time estimate: Please give us an honest (if approximate) estimate of |
|  | how long (in minutes) this problem set took you to complete, including |
|  | both following the setup instructions and filling out this file, by |
|  | editing the line: |
|  |  |
|  | let minutes\_spent\_on\_pset () : int = failwith "not provided" ;; |
|  |  |
|  | to replace the value of the function with an approximate estimate of |
|  | how long (in minutes) the assignment took you to complete. For |
|  | example, if you spent about 3 hours on this assignment, you should |
|  | change the line to: |
|  |  |
|  | let minutes\_spent\_on\_pset () : int = 180 ;; |
|  |  |
|  | We care about your responses and will use them to help guide us in |
|  | creating future assignments. |
|  | ......................................................................\*) |
|  |  |
|  | let minutes\_spent () : int = failwith "not provided" ;; |
|  |  |
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|  | (\*...................................................................... |
|  | Wrapping up: Now that you've done all the steps above, you can type |
|  | the command |
|  |  |
|  | % make all |
|  |  |
|  | at the command line in a terminal window to compile this file. (This |
|  | command invokes "ocamlbuild", which is the smart OCaml compiler we use |
|  | in this course -- more on that later!) Then type |
|  |  |
|  | % ./ps0.byte |
|  |  |
|  | to run the program and print the output. Make sure all the values look |
|  | right, and then visit <http://ps0.cs51.io/responses> to see the |
|  | messages. If everything looks correct, and you're done modifying this |
|  | file, you should commit, push, and submit to Gradescope as described |
|  | in the problem set writeup. Then you're done! |
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|  | END OF PROBLEM SET 0 |
|  | ......................................................................\*) |
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|  | (\*====================================================================== |
|  | You shouldn't change anything below this line, but feel free to read |
|  | to the bottom of the file and try to figure out what is going on. \*) |
|  |  |
|  | let print = Printf.printf ;; |
|  |  |
|  | let convert\_survey () = |
|  | let first, last = name in |
|  | let string\_year = |
|  | match class\_year with |
|  | | FirstYear -> "2024" |
|  | | Sophomore -> "2023" |
|  | | Junior -> "2022" |
|  | | Senior -> "2021" |
|  | | Other s -> "Other: " ^ s in |
|  | let string\_cs50 = |
|  | match took\_cs\_50 with |
|  | | Took -> "I took CS50" |
|  | | DidNotTake -> "I did not take CS50" |
|  | | Other s -> "Other: " ^ s in |
|  | first, last, string\_year, string\_cs50, exciting, key ;; |
|  |  |
|  | let print\_survey (first, last, year, cs50, message, \_) = |
|  | (print "----------------------------------------\n"; |
|  | print "Name: %s %s\n\n" first last; |
|  | print "Year: %s\n\n" year; |
|  | print "50?: %s \n\n" cs50; |
|  | print "%s\n\n" message; |
|  | print "----------------------------------------\n\n";) ;; |
|  |  |
|  | let post\_survey s = |
|  | let first, last, year, cs50, message, key = s in |
|  | let open Nethttp\_client.Convenience in |
|  | let mbody = ["first", first; |
|  | "last", last; |
|  | "year", year; |
|  | "cs50", cs50; |
|  | "message", message; |
|  | "key", key] in |
|  | let url = "http://pset0.herokuapp.com" in |
|  | let open Yojson.Basic in |
|  | http\_post url mbody |
|  | |> fun x -> from\_string x |
|  | |> Util.member "status" |
|  | |> fun x -> to\_string x |> print "%s\n"; |
|  | print\_survey s ;; |
|  |  |
|  | let s = convert\_survey () in |
|  | s |
|  | |> if post then post\_survey else print\_survey ;; |