

The **focus** of this homework assignment getting up and running with the *RARSM*¹ RISC-V assembler and simulator, related tools and concepts (e.g., standard input-output streams), and the packaging and submission procedures. This material is very well covered in the first 15 or so pages of the *RVAP*² textbook.

With the above focus being primary, the **main programming task** is secondary and so quite simple: a slightly enhanced hello-world style of program. In particular, the program, called `hw01`, should print three questions on standard output and read in the corresponding three answers from standard input, followed by a summary of what was read. In more detail, the questions are³ 1. What is your name? 2. What is your quest? 3. What is your favorite color? After reading the corresponding answers from standard input, the program should print to standard output a summary in the following format, assuming the responses were *Inigo Montoya, Vengeance for my father! Prepare to die!!!*, and *Do you want that in HSV or RGB?*:⁴

```
Name: Inigo Montoya
Quest: Vengeance for my father! Prepare to die!!!
Color: Do you want that in HSV or RGB?
```

Input-output: The `hw01` program should read its input from the *standard input* stream and write its output to the *standard output* stream. Optional diagnostics may be written to the *standard error* stream. It is very important that the program read its input only from the standard input stream and that it write nothing except the specified output to the standard output stream.

The **submission** consists of an single electronic package that contains the **source** code, following the submission procedure described in class and on the class discussion forum. *Using the **discussion forum** to clarify details of both the main program and the submission format and procedures is an important part of this homework.* Packaging and documentation of code are worth a very significant portion of the grade. Use the *gzipped tar* (strongly preferred) or *zip* formats to package your submission. Name the electronic submission using the template

```
cos235-hw01-lastname-firstname-pqrs.tgz
```

where *lastname* and *firstname* are replaced by the obvious and *pqrs* is replaced by a 4-*digit* string of your choosing. (Replace `.tgz` with `.zip` if you use zip instead of tar for packaging.) The submission should be designed so that the command

```
tar xzf cos235-hw01-lastname-firstname-pqrs.tgz
```

results in the creation of a directory `cos235-hw01-lastname-firstname-pqrs`. In that directory should be all the source code (organized in further sub-directories as needed) as

¹Jean Privat and others, RARSM—RISC-V Assembler and Runtime Simulator (iMproved), <https://github.com/rarsm/rars>, 2024.

²Robert Winkler, *RISC-V Assembly Programming* (Robert Winkler, 2024).

³Optional: https://en.wikipedia.org/wiki/Monty_Python_and_the_Holy_Grail

⁴Optional, with apologies for the hash: https://en.wikipedia.org/wiki/Inigo_Montoya

well as a README file with the usual semantics. *Do not submit any kind of non-source files* (results of compilation, etc.).

You are welcome to use any inanimate **resources** (e.g., books, Web sites, publicly available code) to help you with your work. However, *all such help must be clearly noted* in your submissions. Further, no matter what you use, *you must be able to explain, in detail, how it works*. (You may be called upon to explain your homework individually.) Refer to the class policy for details, and ask for clarifications if you are unsure if something is allowed.