You should **submit** an single electronic package that contains the **source** files for your work on the programming questions, following a procedure similar to that used for the previous homework. The rules for using outside resources are also similar to those in that homework.

Your implementation must use **clean, portable Python 3** that minimizes dependencies on OS, version (beyond 3.x), etc. (If in doubt, please ask.) Packaging and documentation of code are worth a very significant portion of the grade. This homework centers on **extending the** `calc.py` example (which is included with PLY and has been discussed extensively in class) as follows.

1. It should not print any prompts; rather, the only outputs are the results of evaluation of the input.
2. It should support real numbers, in addition to integers, represented in the conventional manner (e.g., 3.1415, 602.3).
3. It should support *div* and *mod* operators with the usual semantics with operator tokens `//` and `%`, respectively.
4. Operations on integers should produce integers as outputs unless the result cannot be represented as an integer. Thus, `2 + 3` should produce `5` and not `5.0`, while `3/2` should produce `1.5`.

Input-output: The 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 in put stream and that it write nothing except the specified output to the standard output stream. In particular, there should be no prompts or informational messages printed to standard output.

The **input** consists of the calculator language of calc.py as discussed in class, extended to support the above features. The **output** consists of (only) the values of stand-alone expressions (excluding expressions that are part of an assignment statement) in the input. The output for a statement must be produced as soon as the statement appears in the input stream (before waiting for or reading any further input that may appear). There is exactly one (i.e. a unique) output for any given input (but there may be multiple inputs resulting in the same output). If two outputs for the same input differ by even a single character/byte then at least one of them is incorrect. Sample inputs and outputs should be discussed on the class discussion forum.

Submission: The packaging and submission procedure is similar to that used for the previous homework, with `hw01` replaced by `hw02` in the file name. As before, use the class discussion forum (ask questions) for further details and clarifications.

Reminders: Be sure to follow the policies in the syllabus, especially items related to the use of generative AI and other resources. Also, readability and organization of code is very important. Ask for clarifications if needed.