

Assignment 1 – Pass the Pigs

Your Name

CSE 13S – Spring 2023

Purpose

Audience for this section: Pretend that you are working in industry, and write this paragraph for your boss. You are answering the basic question, “What does this thing do?”. This section can be short. A single paragraph is okay.

Do not just copy the assignment PDF to complete this section, use your own words.

How to Use the Program

Audience: Write this section for the user of your program. You are answering the basic question, “How do I use this thing?”. Don’t copy the assignment exactly; explain this in your own words. This section will be longer for a more complicated program and shorter for a less complicated program.

To show “verbatim” text within a paragraph, you can use `\verb|text|`, which will look like this: `text`.

For a verbatim block, use `\begin{verbatim}` and `\end{verbatim}`, which will look like this:

Here is some verbatim text.

And if you want a box around the verbatim text, then use `\begin{Verbatim}[frame=single]` and `\end{Verbatim}` (notice the capital V), which will look like this:

Here is some framed verbatim text.

Want to make a footnote? Here’s how.¹

Do you need to cite a reference? You do that by putting the reference in the file `bibtex.bib`, and then you cite your reference like this[1][2][3].

Program Design

Audience: Write this section for someone who will maintain your program. In industry you maintain your own programs, and so your audience could be future you! List the main data structures and the main algorithms. You are answering the basic question, “How is this thing organized so that I can have a chance of fixing it?”. This section will be longer for a more complicated program and shorter for a less complicated program.

Data Structures

Describe your data structures here.

¹This is my footnote.

Algorithms

Want to show some pseudocode? Use the framed verbatim text shown above.

```
bubble sort algorithm
  loop from i = 0 to n - 1
    loop from j = i + 1 to n - 1
      if a[i] > a[j] then
        swap a[i] and a[j]
```

Function Descriptions

For each function in your program, you will need to explain your thought process. This means doing the following

- The inputs of every function (even if it's not a parameter)
- The outputs of every function (even if it's not the return value)
- The purpose of each function, a brief description about a sentence long.
- For more complicated functions, include pseudocode that describes how the function works
- For more complicated functions, also include a description of your decision making process; why you chose to use any data structures or control flows that you did.

Do not simply use your code to describe this. This section should be readable to a person with little to no code knowledge.

Results

Audience: Write this section for the graders. If you completed only part of the assignment, explain that here.

To write this section, use your code according to its intended purpose. Does it successfully achieve everything it should? Is anything lacking? Could anything be improved? Talk about all of that here, and use your code's output to prove it.

You can include screenshots of program output, as I have in Fig. 1.

References

- [1] Wikipedia contributors. C (programming language) — Wikipedia, the free encyclopedia. [https://en.wikipedia.org/wiki/C_\(programming_language\)](https://en.wikipedia.org/wiki/C_(programming_language)), 2023. [Online; accessed 20-April-2023].
- [2] Robert Mecklenburg. *Managing Projects with GNU Make, 3rd ed.* O'Reilly, Cambridge, Mass., 2005.
- [3] Walter R. Tschinkel. Just scoring points. *The Chronicle of Higher Education*, 53(32):B13, 2007.

```
veenstra@arm128:~/s23/13s-cse/resources/asgn1$ ./pig_arm
Number of players (2 to 10)? 0
Invalid number of players. Using 2 instead.
Random-number seed? 3
Margaret Hamilton
  rolls 15, has 15
  rolls 5, has 20
  rolls 0, has 20
Katherine Johnson
  rolls 0, has 0
Margaret Hamilton
  rolls 5, has 25
  rolls 0, has 25
Katherine Johnson
  rolls 0, has 0
```

Figure 1: Screenshot of the program running.