





## Elevator Simulation Grading Procedure

Fill in a checksheet for each student. Since you'll be doing demos for most of these, it's probably best to just fill in a hardcopy checksheet. Save those to return to the relevant instructor.

Assuming the student is doing a demo:

- Download the student's archive file from the server.
- Have the student unzip his/her archive and show you their final design document. Evaluate that.
- Have the student show you a couple of source files and evaluate their internal documentation.
- Take a look at the overall source file structure (the Visual display is useful here) and decide if it's reasonable and if it conforms to the design.
- Have the student build an executable. If the build fails, and the student can't fix the problem immediately, then they probably get 0/55 on the Program Operation section.
- Have the student execute the program on the supplied input file.
- Verify the use of a command-line argument (trivial).
- Check the simulation displays at the indicated times. Each is worth 8 points; I'd take off 2 points for each incorrect value.
- Check the final stats display. This is worth 10 points, and I'd take off 3 points for each incorrect value, with a ceiling of 10 points off.
- Note any runtime errors under Other Adjustments.

Make useful comments in the comment sections of the checksheet. When errors occur in the display/stats values, it's helpful to write down the value(s) the student had directly on the checksheet next to the correct values.

Now, the nasty part of this is that many of the simulations will be logically incorrect (out of specification) whether they crash or not. In that case, discuss the differences with the student. Usually the student will simply have not conformed to the spec. In that case, he/she should be penalized for the first display that's incorrect, but you should attempt to determine if the remainder of their output is correct, allowing for the error(s) that caused the first discrepancy. This will be tedious, but it's essential in order to evaluate the project fairly. Try to make the students do as much of the work as possible; they should be required to convince you that their output is consistent. There are a number of extra display commands given in the input file and you should feel free to add more if it helps with this process.

In some cases, a student may have obtained different results that are, in fact, consistent with the specification. If that happens, you should (of course) give the student full credit. Also, record that result (at least the relevant display values) and let the rest of us know about it.

For late penalty:

|                       |             |         |                                      |
|-----------------------|-------------|---------|--------------------------------------|
| Mon November 1, 1999  | 1 day late  | 20% off |                                      |
| Tues November 2, 1999 | 2 days late | 40% off |                                      |
| Wed November 3, 1999  | 3 days late | 50% off | (make this the maximum late penalty) |

If something comes up you can't figure out, let us know.

## Elevator Simulation Trace

### Input:

```
StartTime: 12:00:00
NumberOfFloors: 6
NumberOfElevators: 2
init 0 6
init 1 2
call Asimov, Isaac 5 12:00:00 6
call Blish, James 2 12:00:03 4
display 12:00:15
call Clarke, Arthur C 2 12:00:17 3
display 12:00:20
call Dick, Philip K 2 12:00:21 3
call Ellison, Harlan 4 12:00:26 2
display 12:00:27
display 12:00:30
display 12:00:35
display 12:00:40
display 12:00:45
call Farmer, Philip Jose 3 12:00:47 6
display 12:00:51
display 12:00:55
call Sturgeon, Theodore 5 12:01:00 6
display 12:01:10
display 12:01:15
display 12:01:20
fail 0 12:01:32
display 12:01:40
fail 0 12:01:41
fix 0 12:01:45
stats 12:02:00
```

| Time     | Elevator 0 |        |                   | Elevator 1 |         |                         |
|----------|------------|--------|-------------------|------------|---------|-------------------------|
|          | Loc        | Dest   | Passengers        | Loc        | Dest    | Passengers              |
| 12:00:00 | 60         | 5      |                   | 20         | 5       |                         |
| 12:00:05 | 50         | wait   | Asimov            | 30         | 2       |                         |
| 12:00:10 | 50         | wait   | Asimov            | 20         | wait    | Blish                   |
| 12:00:15 | 50         | 6      | Asimov            | 20         | wait    | Blish                   |
| 12:00:17 | 54         | 6      | Asimov            | 20         | wait    | Blish<br>Clarke         |
| 12:00:20 | 60         | wait   |                   | 20         | wait    | same                    |
| 12:00:21 | 60         | wait   |                   | 20         | wait    | Blish<br>Clarke<br>Dick |
| 12:00:25 | 60         | wait   |                   | 20         | wait    | same                    |
| 12:00:27 | 60         | wait   |                   | 20         | wait    | same                    |
| 12:00:30 | 60         | 4      |                   | 20         | wait    | same                    |
| 12:00:31 | 58         | 4      |                   | 20         | 4       | same                    |
| 12:00:32 | 56         | 4      |                   | 22         | 4       | same                    |
| 12:00:35 | 50         | 4      |                   | 28         | 4       | same                    |
| 12:00:36 | 48         | 4      |                   | 30         | 4, wait | Blish                   |
| 12:00:40 | 40         | wait   | Ellison           | 30         | 4, wait | Blish                   |
| 12:00:45 | 40         | wait   | Ellison           | 30         | wait    | Blish                   |
| 12:00:46 | 40         | wait   | Ellison           | 30         | 4       | Blish                   |
| 12:00:50 | 40         | 2      | Ellison           | 38         | 4       | Blish                   |
| 12:00:51 | 38         | 2      | Ellison           | 40         | wait    |                         |
| 12:00:55 | 30         | 2      | Ellison<br>Farmer | 40         | wait    |                         |
| 12:01:00 | 30         | wait   | same              | 40         | wait    |                         |
| 12:01:01 | 30         | wait   | same              | 40         | 5       |                         |
| 12:01:05 | 30         | 2      | same              | 48         | 5       |                         |
| 12:01:06 | 28         | 2      | same              | 50         | wait    | Sturgeon                |
| 12:01:10 | 20         | wait   | Farmer            | 50         | wait    | Sturgeon                |
| 12:01:15 | 20         | wait   | Farmer            | 50         | wait    | Sturgeon                |
| 12:01:16 | 20         | wait   | Farmer            | 50         | 6       | Sturgeon                |
| 12:01:20 | 20         | 6      | Farmer            | 58         | 6       | Sturgeon                |
| 12:01:21 | 22         | 6      | Farmer            | 60         | idle    |                         |
| 12:01:25 | 30         | 6      | Farmer            |            |         |                         |
| 12:01:30 | 40         | 6      | Farmer            |            |         |                         |
| 12:01:32 | 44         | broken | Farmer            |            |         |                         |
| 12:01:45 | 44         | 6      | Framer            |            |         |                         |
| 12:01:48 | 50         | 6      | Farmer            |            |         |                         |
| 12:01:53 | 60         | idle   |                   |            |         |                         |
|          |            |        |                   |            |         |                         |