

Challenge Problem: Final Jeopardy

Source: Western Carolina University

You're contestant #1 on the popular Jeopardy game show, it's time for "Final Jeopardy," and you're trying to decide your wager. Recall that in the Final Jeopardy round, each contestant must wager any amount between \$0 and their current winnings (inclusive), knowing only the Final Jeopardy category. Each contestant wins or loses the dollar amount of their wager if they answer the Final Jeopardy question correctly or incorrectly, respectively.

Not considering the Final Jeopardy category, write a program that accepts as input your current winnings, followed by the current winnings of your two competitors (contestants #2 and #3). The program should determine your final jeopardy wager, so that in the case you win, you do so by only \$1. (Therefore, you don't wager "too much," just enough to win if you can.) For example, if you are currently in the lead with \$9000, while your closest competitor only has \$4000, your wager should be \$999. (Because in the worst-case that your competitor wagers their whole \$4000 and answers correctly, you can answer incorrectly and still win by \$1.) Or, for example, suppose you have the lead with \$8000, while your closest competitor has \$5000; you should wager \$2001. (Because if your competitor wagers their entire \$5000 and answers correctly, you need to answer correctly and have wagered \$2001 to win by \$1.) If, however, you do not currently have the lead, you should wager your entire winnings.

An example session:

```
Welcome to the Final Jeopardy round!
Enter your current winnings: 8000
Enter the current winnings of contestant #2: 3000
Enter the current winnings of contestant #3: 2000
You can comfortably wager $1999.
```

Another example session:

```
Welcome to the Final Jeopardy round!
Enter your current winnings: 3000
Enter the current winnings of contestant #2: 4000
Enter the current winnings of contestant #3: 4500
You're not in the lead, and should wager your entire $3000.
```

MIT OpenCourseWare
<http://ocw.mit.edu>

EC.S01 Internet Technology in Local and Global Communities
Spring 2005-Summer 2005

For information about citing these materials or our Terms of Use, visit: <http://ocw.mit.edu/terms>.