

Midterm Exam

A348/A5481
Spring Semester 2006

Lindley Hall 120—March 2, 1:00pm

Implement a Vending Machine.

Implement a vending machine that sells three products and has the interface presented below:

- the three products are listed along with their prices,
- a textfield helps collect a new coin
- and a **Proceed** button is used for actually entering the coin in the machine.

The picture below shows the vending machine after 75 cents have been entered and before a new dime is to be sent in.

The credit is updated each time a valid coin is sent in, and the descriptions for the products with a price below the current credit are replaced with an active link through which you can order the product.

If instead of sending the dime we click the link for the crackers the interface will change, by showing a new credit of 0 (zero) and all three products will be disabled without links, just with their prices.

The return screen in that case will post this message:

`Enjoy your crackers. Your change is: 20 cents.`

The prices for the items are: \$1.25 for the cookies, \$0.70 for the soda and \$0.55 for the crackers. You are supposed to write a program in the same style as we have practiced throughout this semester thus far: so think about what your state is, how you retrieve it, how you initialize it, how you update it based on user input, and how you report and store the state and get ready for new input. Write your code in a blue book. **Choose one implementation you're most comfortable with for this written exam.** Turn the code you write at the end of the exam (you have 75 minutes) to Adrian. Then take this piece of paper to the lab with you and implement the program in three different ways: PHP with hidden fields, PHP with sessions and CGI with hidden fields. Work with care and with confidence, and do well.

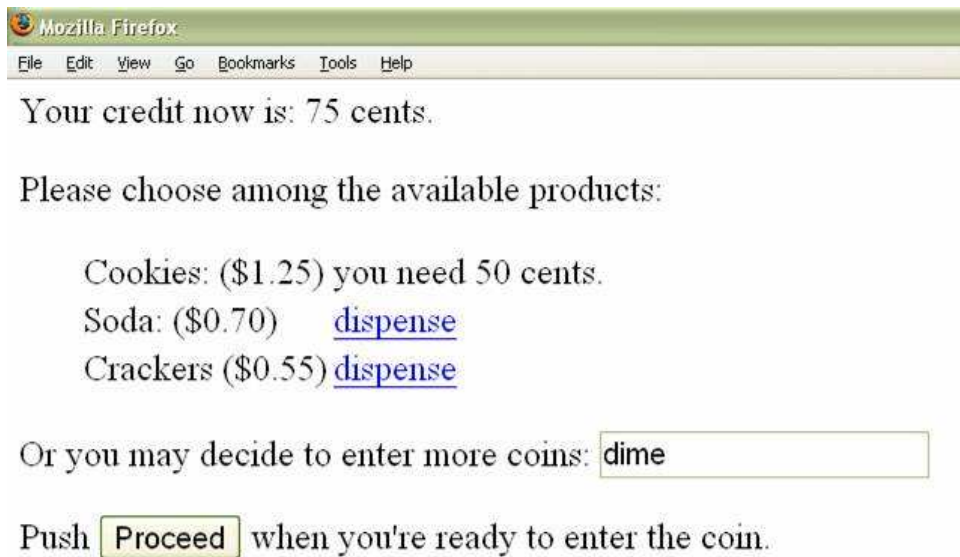


Figure 1: Interface of a vending machine after entering 75 cents worth of coins and right before entering a new coin, a dime. Only the links for a product that costs less than the current credit are active. The program starts with three descriptions for three products and the amount of money required for each.