



AP[®] Computer Science A 2002 Sample Student Responses

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In writing `ChangePrices`, you may call any of the public member functions of the `GroceryStore` class. Assume the member functions work as specified.

Complete free function `ChangePrices` below.

```
void ChangePrices(GroceryStore & store, istream & input)
// precondition: input is open for reading;
//               each line consists of a valid one word item name
//               and a valid price
// postcondition: changes the prices of items in store using names and
//               new prices from input
{
    opstring name;
    double price;
    while (input >> name >> price)
    {
        store.SetPrice(name, price);
    }
}
```

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Complete free function BargainItem below.

```
apstring BargainItem(const GroceryStore & store, char category)
// postcondition: returns the name of an item whose unit price
//                is the lowest in the specified category;
//                if no items in the specified category, returns "none"
{
    double price = 0; low = 0;
    apvector <apstring> list = store.GetItems(category);
    apstring lowest;
    if (list.length() == 0)
        return "none";

    for (int i = 0; i < list.length(); i++)
    {
        price = store.GetPrice(list[i]) / store.GetSize(list[i]);
        if (price < low || low == 0)
        {
            low = price;
            lowest = list[i];
        }
    }
    return lowest;
}
```

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In writing `ChangePrices`, you may call any of the public member functions of the `GroceryStore` class. Assume the member functions work as specified.

Complete free function `ChangePrices` below.

```
void ChangePrices(GroceryStore & store, istream & input)
// precondition: input is open for reading;
//               each line consists of a valid one word item name
//               and a valid price
// postcondition: changes the prices of items in store using names and
//               new prices from input
```

```
{
    while (input >> item name >> price)
        store.setPrice(item name, price)
}
```

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Complete free function BargainItem below.

```
apstring BargainItem(const GroceryStore & store, char category)
// postcondition: returns the name of an item whose unit price
//               is the lowest in the specified category;
//               if no items in the specified category, returns "none"
{
    int low = 3200, count;
    apstring n;
    apvector<apstring> list = getItems(category);
    for (count = 0; count < list.length(); count++)
    {
        if (store.GetPrice(list[count]) / store.GetSize(list[count]) < low)
        {
            low = store.GetPrice(list[count]) / store.GetSize(list[count]);
            n = list[count];
        }
    }
    return n;
}
```

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In writing `ChangePrices`, you may call any of the public member functions of the `GroceryStore` class. Assume the member functions work as specified.

Complete free function `ChangePrices` below.

```
void ChangePrices(GroceryStore & store, istream & input)
// precondition: input is open for reading;
//               each line consists of a valid one word item name
//               and a valid price
// postcondition: changes the prices of items in store using names and
//               new prices from input
{
```

```
    string currentname;
    double currentprice;
```

```
    while (input >> currentname)
```

```
    {
```

```
        input >> currentprice;
```

```
        SetPrice(currentname, currentprice);
```

```
    }
```

```
    return;
```

```
}
```

GO ON TO THE NEXT PAGE.

Complete free function BargainItem below.

```
apstring BargainItem(const GroceryStore & store, char category)
// postcondition: returns the name of an item whose unit price
//                is the lowest in the specified category;
//                if no items in the specified category, returns "none"
```

{

```
    apstring currentBargain("none");
```

```
    apvector<apstring> categoryItems = GetItems(category);
```

```
    int x;
```

```
    double lowest, current;
```

```
    if (categoryItems.length())
```

```
        {lowest = GetPrice(categoryItems[0]);
```

```
        currentBargain = categoryItems[0]; }
```

```
    for(x=1; x < categoryItems.length(); x++)
```

```
    {
```

```
        current = GetPrice(categoryItems[x]);
```

```
        if (current < lowest)
```

```
        {
```

```
            lowest = current;
```

```
            currentBargain = categoryItems[x];
```

```
        }
```

```
    }
```

```
    return currentBargain;
```

```
}
```

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