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function [flag,msg,portfolioMod,accountMod] = sell(...
    portfolio,exchange,account,...
    symbol,numShares,commission,timeStamp)

% This function will "sell" the desired
% number of shares of the desired stock,
% referred to by its symbol. This means
% the stock might be removed to the list of
% stocks stored in the portfolio specified.

% flag = 1 denotes success.
% flag = 0 denotes failure.

% Make sure more than zero
% shares are being sold.
% Otherwise exit.
if(numShares <= 0)
    flag = 0;
    msg = 'Invalid number of shares!\n';
    portfolioMod = portfolio;
    accountMod = account;
    return;
end

% Check to see if the desired
% stock is already present in the
% portfolio. "strcmp()" will return
% a matrix of 1s or 0s corresponding
% to the "symbol" being compared
% to each element in the cell array
% "portfolio.stockSymbols". That
% matrix is then searched with "find()"
% for a "1", which will indicate the
% index of that match in the stockSymbols
% matrix.
temp = strcmp(portfolio.stockSymbols,symbol);
I = find((temp==1),1,'first');
% Case where the stock is already in the
% portfolio.
if(~isempty(I))
    % Check to see if there are enough
    % shares in the portfolio to satisfy
    % the sell order.
    if(portfolio.stockShares(I) >= numShares)
        portfolio.stockShares(I) ...
            = portfolio.stockShares(I) - numShares;
        if(portfolio.stockShares(I) == 0)
            % If the zero shares of the
            % stock are currently owned,
            % DON'T remove it from the
            % portfolio. This way its
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        % data will be saved and
        % it can be bought again
        % under the same conditions
        % for buying if the price goes
        % down.

% % Remove the stock from the portfolio.
% portfolio.stockSymbols(I) = {};
% portfolio.stockShares(I) = [];

    end
else
    % Error. Can't sell more shares
    % than are in the portfolio.
    flag = 0;
    msg = 'Not enough shares to sell.';
    portfolioMod = portfolio;
    accountMod = account;
    return;
end
else
    % Error. Can't sell a stock
    % that is not in the portfolio.
    flag = 0;
    msg = 'Stock not in portfolio.';
    portfolioMod = portfolio;
    accountMod = account;
    return;
end

% Record the date of the sell as the
% last day of trading to date.
portfolio.lastTradeDay_year = timeStamp(1);
portfolio.lastTradeDay_month = timeStamp(2);
portfolio.lastTradeDay_day = timeStamp(3);

% Record information about the transaction.

% Find the next empty row in the
% transaction history list.
nextTransNum = (size(portfolio.transactions,1) + 1);
% Add the transaction information
% to the list.
portfolio.transactions{nextTransNum,1} = 'SELL';
portfolio.transactions{nextTransNum,2} = timeStamp(1);
portfolio.transactions{nextTransNum,3} = timeStamp(2);
portfolio.transactions{nextTransNum,4} = timeStamp(3);
portfolio.transactions{nextTransNum,5} = timeStamp(4);
portfolio.transactions{nextTransNum,6} = timeStamp(5);
portfolio.transactions{nextTransNum,7} = timeStamp(6);
portfolio.transactions{nextTransNum,8} = symbol;
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[flag,tempStock] = getStockData_exchange(exchange,symbol);
if(flag == 0)
    % Error. Stock not found in exchange.
    flag = 0;
    msg = 'Stock not in exchange.';
    portfolioMod = portfolio;
    accountMod = account;
    return;
else
    portfolio.transactions{nextTransNum,9} ...
        = tempStock.currentPrice;
end
portfolio.transactions{nextTransNum,10} = numShares;
portfolio.transactions{nextTransNum,11} ...
    = (tempStock.currentPrice * numShares);

% Update the portfolio with newly
% calculated values. a, b, and c are
% dummies, just care about getting the
% updated portfolio back from the function.
[a,b,c,portfolio] = calcInvestment(portfolio,exchange);

% Update the investment account
% by adding/subtracting from
% the balance.
nextIndex = (length(account.year) + 1);
account.year(nextIndex) = timeStamp(1);
account.month(nextIndex) = timeStamp(2);
account.day(nextIndex) = timeStamp(3);
account.balance(nextIndex) = ...
    (account.balance(nextIndex-1) ...
    + (tempStock.currentPrice * numShares) ...
    - commission);

% Make sure to return the newly
% modified portfolio struct
% and account struct.
portfolioMod = portfolio;
accountMod = account;

flag = 1;
msg = 'Success!';
return;

end
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