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CS 161

Assignment 7

Understanding

This week's focus was on the usage of structs and vectors. The first exercise focus was on structs. The user inputted information about the item they will add to their shopping cart. The second exercise focused on the use of vectors. The user will input numbers to be added to a vector and then is inputted into another vector to find the mode. The project part of the assignment combined both the first and second exercise. The struct is inputted into a vector.

Design

- 1) Add headers and make prototypes
 - a. Make two structs before prototypes
- 2) Make function for menu options
 - a. Get car info
 - b. Check inventory
 - c. Profit
- 3) Make vectors for two structs
 - a. One for date and one for car type
- 4) Make switch
 - a. One to add car info
 - b. Two check inventory
 - c. Three check profit of month
 - d. Four to quit
- 5) AddCarInfo
 - a. Make for loop
 - b. Make if statement to quit
 - i. Set array size counter to i
 - c. For isSold input make a separate if statement
 - i. Get input for sold car
 - d. Push back inputs
- 6) Check inventory
 - a. Make for loop
 - i. Make if statement
 - ii. Set loop only print cars that weren't sold
 - iii. Else statement have sold counter increment
 - iv. Print number of cars in inventory
 - v. Reset counter to 0
- 7) Profit of month
 - a. Get month and year

- b. Make for loop
 - c. Make if statements to check year and month
 - d. Make if statement to check if isSold is true
 - e. Make total profit + sales price
 - f. Make total purchase + purchase price
 - g. Print difference
- 8) Month checker
- a. Make while loop
 - b. Make if/else statement
 - c. Return if month is between 1 and 12
- 9) Day checker
- a. Make if statements for every month
 - b. Add number of days in if statements conditions
 - c. If invalid re-input

Testing

Prompt	Input	Expected Output	Actual output
Good input for month	12	12	12
Bad input for month	13	Invalid input	Invalid input
Good input for day for February	28	28	28
Bad input for day for February	30	Invalid input	Invalid input
To quit	Quit	Go to menu	Go to menu
IsSold = true	Y	What year was the car sold in?	What year was the car sold in?
isSold=false	N	What model is the car	What model is the car
Check inventory	2	Display cars and tell how many cars are in inventory	Display cars and tell how many cars are in inventory
Check profit	Month 2, year 2010	Total profit is \$5000.00	Total profit is \$5000.00
Check profit with no year	Month 2, year 2011	Total profit is \$0.00	Total profit is \$0.00

Reflection

The most trouble this week came with finding the mode. The first exercise and the project didn't give me trouble like the second exercise. I had trouble figuring out how to get multiple modes. When I would have two modes it would only return the first mode and not the second one. I realized I didn't have a vector for my counter. After I added that vector, it allowed my function to get both mode. The next problem that occurred after that was it kept printing the modes multiple times. For example, if the user inputted 1,1,2,3,3, it would print the modes: 1,1,3,3,. I needed to find a method to make sure that it will only push back the mode into the vector once. I used a method to delete any copies in the vector.