CSCE 2004 – Programming Foundations I Programming Project Report

Name: Cameron Eddy Date: 3/4/2024

Academic Integrity Statement: I pledge that I have neither given nor received unauthorized help on this programming assignment.

For this programming assignment, we were tasked with learning how loops work. In the assignment, we asked the user to input which coffee shop area they would want and how much rent it would be. The more expensive places cost more; however, they also drew in more customers. After the user inputs what location they want, a simulation for 5 weeks will be run and the user will be returned on whether or not Donna made enough to keep her coffee shop running. For error handling, we had to make sure the user didn't input a number that was less than 0 or greater than 3.

The design required using a while loop to check for errors, a for loop to loop through every week, and a do while loop to simulate a user buying a coffee. I also had to use the math library to get the rand function so that way a random number of customers would be generated based on what location the user chose.

The first thing I did was initialize my variables for selecting the coffee shop's location. After this, I printed to the screen what options were available to the user and received what option the user chose. After using a while loop to check for user error on the input, I moved on to simulating each week. I started with initializing more variables and then used a for loop to simulate each week. In the for loop there is a do-while loop that tracks a coffee purchase for each customer that went in that week. Finally, I printed to the screen the stats from each week and whether or not Donna made enough to keep her coffee shop running.

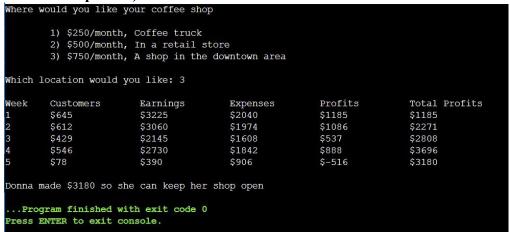
Results for option 1)

```
Where would you like your coffee shop
        1) $250/month, Coffee truck
        2) $500/month, In a retail store
        3) $750/month, A shop in the downtown area
Which location would you like: 1
                        Earnings
                                        Expenses
Week
        Customers
                                                         Profits
                                                                         Total Profits
        $164
                        $820
                                        $578
                                                         $242
                                                                         $242
        $137
                        $685
                                        $524
                                                         $161
                                                                         $403
        $50
                        $250
                                        $350
                                                         $-100
                                                                         $303
        $16
                        $80
                                        $282
                                                         $-202
                                                                         $101
        $126
                        $630
                                        $502
                                                         $128
Donna made $229 which is less the minimum wage so she will have to close her shop
 ..Program finished with exit code 0
Press ENTER to exit console.
```

Results for option 2)

	 \$250/month, Coffee truck \$500/month, In a retail store \$750/month, A shop in the downtown area 							
Which	location would	you like: 2						
Week	Customers	Earnings	Expenses	Profits	Total Profits			
1	\$20	\$100	The second secon					
2	\$194	\$970	\$888	\$82	\$-358			
3	\$278	\$1390	\$1056	\$334	\$-24			
4	\$398	\$1990	\$1296	\$694	\$670			
5	\$388	\$1940	\$1276	\$664	\$1334			
Donna	made \$1334 whi	ch is less the m	inimum wage so s	he will have to	close her shop			

Results for option 3)



This project was a success and worked well. I accidentally deleted the project the first time I made it, so I can assure you I won't make that mistake again

as I had to redo the entire project. It took me an hour to complete the first time and

about 30 minutes the second time.