Assignment #1

Create C# Program for Completing Different Tasks

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High-Quality Software Programming

PROG8051 - Winter 2025 - Section 1

Shankar Iyer

29th January, 2025

Task 1

Project: Business Trip Calculation for Carlo

Description: This project is used for the travel expenses which can be viewed by Carlo, who is living in Toronto and frequently travels to Calgary, Montreal, and Vancouver for business trips. Each trip requires a round trip to Toronto before traveling to the next city. This project calculates the total money spent on these trips and determines the average cost per trip.

C#

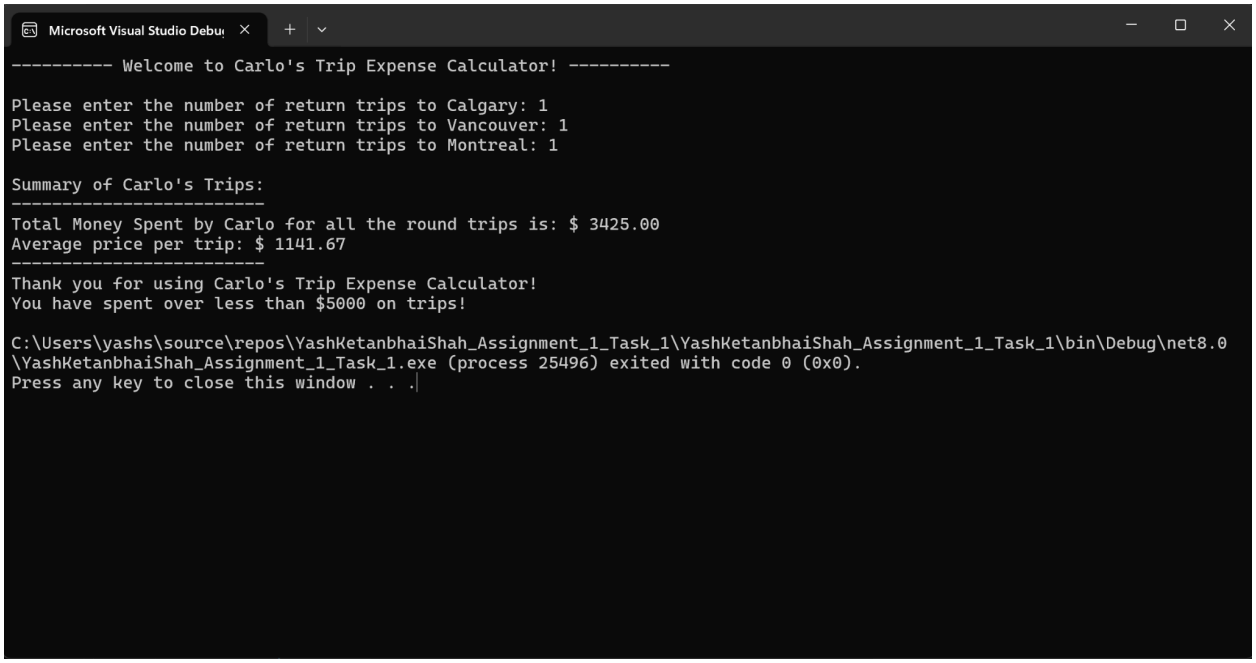
```
/*
 * Author: Shah Yash Ketanbhai
 * Date: 27th January, 2025
 * Project: Business Trip Calculation for Carlo
 * Description: This project is used for the travel expences which can be
viewed by the Carlo, who is living in the city Toronto
 * and is frequently traveling to Calgary, Montreal and Vancouver for his
business trips. Each of the trips require him a round trip
 * to Toronto and before travelling to the next city. This project will
let him calcuate the total money he is spending on these trips
 * and will determine the averaage cost per trip.
 * <Fill>
*/

using System;

namespace Assignment1Task1
{
    class Program
    {
        enum Destination { Calgary, Vancouver, Montreal }

        static void Main(string[] args)
        {
            // Here we have user all the staic amount for all the cities
            const double priceToCalgary = 1350;
            const double priceToVancouver = 1500;
            const double priceToMontreal = 575;
```

```
            Console.WriteLine("---------- Welcome to Carlo's Trip Expense
Calculator! ----------\n");

            // Here we will get the infomration of trips from the user
            double tripsToCalgary = GetTripCount(Destination.Calgary);
            double tripsToVancouver = GetTripCount(Destination.Vancouver);
            double tripsToMontreal = GetTripCount(Destination.Montreal);

            // Here we willn calculate total amount and averages
            double totalSpend = (tripsToCalgary * priceToCalgary) +
(tripsToVancouver * priceToVancouver) + (tripsToMontreal *
priceToMontreal);
            double totalTrips = tripsToCalgary + tripsToVancouver +
tripsToMontreal;
            double averagePrice = totalTrips > 0 ? totalSpend / totalTrips
: 0;

            // Here we will display the result
            Console.WriteLine("\nSummary of Carlo's Trips:");
            Console.WriteLine("-------------------------");
            Console.WriteLine($"Total Money Spent by Carlo for all the
round trips is: $ {totalSpend:F2}");
            Console.WriteLine($"Average price per trip: $
{averagePrice:F2}");
            Console.WriteLine("-------------------------");
            Console.WriteLine("Thank you for using Carlo's Trip Expense
Calculator!");

            // If the user's spending exceeds $5000 we will display this
message
            if (totalSpend > 5000)
            {
                Console.WriteLine("Warning: You have spent over $5000 on
trips!");
            }

            // If the user's spending is less than or equal to $5000 we
will display this message
            if (totalSpend <= 5000)
            {
```

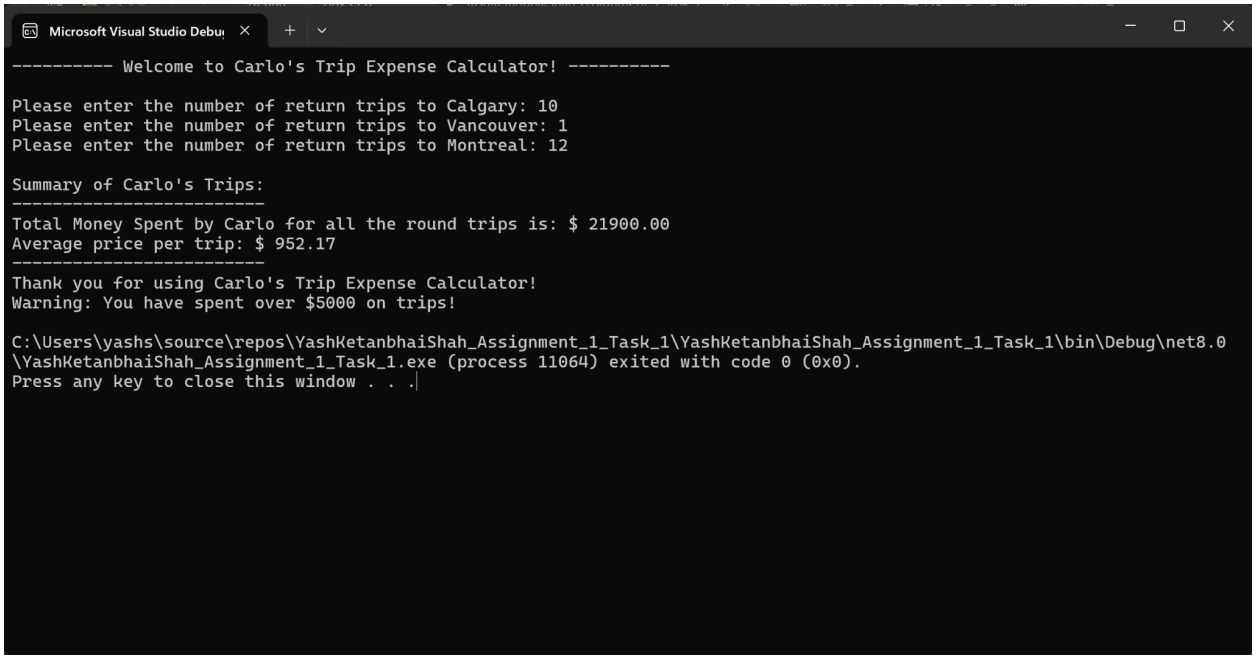
```
                Console.WriteLine("You have spent over less than $5000 on
trips!");
            }

            // If the user's spending is less than $0 we will display this
message
            if (totalTrips == 0)
            {
                Console.WriteLine("No trips were taken.");
            }
        }

        static double GetTripCount(Destination destination)
        {
            double count = 0;
            while (true)
            {
                Console.Write($"Please enter the number of return trips to
{destination}: ");
                if (double.TryParse(Console.ReadLine(), out count) &&
count >= 0)
                    break;
                Console.WriteLine("Invalid input. Please enter a
non-negative number.");
            }
            return count;
        }
    }
}
```

Output

If the user has spend less than $5000 below is the output



If the user has spend more than $5000 below is the output



Task 2

Project: Basketball Budget Tracker

Description: This program tracks Joe's spending on his favorite game, the Raptors. It collects data on the number of tickets Joe has purchased for each seat type, calculates total expenses, and determines the average cost per game.

C#

```
/*
 * Author: Shah Yash Ketanbhai
 * Date: 29th January, 2025
 * Project: Basketball budget tracker
 * Description: We have to create a program to track the Joe's spending on
his fav game raptors.
 * The  program will collect all the data on the numbers of tickets which
joe has purchased for
 * each seat type and calcuate total expences and will determine the
average cost per game.
 * <Fill>
*/

using System;

class BasketballBudgetTracker
{
 class Program
    {
        // I have used enumeration for the different types of tickets
        enum TicketType { Purple, Green, Blue }

        static void Main(string[] args)
        {
            // Here we have constants representing the prices of all the
tickets which are predefine
            const double purplePrice = 50, greenPrice = 80, bluePrice =
100;
            // Here we will store the number of tickets which the  user
had purchased
```

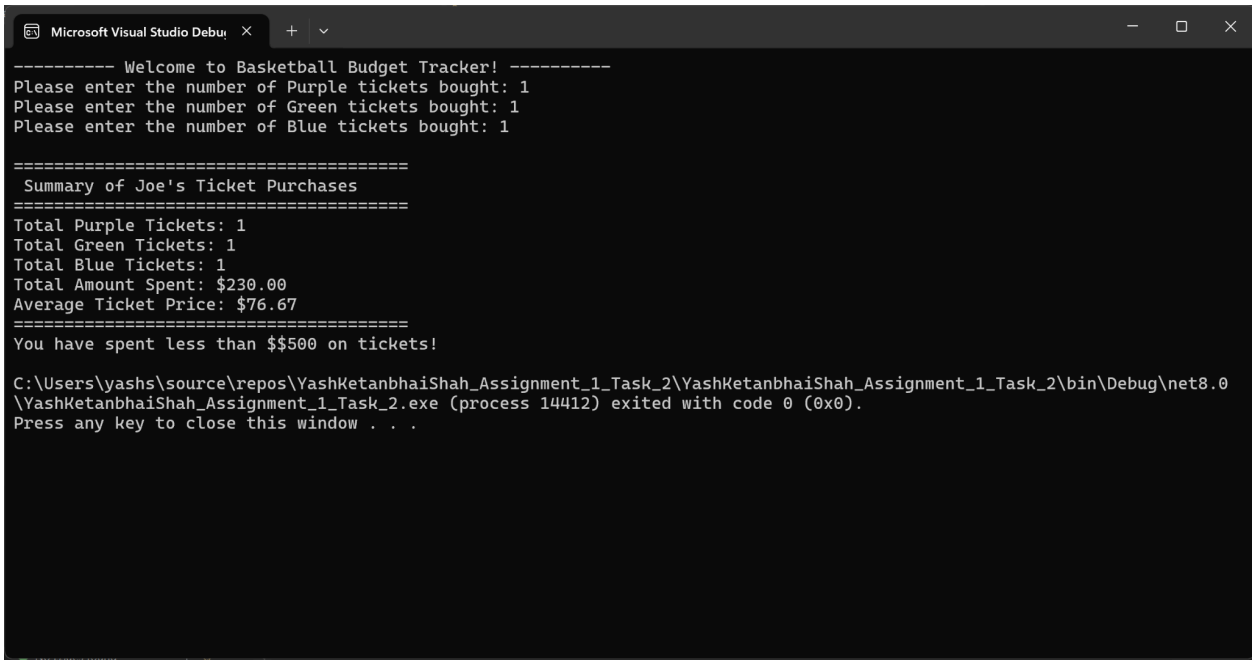
```
            double purpleCount = 0, greenCount = 0, blueCount = 0;

            Console.WriteLine("---------- Welcome to Basketball Budget
Tracker! ----------");

            // This will help to collect the input of the purchased
tickets from the user type
            purpleCount = GetTicketCount(TicketType.Purple);
            greenCount = GetTicketCount(TicketType.Green);
            blueCount = GetTicketCount(TicketType.Blue);

            // Here it will calculate the total money spend by the user on
the tickets
            double totalSpent = (purpleCount * purplePrice) + (greenCount
* greenPrice) + (blueCount * bluePrice);

            // Here we will be calcuatate the total numbers of tickets
used had purchased
            double totalTickets = purpleCount + greenCount + blueCount;

            // Here we will calculate the average of ticket price with
ensuring the division by zero is avoided
            double averagePrice = totalTickets > 0 ? totalSpent /
totalTickets : 0;

            // We are displaying the summary of the tickets which the user
has purchased

Console.WriteLine("\n=====================================");
            Console.WriteLine(" Summary of Joe's Ticket Purchases ");
            Console.WriteLine("=====================================");
            Console.WriteLine($"Total Purple Tickets: {purpleCount}");
            Console.WriteLine($"Total Green Tickets: {greenCount}");
            Console.WriteLine($"Total Blue Tickets: {blueCount}");
            Console.WriteLine($"Total Amount Spent: ${totalSpent:F2}");
            Console.WriteLine($"Average Ticket Price:
${averagePrice:F2}");
            Console.WriteLine("=====================================");
```

```
            // If the user's spending exceeds more than $500 we will
display warning message
            if (totalSpent > 500)
            {
                Console.WriteLine("Warning: You have spent over $500 on
tickets!");
            }

            // If the user's spending exceeds less or equal to $500 we
will display warning message
            if (totalSpent <= 500)
            {
                Console.WriteLine("You have spent less than $$500 on
tickets!");
            }

            // If the use had purchased no tickets
            if (totalTickets == 0)
            {
                Console.WriteLine("No tickets were purchased.");
            }
        }

        // Here we have used the method to collect and validaet the user's
input for the ticket count
        static double GetTicketCount(TicketType ticketType)
        {
            double count = 0;
            while (true)
            {
                Console.Write($"Please enter the number of {ticketType}
tickets bought: ");
                // Here we have validate if the user enters non-negative
number or any alphabets
                if (double.TryParse(Console.ReadLine(), out count) &&
count >= 0)
                    break;
                Console.WriteLine("Invalid input. Please enter a
non-negative number.");
            }
```

```
            return count;
        }
    }
}
```

Output

If the Joe’s has spend less than $500 below is the output



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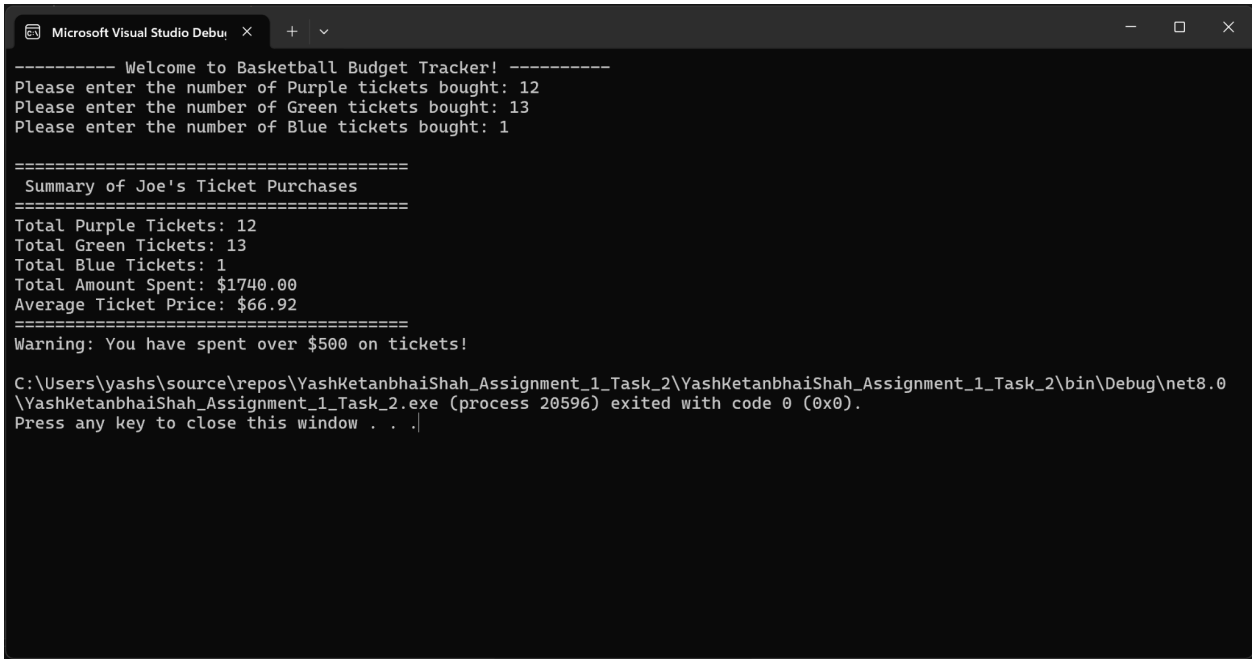

Git Access: https://github.com/yashshah0401/High-Quality-Software-Programming