As a next step, they want you to do the following coding assignment and put it on your github. Send me the link when you are done and I will forward it to them:

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A retailer offers a rewards program to its customers, awarding points based on each recorded purchase.

A customer receives 2 points for every dollar spent over $100 in each transaction, plus 1 point for every dollar spent over $50 in each transaction

(e.g. a $120 purchase = 2x$20 + 1x$50 = 90 points).

Given a record of every transaction during a three month period, calculate the reward points earned for each customer per month and total.

* Make up a data set to best demonstrate your solution
* Check solution into GitHub

C# solution to calculate the reward points earned for each customer per month and total:

Data Set

Let's assume we have the following data set:

| Customer ID | Transaction Date | Transaction Amount |

| --- | --- | --- |

| 1 | 2022-01-01 | 120 |

| 1 | 2022-01-15 | 80 |

| 1 | 2022-02-01 | 150 |

| 2 | 2022-01-05 | 200 |

| 2 | 2022-02-15 | 100 |

| 3 | 2022-03-01 | 250 |

Code

using System;

using System.Collections.Generic;

using System.Linq;

public class Transaction

{

public int CustomerId { get; set; }

public DateTime TransactionDate { get; set; }

public decimal TransactionAmount { get; set; }

}

public class RewardPointsCalculator

{

public Dictionary<int, Dictionary<int, int>> CalculateRewardPoints(List<Transaction> transactions)

{

var rewardPoints = new Dictionary<int, Dictionary<int, int>>();

foreach (var transaction in transactions)

{

var customerId = transaction.CustomerId;

var month = transaction.TransactionDate.Month;

if (!rewardPoints.TryGetValue(customerId, out var customerRewardPoints))

{

customerRewardPoints = new Dictionary<int, int>();

rewardPoints[customerId] = customerRewardPoints;

}

var points = CalculatePoints(transaction.TransactionAmount);

if (!customerRewardPoints.TryGetValue(month, out var monthlyPoints))

{

monthlyPoints = 0;

}

customerRewardPoints[month] = monthlyPoints + points;

}

return rewardPoints;

}

public int CalculatePoints(decimal amount)

{

var points = 0;

if (amount > 100)

{

points += (int)(amount - 100) \* 2;

}

if (amount > 50)

{

points += (int)(amount - 50);

}

return points;

}

}

class Program

{

static void Main(string[] args)

{

var transactions = new List<Transaction>

{

new Transaction { CustomerId = 1, TransactionDate = DateTime.Parse("2022-01-01"), TransactionAmount = 120 },

new Transaction { CustomerId = 1, TransactionDate = DateTime.Parse("2022-01-15"), TransactionAmount = 80 },

new Transaction { CustomerId = 1, TransactionDate = DateTime.Parse("2022-02-01"), TransactionAmount = 150 },

new Transaction { CustomerId = 2, TransactionDate = DateTime.Parse("2022-01-05"), TransactionAmount = 200 },

new Transaction { CustomerId = 2, TransactionDate = DateTime.Parse("2022-02-15"), TransactionAmount = 100 },

new Transaction { CustomerId = 3, TransactionDate = DateTime.Parse("2022-03-01"), TransactionAmount = 250 },

};

var calculator = new RewardPointsCalculator();

var rewardPoints = calculator.CalculateRewardPoints(transactions);

foreach (var customer in rewardPoints)

{

Console.WriteLine($"Customer ID: {customer.Key}");

foreach (var month in customer.Value)

{

Console.WriteLine($" Month: {month.Key}, Points: {month.Value}");

}

}

}

}