**Programming Assignment 4 \*\*\* There are 5 parts to this assignment!**

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\*\* Use SHORT Concise variables! Declare and Initialize all Variables and Constants BEFORE anything else! You will write 3 separate print statements all using the variable that prints expression method. You will use a precision of 2. Do not input fake data!! READ CAREFULLY

(1 A & B & C) You are going to write an **(A) algorithm** **& (B) flowchart &** **(C)program** for this scenario. You are going to assume no accidents or delays for the vehicle.

Use this formula for the distance that a car travels down the interstate:

Distance = Speed \* Time

The car is traveling 82 miles per hour. Write a program that displays the following:

1. The distance the car will travel in 6 hours
2. The distance the car will travel in 10 hours
3. The distance the car will travel in 15 hours.

* Multiply the speed of the car by 6 hours
* Multiply the speed of the car by 10 hours
* Multiply the speed of the car by 15 hours
* Display the result of the calculations for each corresponding hour

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Description automatically generated

# Initiating constant variable for the speed of the car

CAR\_SPEED = 82

# Initiating distance variables for each hour

six\_hour\_distance = 0.0

ten\_hour\_distance = 0.0

fifteen\_hour\_distance = 0.0

# Calculating the distance for 6 hours

six\_hour\_distance = float(CAR\_SPEED) \* 6

# Calculating the distance for 10 hours

ten\_hour\_distance = float(CAR\_SPEED) \* 10

# Calculating the distance for 15 hours

fifteen\_hour\_distance = float(CAR\_SPEED) \* 15

# Displaying the distance the car will travel in 6 hours

print('The distance the car will travel in 6 hours is:', format(six\_hour\_distance, ',.2f'), 'miles')

# Displaying the distance the car will travel in 10 hours

print('The distance the car will travel in 10 hours is:', format(ten\_hour\_distance, ',.2f'), 'miles')

# Displaying the distance the car will travel in 15 hours

print('The distance the car will travel in 15 hours is:', format(fifteen\_hour\_distance, ',.2f'), 'miles')

(2 A & B ) Declare and initialize variables, you need 5 separate print statements all with sentences that have the variable and print the expression. Precision of 2. No fake data! Read Carefully. Test in your python or visual code. Only give me the program.

You are going to write an **(A)** **algorithm**, and **(B)** **program** for the following scenario:

In January 2020 the executive of Google purchased stock options in the company.

The number of purchased shares were 2,365

The price of the stock was $62.50 per share

He paid stockbroker commission of 2.5% of the amount paid for the stock

The executive then sold the stock.

He sold 2,000 shares of the stock

He sold the stock for $78.20 per share

He paid stockbroker commission another 3% of the amount he received for sold stock

Write a program that displays separate statements for each of the following:

1. Display the amount of money paid for the stock
2. Display the amount of the commission paid to stockbroker when stock was bought
3. Display the amount the stock was sold for
4. Display the amount of commission paid to stockbroker when stocks were sold
5. Display the amount of money profited or lost from the sold stock (after stockbroker paid) Make sure your print statement clearly states if this is a profit or a loss

* Multiply the number of purchased shares by the price of the stock per share
* Multiply the total cost of the purchased stock by the stockbroker commission
* Multiply the number of sold shares by the price of the stock per share
* Multiply the total cost of the sold stock by the stockbroker commission
* Subtract the grand total of the sold stock by the initial grand total of the stock when first purchased
* Display the result of the amount paid for the stock
* Display the commission amount
* Display the result of the sold stock amount
* Display the commission amount after selling the stock
* Display the amount of money profited or lost from the sold stock

# Initializing constant variables

STOCKBROKER\_COMMISION\_PERCENTAGE\_ONE = 0.025

STOCKBROKER\_COMMISION\_PERCENTAGE\_TWO = 0.03

# Initializing variables when the stocks were initially purchased

purchased\_shares = 2365

stock\_price = 62.50

purchased\_stock\_amount = 0.0

stockbroker\_commision\_amount\_one = 0.0

# Initializing variables when the stocks were sold

sold\_shares = 2000

sold\_stock\_price = 78.20

sold\_stock\_amount = 0.0

stockbroker\_commision\_amount\_two = 0.0

grand\_total = 0.0

# When buying the stock initially

# Calculating the total amount of the purchase of the shares

purchased\_stock\_amount = purchased\_shares \* stock\_price

# Calculating the total commision amount when initially buying the stock

stockbroker\_commision\_amount\_one = purchased\_stock\_amount \* STOCKBROKER\_COMMISION\_PERCENTAGE\_ONE

# After Selling the stock

# Calculating the total amount of the sold stock

sold\_stock\_amount = sold\_shares \* sold\_stock\_price

# Calculating the total commision amount when stock was sold

stockbroker\_commision\_amount\_two = sold\_stock\_amount \* STOCKBROKER\_COMMISION\_PERCENTAGE\_TWO

grand\_total = (sold\_stock\_amount + stockbroker\_commision\_amount\_two) - (purchased\_stock\_amount - stockbroker\_commision\_amount\_one)

# Displaying messages for stock amounts, commission amounts, and total profit

print('The amount paid for the stock is: $', format(purchased\_stock\_amount, ',.2f'), sep='')

print('The amount of the commission paid to stockbroker when stock was bought is: $', format(stockbroker\_commision\_amount\_one, ',.2f'), sep='')

print('The amount the stock was sold for is: $', format(sold\_stock\_amount, ',.2f'), sep='')

print('The amount of the commission paid to stockbroker when stock was sold is: $', format(stockbroker\_commision\_amount\_two, ',.2f'), sep='')

print('This was a profit! The amount of money profited is: $', format(grand\_total, ',.2f'), sep='')