CMPE 285 – Software Engineering Processes

Python Stock Profit Calculator

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Description

The goal of this homework is to use Python to implement a stock profile calculator. Perform the following:

- Setup your Python development environment
- Research into how stock profit is being calculated.
- Implement a Python program that it will take the following inputs:
    - A stock symbol
    - Allotment (number of shares)
    - Final share price (in dollars)
    - Sell commission (in dollars)
    - Inital share price (in dollars)
    - Buy commission (in dollars)
    - Captial gain tax rate (in %)
- Output the following items after computation:
    - Proceeds (Allotment x Final share price)
    - Cost (Allotment x Initial Share Price + commissions + Tax on Capital Gain)
    - Net Profit (in dollars)
    - Return on investment (in %)
    - Break-even price (in dollars)

Answer:

Code:

```
# *----------Stock Profit Calculator----------*

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# This below function is used to calculate the Profile Report

def stockProfitCalculation(symbol, allotment, finalPrice, sellCommission, initialPrice, buyCommission, cptlGainTaxRate):

    proceeds = allotment * finalPrice  # Calculate proceeds

    TaxOnCapitalGain = (proceeds - (allotment * initialPrice + buyCommission + sellCommission)) * (cptlGainTaxRate / 100)  # Calculate tax on capital gain (allotment * initialPrice = Total Purchase Price)

    costPrice = allotment * initialPrice + buyCommission + sellCommission + TaxOnCapitalGain # Calculate total cost

    netProfit = proceeds - costPrice  # Calculate net profit

    ROI = (netProfit / costPrice) * 100  # Calculate Return On Investment

    breakEvenPrice = (allotment * initialPrice + buyCommission + sellCommission) / allotment  # Calculate break-even price


    # Display the profit report

    print("\nPROFIT REPORT:")

    print("\nProceeds\n${:.2f}".format(proceeds))

    print("\nCost\n${:.2f}".format(costPrice))

    print("\nCost details:")

    print("Total Purchase Price")

    print("{} × ${} = ${:.2f}".format(allotment, initialPrice, allotment * initialPrice))

    print("Buy Commission = ${:.2f}".format(buyCommission))
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    print("Sell Commission = ${:.2f}".format(sellCommission))
    print("Tax on Capital Gain = {:.2f}% of ${:.2f} = ${:.2f}".format(cptlGainTaxRate, (proceeds - (allotment * initialPrice + buyCommission + sellCommission)), TaxOnCapitalGain))
    print("\nNet Profit\n${:.2f}".format(netProfit))
    print("\nReturn on Investment\n{:.2f}%".format(ROI))
    print("\nTo break even, you should have a final share price of\n${:.2f}".format(breakEvenPrice))



if __name__ == "__main__":
    print("Compute Your Profit:")
    # Input vales from the user
    symbol = input("\nTicket Symbol:\n")
    allotment = int(input("\nAllotment:\n"))
    finalPrice = float(input("\nFinal Share Price:\n"))
    sellCommission = float(input("\nSell Commission:\n"))
    initialPrice = float(input("\nInitial Share Price:\n"))
    buyCommission = float(input("\nBuy Commission:\n"))
    cptlGainTaxRate = float(input("\nCapital Gain Tax Rate (%):\n"))

    stockProfitCalculation(symbol, allotment, finalPrice, sellCommission, initialPrice, buyCommission, cptlGainTaxRate)
```
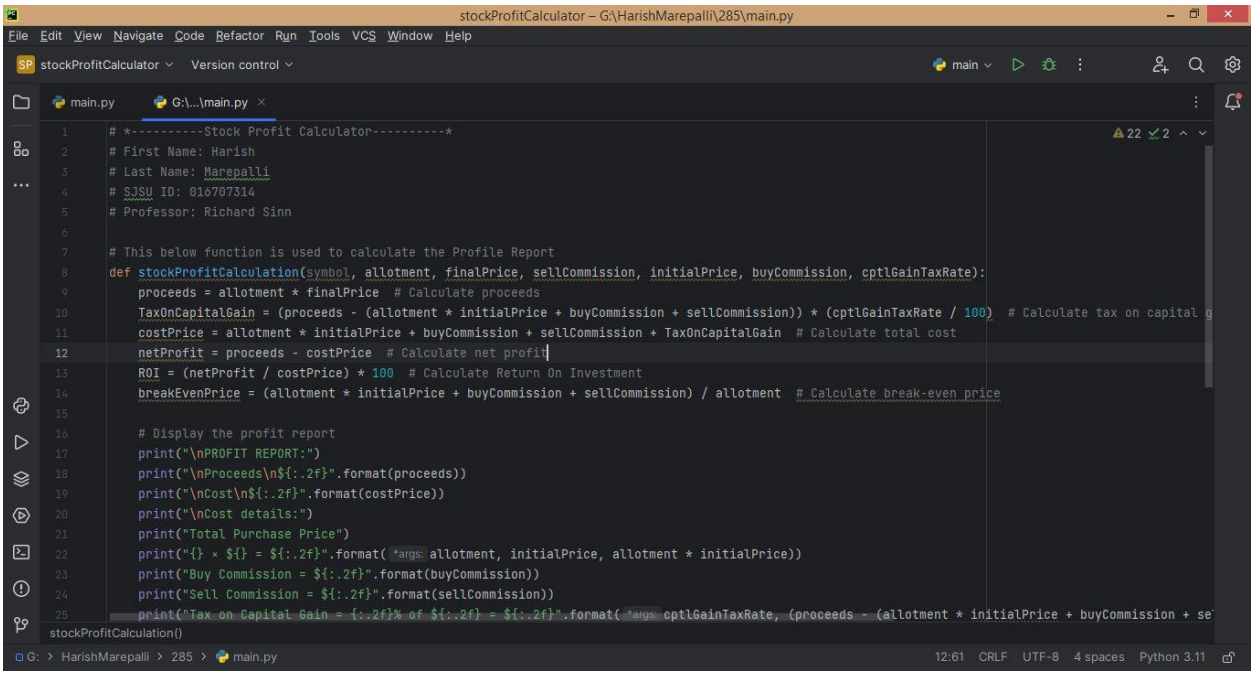
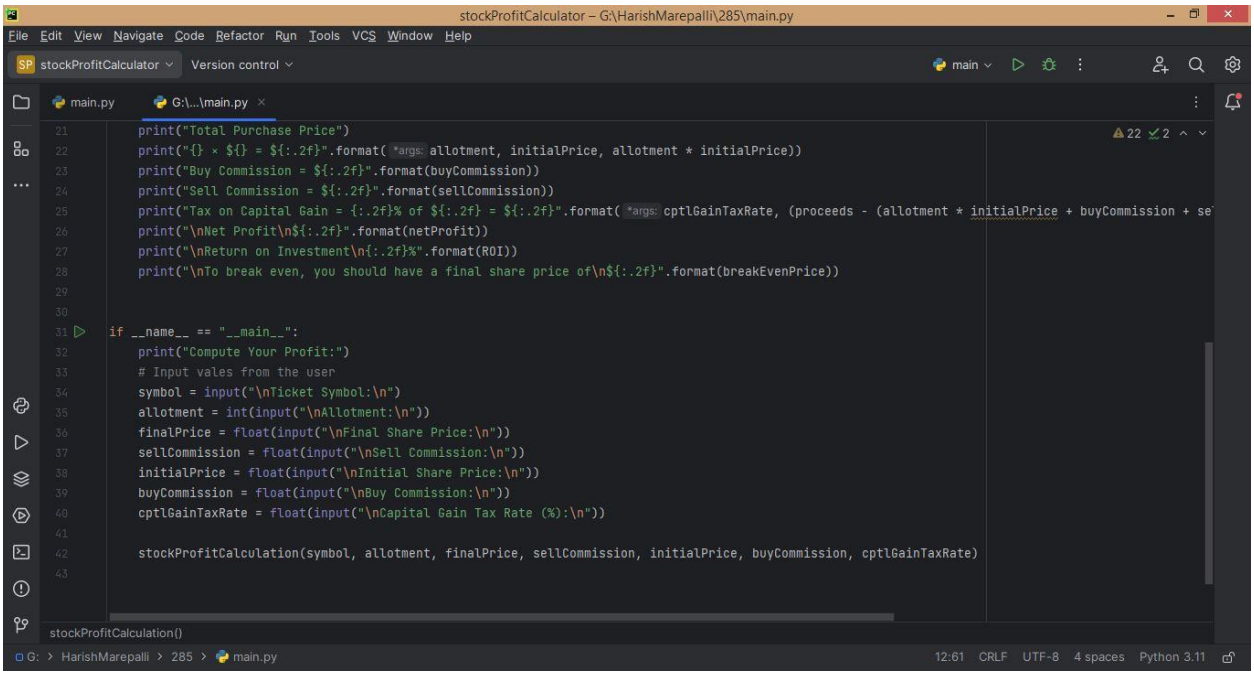

Code Screenshot:



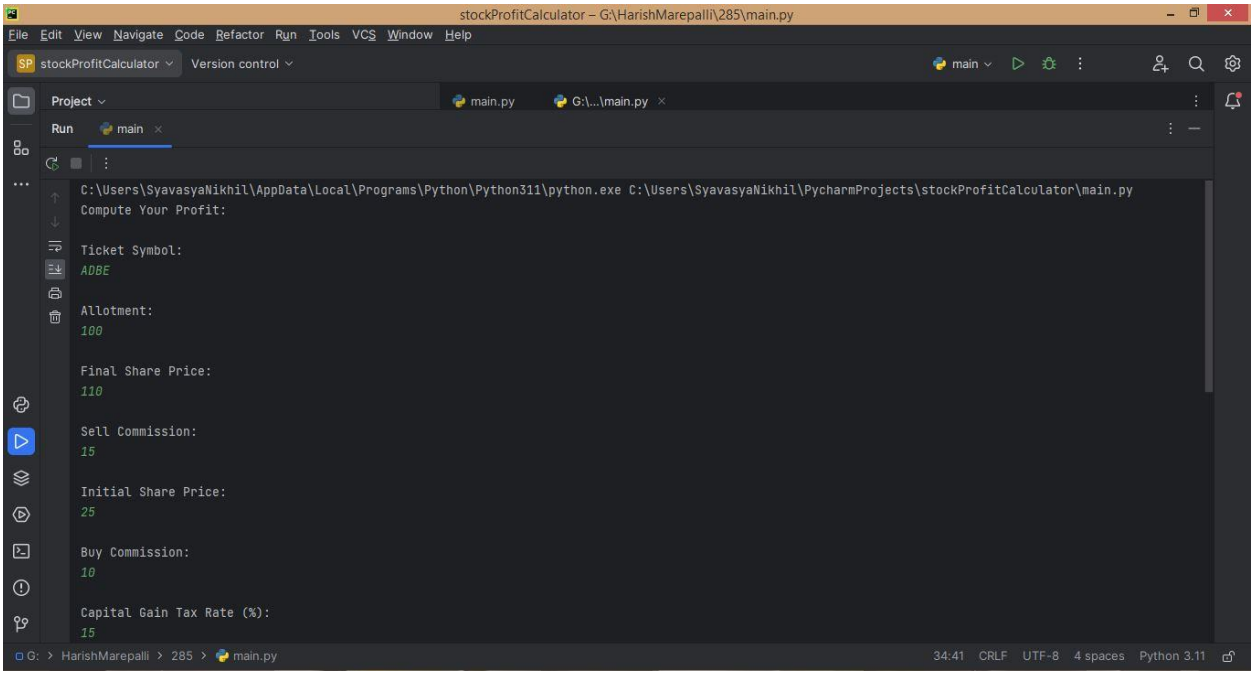
Code Snippet 1



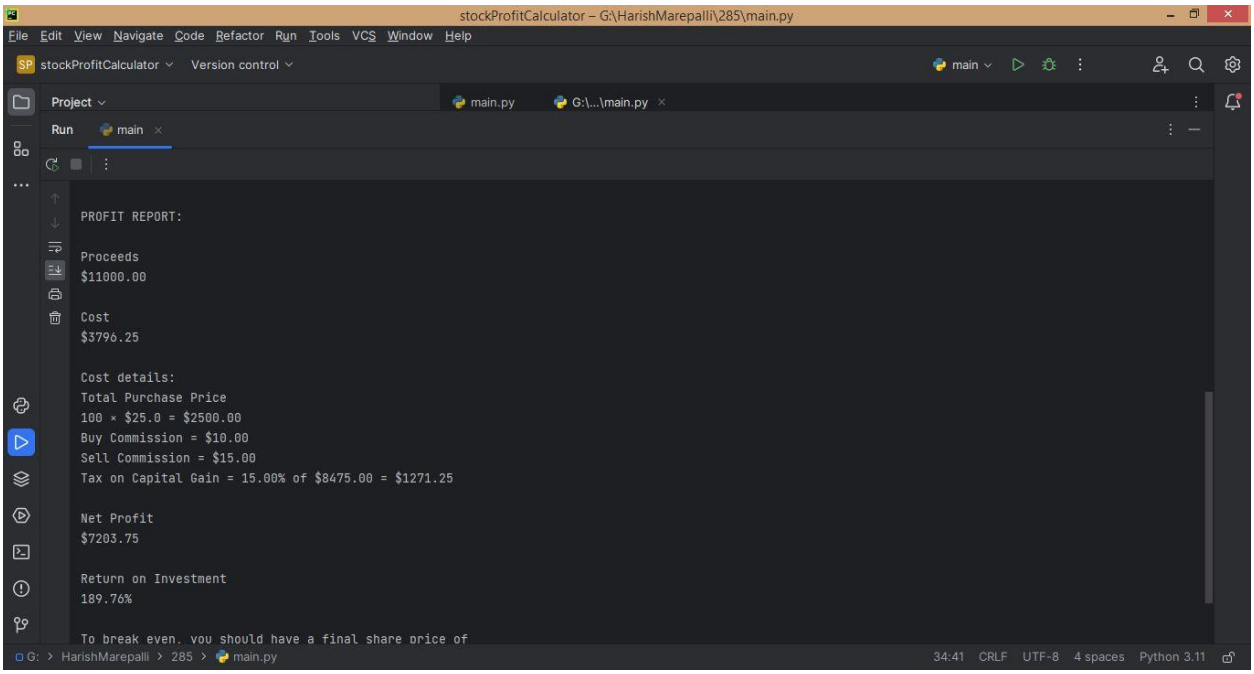
Code Snippet 2

Run/Console Snippets:

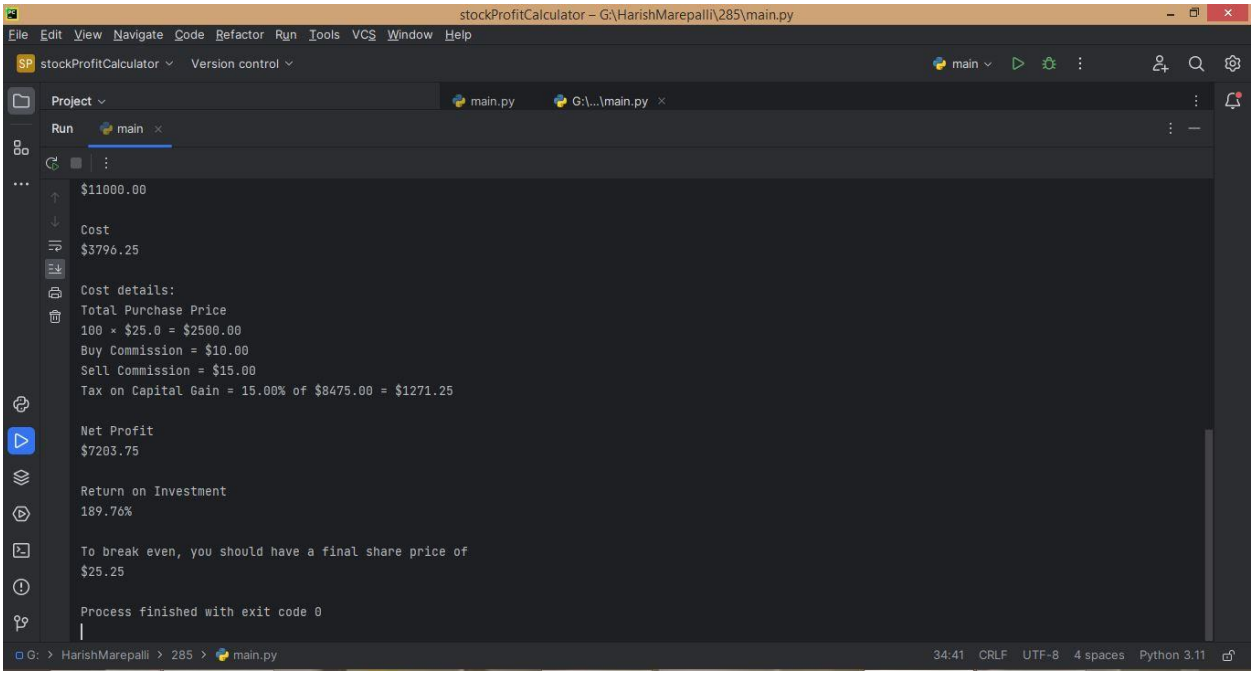
For Test case 1:



Console Snippet Test Case 1

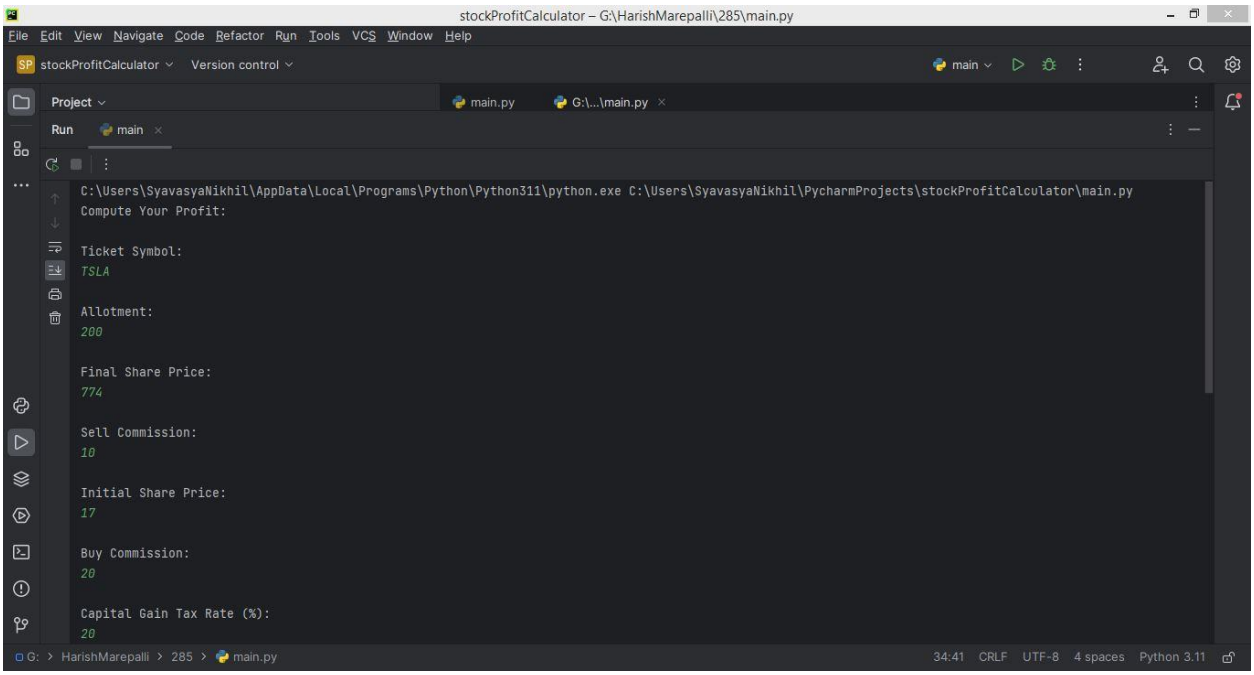


Console Snippet Test Case 1

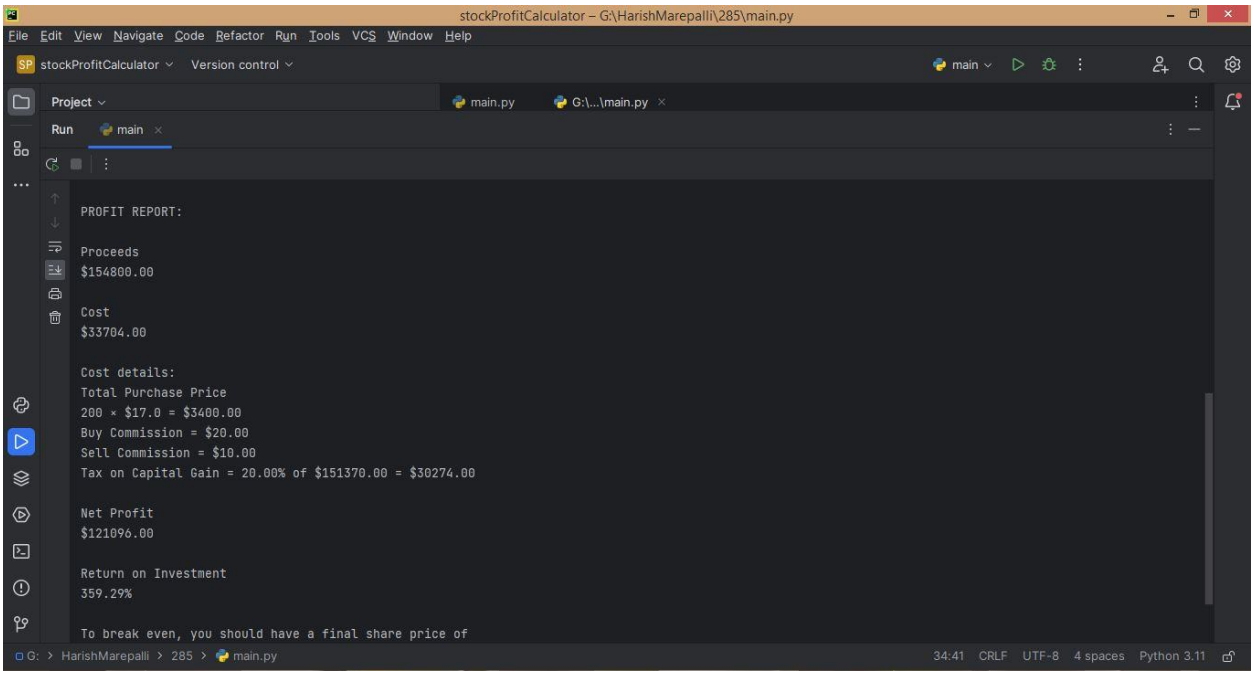


Console Snippet Test Case 1

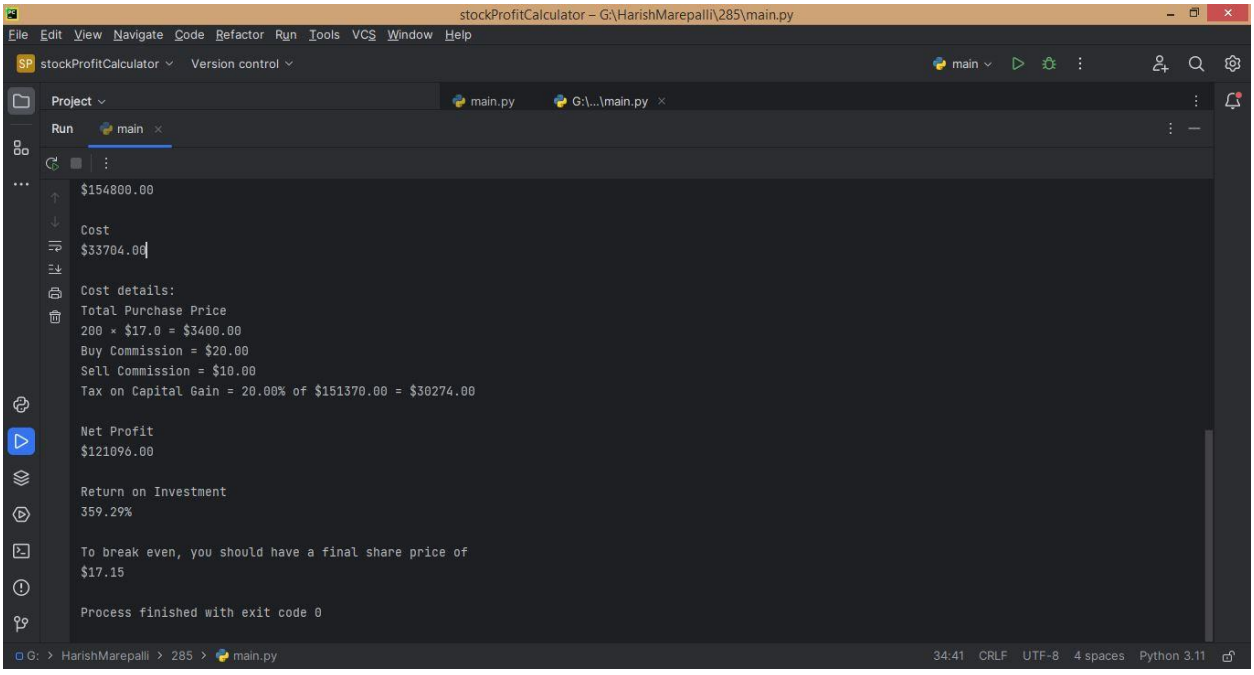
For Test case 2:



Console Snippet Test Case 2



Console Snippet Test Case 2



Console Snippet Test Case 2