Name:

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Program Description:

This program calculates the discounts on certain predetermined products with a certain percentage discount applied.

Functions used in the Program:

1. Calculate_discount

Description:

Calculates the discount amount based on the price and rate of the discount.

Parameters:

- Price, Discount rate - determines the set price and discount rate.

Variables:

- Discount_amount - is the rate of the discount being applied
- Price - the price of the item
- Discount_rate - The amount of the discount

Logical Steps:

1. Takes the price and the discount rate and multiplies them to get the total amount of the discount then returns the answer.

Returns:

- Returns the amount of the discount to be applied to the items cost before discount.

2. Apply_dicount

Description:

Applies the amount of the discount to the items total cost.

Parameters:

- Discount_amount, price - takes the price of the item and subtracts the discount amount.

Variables:

- New_price - the final price after the discount is applied

Logical Steps:

1. Takes the total price of the item and subtracts the discount amount found in the previous function to return the final price of said item.

Returns:

Returns the final price after discount

3. Main

Description:

Sets the price of all the items and the discount rate for each as well as calculating the final values and printing them for the user. As well as error handling for improper inputs in the product list.

Parameters:

- No parameters in main

Variables:

- Products - is the list of the products and the rate at which they are discounted.

Logical steps

1. Converts the variables into a printable format and floats to handle string input.
2. Prints the final product, original price, discount amount, and then the final price.
3. Then it handles errors with the product list by checking them for proper format from the list.

Logical Steps:

1. The interpreter executes the guard if name == "main": and calls main().

2. Inside main(), The program sets the products and the values as well as sets the discount rate for each.
3. Calls calculate_discount to find the discount amount based on the values set by main()
4. Calls apply_discount to apply the discount amount and return the final price of the items

List the order in which your functions are called.

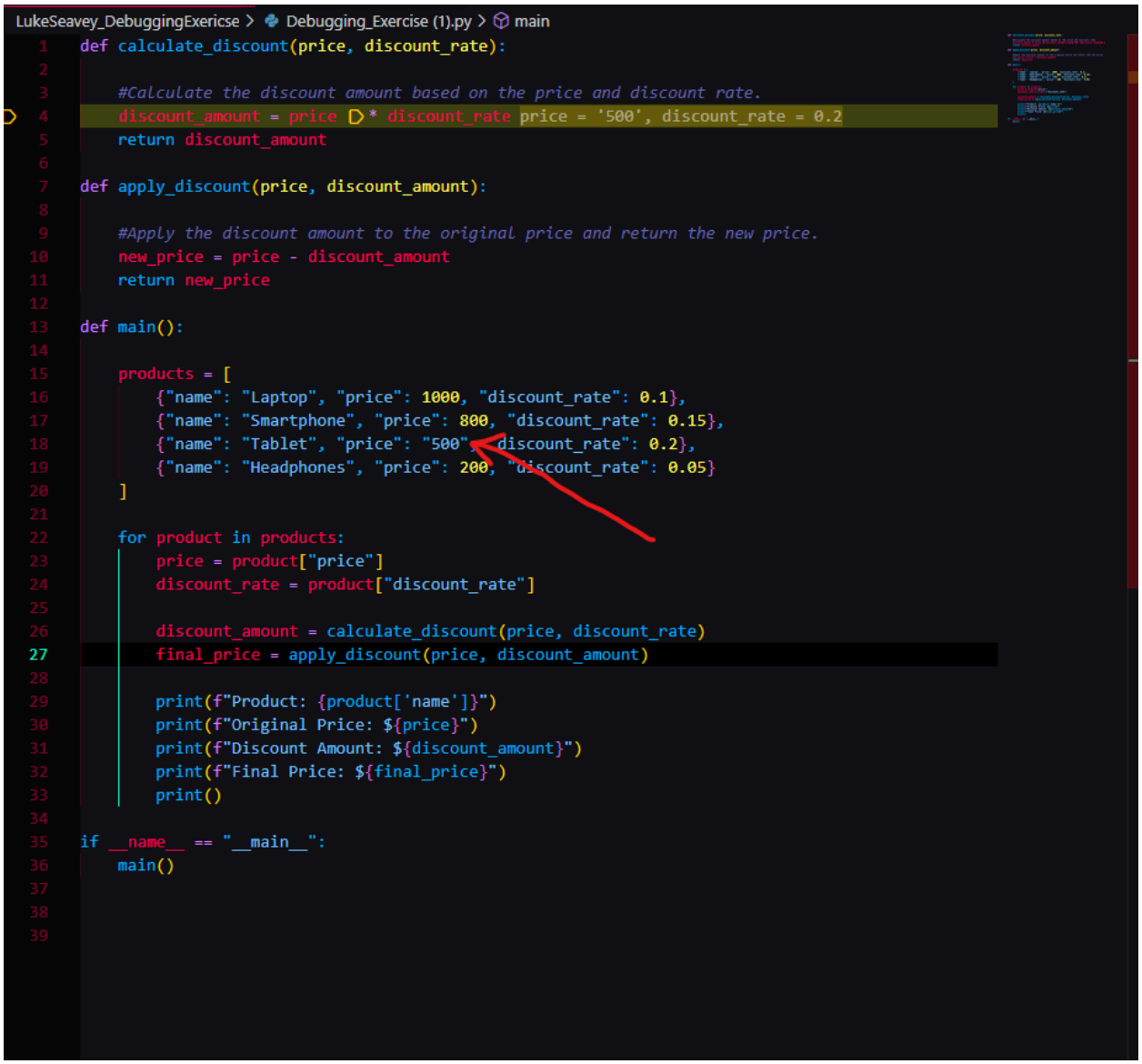
1. Main function is called to set products and discounts and error handling
2. calculate_ discounts is then called to calculate the discount amount.
3. Apply_discount is called to apply the discount amount to the product's starting price and return the final price.

Link to your repository:

https://github.com/FennecAce/COP2373/tree/637c486879f453678e3876d67ae9a9cbd39ec692/LukeSeavey_DebuggingExercise_1

Starting the debugging process I looked over the code for any immediate errors but didn't find any. I then ran the debugging tool and found that within main it was showing that a variable cant be multiplied by a float and saw that one of the products prices was input differently from the rest of the code. After reformatting the price I checked for other bugs but didn't find any. I then added error handling to account for missed inputs to the list. I also converted products to a float to account for strings of inputs.

Error Screenshot:


LukeSeavey_DebuggingExericse > Debugging_Exercise (1).py > main
def calculate_discount(price, discount_rate):
#Calculate the discount amount based on the price and discount rate.
discount_amount = price * discount_rate price = '500', discount_rate = 0.2
return discount_amount
def apply_discount(price, discount_amount):
#Apply the discount amount to the original price and return the new price.
new_price = price - discount_amount
return new_price
def main():
products = [
{"name": "Laptop", "price": 1000, "discount_rate": 0.1},
{"name": "Smartphone", "price": 800, "discount_rate": 0.15},
{"name": "Tablet", "price": "500" discount_rate": 0.2},
{"name": "Headphones", "price": 200, "discount_rate": 0.05}
]
for product in products:
price = product["price"]
discount_rate = product["discount_rate"]
discount_amount = calculate_discount(price, discount_rate)
final_price = apply_discount(price, discount_amount)
print(f"Product: {product['name']}")
print(f"Original Price: ${price}")
print(f"Discount Amount: ${discount_amount}")
print(f"Final Price: ${final_price}")
print()
if __name__ == "__main__":
main()