

# Planning & Design Document

## ALGORITHM

Set product\_price to \$100

Get input for name

Get input for quantity

sub\_total = product\_price \* quantity

Set discount\_percentage to 0

if quantity >= 100:

    discount\_percentage = 0.4

elif quantity >= 50:

    discount\_percentage = 0.3

elif quantity >= 20:

    discount\_percentage = 0.2

elif quantity >= 10:

    discount\_percentage = 0.1

discount\_amount = sub\_total \* discount\_percentage

total\_price = sub\_total - discount\_amount

Display name

Display quantity

Display discount price

Display sub total

Display discount amount

Display total price

## **VARIABLES/CONSTANTS**

product\_price (Int)

name (String)

quantity (Int)

sub\_total (Double)

discount\_percentage (Double)

discount\_amount (Double)

total\_price (Double)

## **FORMULAS**

$\text{sub\_total} = \text{product\_price} * \text{quantity}$

$\text{discount\_amount} = \text{sub\_total} * \text{discount\_percentage}$

$\text{total\_price} = \text{sub\_total} - \text{discount\_amount}$

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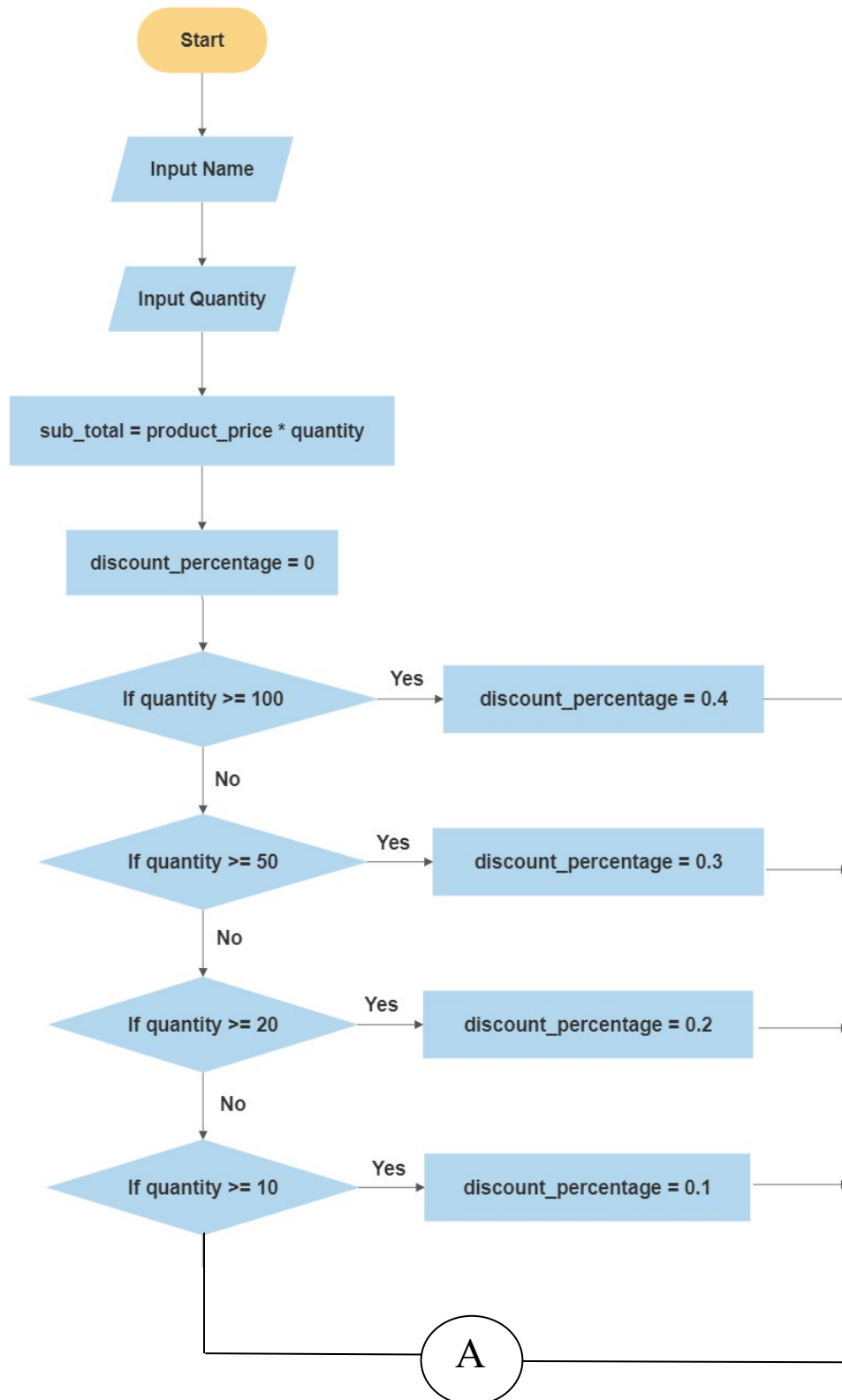
**TEST DATA – 5 complete data sets – Add additional columns as needed: One column for each input, one column for each process (not including decision structures), Only one column for the entire output.**

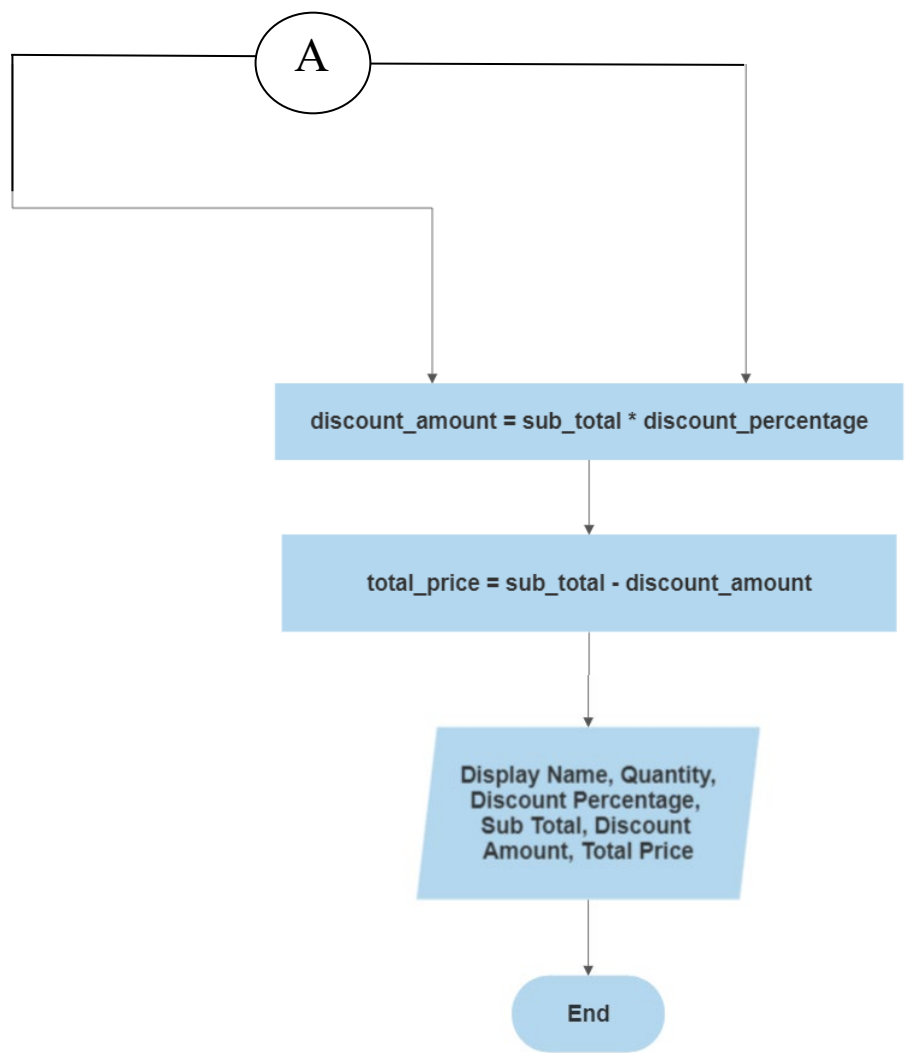
Name	Quantity	Output (Expected Results)
Clara	6	Name: Clara Quantity of Packages: 6 Discount Percentage: 0.00% Sub Total: \$600.00 Discount Amount: \$0.00 Total Price: \$600.00
John	17	Name: John Quantity of Packages: 17 Discount Percentage: 0.10% Sub Total: \$1700.00 Discount Amount: \$170.00 Total Price: \$1530.00
Michael	22	Name: Michael Quantity of Packages: 22 Discount Percentage: 0.20% Sub Total: \$2200.00 Discount Amount: \$440.00 Total Price: \$1760.00

Talia	70	Name: Talia Quantity of Packages: 70 Discount Percentage: 0.30% Sub Total: \$7000.00 Discount Amount: \$2100.00 Total Price: \$4900.00
Selina	245	Name: Selina Quantity of Packages: 245 Discount Percentage: 0.40% Sub Total: \$24500.00 Discount Amount: \$9800.00 Total Price: \$14700.00

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## FLOWCHART





## PYTHON CODE

```
product_price = 100

print("\n-----")
print("          SOFTWARE SALES")
print("-----\n")

name = input("Enter your name : ")
quantity = int(input("Enter number of packages : "))

sub_total = product_price * quantity
discount_percentage = 0

if quantity >= 100:
    discount_percentage = 0.4

elif quantity >= 50:
    discount_percentage = 0.3

elif quantity >= 20:
    discount_percentage = 0.2

elif quantity >= 10:
    discount_percentage = 0.1

discount_amount = sub_total * discount_percentage
total_price = sub_total - discount_amount

print(f"\nName: {name}")
print(f"Quantity of Packages: {quantity}")
print("Discount Percentage: {:.2f}%".format(discount_percentage))
print("Sub Total: ${:.2f}".format(sub_total))
print("Discount Amount: ${:.2f}".format(discount_amount))
print("Total Price: ${:.2f}".format(total_price))

print("\n-----")
print("          THANK YOU")
print("-----")
```

## TEST DATA EXECUTION RESULTS

```
-----  
SOFTWARE SALES  
-----  
  
Enter your name : Clara  
Enter number of packages : 6  
  
Name: Clara  
Quantity of Packages: 6  
Discount Percentage: 0.00%  
Sub Total: $600.00  
Discount Amount: $0.00  
Total Price: $600.00  
  
-----  
THANK YOU  
-----
```

```
-----  
SOFTWARE SALES  
-----  
  
Enter your name : John  
Enter number of packages : 17  
  
Name: John  
Quantity of Packages: 17  
Discount Percentage: 0.10%  
Sub Total: $1700.00  
Discount Amount: $170.00  
Total Price: $1530.00  
  
-----  
THANK YOU  
-----
```

```
-----  
SOFTWARE SALES  
-----  
  
Enter your name : Michael  
Enter number of packages : 37  
  
Name: Michael  
Quantity of Packages: 37  
Discount Percentage: 0.20%  
Sub Total: $3700.00  
Discount Amount: $740.00  
Total Price: $2960.00  
  
-----  
THANK YOU  
-----
```

```
-----  
SOFTWARE SALES  
-----  
  
Enter your name : Selina  
Enter number of packages : 70  
  
Name: Selina  
Quantity of Packages: 70  
Discount Percentage: 0.30%  
Sub Total: $7000.00  
Discount Amount: $2100.00  
Total Price: $4900.00  
  
-----  
THANK YOU  
-----
```



-----  
SOFTWARE SALES  
-----

Enter your name : *Talia*  
Enter number of packages : *134*

Name: Talia  
Quantity of Packages: 134  
Discount Percentage: 0.40%  
Sub Total: \$13400.00  
Discount Amount: \$5360.00  
Total Price: \$8040.00

-----  
THANK YOU  
-----

-----  
SOFTWARE SALES  
-----

Enter your name : *Carl*  
Enter number of packages : *1200*

Name: Carl  
Quantity of Packages: 1200  
Discount Percentage: 0.40%  
Sub Total: \$120000.00  
Discount Amount: \$48000.00  
Total Price: \$72000.00

-----  
THANK YOU  
-----