System Requirements Specification Index

For

Pizza Shop Calculator

Version 1.0

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1 PROJECT ABSTRACT

Pizza Paradise, a popular pizza chain, requires a calculator system that can handle various calculations involved in pizza ordering and delivery. The Pizza Shop Calculator is a Python console application developed to manage pricing, discounts, party orders, and a loyalty program. This system handles basic price calculations, applies percentage discounts, manages multiple pizza orders, splits bills among friends, calculates pizza requirements for parties, and maintains a loyalty points system. The application ensures accurate calculations for both individual orders and group events.

2 BUSINESS REQUIREMENTS:

Screen Name	Console input screen
Problem Statement	1. User needs to enter pizza prices and calculate total costs 2. The application should handle discounts and split billing 3. The console should handle different calculations using various arithmetic operators: - Addition (+) for combining prices, Subtraction (-) for applying discounts, Multiplication (_*) for multiple pizzas,_ Division (/) for splitting bills, Floor Division (//) for calculating whole pizzas needed, Modulus (%) for remaining slices, _Exponentiation (**_) for loyalty points Format output clearly with proper units

3 CONSTRAINTS

3.1 INPUT REQUIREMENTS

1. Base Price:
   - Must be stored as float in variable **base_price**
   - Must be non-negative
   - Example: 299.0
2. Toppings Cost:
   - Must be stored as float in **toppings_cost**
   - Must be non-negative
   - Example: 100.0
3. Discount:
   - Must be stored as float in **discount_percentage**
   - Must be between 0 and 100
   - Example: 20.0 (for 20%)
4. Pizza Quantity:
   - Must be stored as integer in quantity
   - Must be positive
   - Example: 2
5. Party Information:
   - -Must store number of people as integer in **total_people**
   - Must store slices per pizza as integer in **slices_per_pizza** (fixed at 8)
   - Both must be stored as positive integers
   - Example: **total_people** = 10, **slices_per_pizza** = 8
   - Must store result in **pizzas_needed**
   - Must store leftover calculation in **remaining_slices**

3.2 CALCULATION CONSTRAINTS

1. Total Price Calculation:
   - -Use addition operator (+)

   - Store result in total_price
   - Example: 299.0 + 100.0 = 399.0

2. Discount Calculation:
   - Use multiplication (*) and division (/) for percentage
   - Use subtraction (-) for final price
   - Store result in discounted_price
   - Example: 500 - (500 * 20/100) = 400
3. Multiple Pizza Cost:
   - Use multiplication operator (*)
   - Store result in multi_pizza_cost
   - Example: 399.0 * 2 = 798.0
4. Bill Splitting:
   - Use division operator (/)
   - Store result in cost_per_person
   - Example: 798.0 / 4 = 199.50
5. Pizza Party Calculation:
   - Use division operator (/)
   - Use floor division (//) for pizzas_needed
   - Use modulus (%) for remaining_slices
   - Example: For 10 people (30 slices needed): -
     - pizzas_needed = 30 // 8 = 3 (with 8 slices per pizza)
     - remaining_slices = 24 % 30 = 6
6. Loyalty Points:
   - Use exponentiation operator (**)
   - Store result in loyalty_points
   - **Example:** 2 ** 3 = 8 points for 3 visits

3.3 OUTPUT CONSTRAINTS

1. Display Format:

- Show all prices in ₹ with 2 decimal places
- Each calculation must be on a new line
- Show clear labels for each value

2. Required Output Format:

- Show "Total Cost: ₹{value}"
- Show "Cost Per Person: ₹{value}"
- Show "Pizzas Needed: {value}"
- Show "Remaining Slices: {value}"
- Show "Loyalty Points Earned: {value}"

4. TEMPLATE CODE STRUCTURE:

1. Calculation Functions:

- calculate_total_price() [+]
- apply_discount() [*, /, -]
- calculate_multi_pizza_cost() [*]
- split_bill() [/] - calculate_pizzas_needed() [//]
- calculate_remaining_slices() [%]
- calculate_loyalty_points() [**]

2. Input Section:

- Get base price (float)
- Get toppings cost (float)
- Get discount if applicable (float)
- Get quantity (int)
- Get number of friends (int)
- Get party size (int)
- Get visit count (int)

3. Conversion Section:

- Calculate total price
- Apply discount if needed
- Calculate multiple pizza cost
- Split bill - Calculate party requirements
- Calculate loyalty points

4. Output Section:

- Display all calculated values
- Format currency values properly
- Show party calculations
- Display loyalty points

5. EXECUTION STEPS TO FOLLOW:

1. Run the program
2. Enter pizza base price
3. Enter toppings cost
4. Choose whether to apply discount
5. Enter discount percentage if applicable
6. Enter number of pizzas
7. Enter number of friends for splitting
8. Enter party size if planning a party
9. Enter number of previous visits
10. 10. View complete order summary