

# Pizza Store Application

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## 1. Use Case Diagram and Class Diagram:

Submit the use case diagram and class diagram in either PDF or PNG format.

### 1.1 Use Case Diagram:

Refer to the use\_case.png

### 1.2 Class Diagram

Refer to the class\_diagram.png

## 2. Python Source Code and Data Files

Provide the complete Python source code and any associated data files required for program execution

Refer to the .py files in the folder

## 3. Program Execution Instructions

Include clear and detailed instructions on how to run the program. Ensure that testers can execute the program without entering all data manually. Verify that all necessary data is stored in the data files.

### 3.1 Main Menu:

```
1. Recipe Management
2. Inventory Management
3. Menu Management
4. Customized Pizza Menu Management
5. Side Dish Management
6. Order Management
0. Exit
Enter command: 1
```

1. Recipe Management
2. Inventory Management
3. Menu Management
4. Customized Pizza Menu Management
5. Side Dish Management
6. Order Management
0. Exit

### 3.2 Recipe Management Menu

```
1. Add Recipe
2. Update Recipe
3. Remove Recipe
4. Search Recipe By Name
5. Print Recipes
6. Exit
```

1. Add Recipe
2. Update Recipe
3. Remove Recipe
4. Search Recipe By Name
5. Print Recipes
6. Exit

### 3.3 Inventory Management Menu

```
1. Add Ingredient
2. Update Ingredient
3. Remove Ingredient
4. Check Reorder Levels
5. Print Inventory
6. Use Ingredient By Recipe
7. Search Ingredient By Name
8. Exit
```

1. Add Ingredient
2. Update Ingredient
3. Remove Ingredient

4. Check Reorder Levels
5. Print Inventory
6. Use Ingredient By Recipe
7. Search Ingredient By Name
8. Exit

### 3.4 Menu Management Menu

```
1. Add Menu
2. Update Menu
3. Remove Menu
4. Get Menu By Type
5. Get Menu By Size
6. Print Menu
7. Exit
```

1. Add Menu
2. Update Menu
3. Remove Menu
4. Get Menu By Type
5. Get Menu By Size
6. Print Menu
7. Exit

### 3.5 Customized Pizza Menu Management Menu

```
1. Add customized pizza ingredient option
2. Update customized pizza ingredient option
3. Remove customized pizza ingredient option
4. Print all pizza base options
5. Print all pizza sauce options
6. Print all pizza topping options
7. Print all pizza additional ingredients options
8. Print all pizza options
0. Exit
```

1. Add customized pizza ingredient option
2. Update customized pizza ingredient option
3. Remove customized pizza ingredient option
4. Print all pizza base options
5. Print all pizza sauce options
6. Print all pizza topping options
7. Print all pizza additional ingredients options
8. Print all pizza options
0. Exit

### 3.6 Side Dish Management Menu

```
1. Add Side Dish
2. Update Side Dish
3. Remove Side Dish
4. Get Side Dish By Type
5. Print All Side Dishes
0. Exit
```

1. Add Side Dish
2. Update Side Dish
3. Remove Side Dish
4. Get Side Dish By Type
5. Print All Side Dishes
0. Exit

### 3.7 Order Management Menu

```
1. Add Order
2. Display Order Details
3. Generate order slips for kitchen staff
0. Exit
```

1. Add Order
2. Display Order Details
3. Generate order slips for kitchen staff
0. Exit

## 4. Test Cases and Results

Submit a comprehensive document containing your test cases and corresponding test results. Each test case should have a detailed description, the expected outcome, and the actual outcome, including screenshots if applicable.

### 4.1. Recipe Mangement

Red frames are user inputs, green frames are execution result

1. Enter menu management menu: enter command 1 in main menu

```
1. Recipe Management
2. Inventory Management
3. Menu Management
4. Customized Pizza Menu Management
```

```
Enter command: 1
1. Add Recipe
2. Update Recipe
3. Remove Recipe
4. Search Recipe By Name
5. Print Recipes
6. Exit
```

## 2. Add Recipe: enter command 1

```
1. Add Recipe
2. Update Recipe
3. Remove Recipe
4. Search Recipe By Name
5. Print Recipes
6. Exit
Enter command: 1
Enter recipe name: aa
Enter ingredient name: bb
Enter quantity: 1.0
Enter unit: kg
Enter reorder level: 1
Do you want to add more ingredients? (y/n): n
Recipe has been added!
1. Add Recipe
2. Update Recipe
3. Remove Recipe
4. Search Recipe By Name
5. Print Recipes
6. Exit
Enter command: 5
{'name': 'aa', 'ingredients': [{'name': 'bb', 'quantity': 1.0, 'unit': 'kg', 'reorder_level': 1}]}
```

To see the added recipe, please refer to the next use case

## 3. Search Recipe by name: enter command 4

```
1. Add Recipe
2. Update Recipe
3. Remove Recipe
4. Search Recipe By Name
5. Print Recipes
6. Exit
Enter command: 4
Enter the recipe name you want to search: aa
{'name': 'aa', 'ingredients': [{'name': 'bb', 'quantity': 1.0, 'unit': 'kg', 'reorder_level': 1}]}
```

#### 4. Update Recipe: enter command 2

```
1. Add Recipe
2. Update Recipe
3. Remove Recipe
4. Search Recipe By Name
5. Print Recipes
6. Exit
Enter command: 2
Enter the recipe name you want to update: aa
Enter ingredient name you want to update: bb
1. Update quantity
2. Update unit
3. Update reorder level
4. Exit
Enter command: 1
Enter quantity: 4.0
1. Update quantity
2. Update unit
3. Update reorder level
4. Exit
Enter command: 2
Enter unit: g
1. Update quantity
2. Update unit
3. Update reorder level
4. Exit
Enter command: 3
Enter reorder level: 2
1. Update quantity
2. Update unit
3. Update reorder level
4. Exit
Enter command: 4
Recipe has been updated!
```

#### 5. Remove Recipe: enter command 3

Use case 1: recipe is found

```
1. Add Recipe
2. Update Recipe
3. Remove Recipe
4. Search Recipe By Name
5. Print Recipes
6. Exit
Enter command: 3
Enter the recipe name you want to remove: aa
Recipe has been removed!
1. Add Recipe
2. Update Recipe
3. Remove Recipe
4. Search Recipe By Name
5. Print Recipes
6. Exit
Enter command: 5
No recipes!
```

Use case 2: recipe is not found

```
1. Add Recipe
2. Update Recipe
3. Remove Recipe
4. Search Recipe By Name
5. Print Recipes
6. Exit
Enter command: 3
Enter the recipe name you want to remove: cc
Recipe not found!
```

6. Print all recipes: enter command 5

```
1. Add Recipe
2. Update Recipe
3. Remove Recipe
4. Search Recipe By Name
5. Print Recipes
6. Exit
Enter command: 5
{'name': 'aa', 'ingredients': [{'name': 'bb', 'quantity': 1.0, 'unit': 'kg', 'reorder_level': 1}]}
```

7. Exit: enter command 6 to exit to main men

```
1. Add Recipe
2. Update Recipe
3. Remove Recipe
4. Search Recipe By Name
5. Print Recipes
6. Exit
Enter command: 6
1. Recipe Management
2. Inventory Management
3. Menu Management
4. Customized Pizza Menu Management
0. Exit
```

## 4.2. Inventory Mangement

Red frames are user inputs, green frames are execution result



1. Enter inventory management menu: Enter command 2 in main menu

```
1. Recipe Management
2. Inventory Management
3. Menu Management
4. Customized Pizza Menu Management
5. Side Dish Management
6. Order Management
0. Exit
Enter command: 2
1. Add Ingredient
2. Update Ingredient
3. Remove Ingredient
4. Check Reorder Levels
5. Print Inventory
6. Use Ingredient By Recipe
7. Search Ingredient By Name
8. Exit
Enter command: █
```

2. Add Inventory: Enter command 1

```
1. Add Ingredient
2. Update Ingredient
3. Remove Ingredient
4. Check Reorder Levels
5. Print Inventory
6. Use Ingredient By Recipe
7. Search Ingredient By Name
8. Exit
Enter command: 1
Enter ingredient name: aa
Enter quantity: 1
Enter unit: kg
Enter reorder level: 1
Ingredient has been added!
```

3. Update Menu: Enter command 1

```
Enter ingredient name you want to update: aa
1. Update quantity
2. Update unit
3. Update reorder level
4. Exit
Enter command: 1
Enter quantity: 3
1. Update quantity
2. Update unit
3. Update reorder level
4. Exit
Enter command: 4
Ingredient has been updated!
```

4. Print Inventory: enter command 5

```
1. Add Ingredient
2. Update Ingredient
3. Remove Ingredient
4. Check Reorder Levels
5. Print Inventory
6. Use Ingredient By Recipe
7. Search Ingredient By Name
8. Exit
Enter command: 5
{'name': 'bb', 'quantity': 0.5, 'unit': 'l', 'reorder_level': 1}
{'name': 'cc', 'quantity': 0.3999999999999999, 'unit': 'l', 'reorder_level': 1}
{'name': 'aa', 'quantity': 3.0, 'unit': 'kg', 'reorder_level': 1}
```

5. Check Reorder Levels: enter command 4

```
1. Add Ingredient
2. Update Ingredient
3. Remove Ingredient
4. Check Reorder Levels
5. Print Inventory
6. Use Ingredient By Recipe
7. Search Ingredient By Name
8. Exit
Enter command: 4
Low stock for bb! Current stock: 0.5
Low stock for cc! Current stock: 0.3999999999999999
1. Add Ingredient
2. Update Ingredient
3. Remove Ingredient
4. Check Reorder Levels
5. Print Inventory
6. Use Ingredient By Recipe
7. Search Ingredient By Name
8. Exit
Enter command: 
```

6. Use Ingredient By Recipe: enter command 6

```
1. Add Ingredient
2. Update Ingredient
3. Remove Ingredient
4. Check Reorder Levels
5. Print Inventory
6. Use Ingredient By Recipe
7. Search Ingredient By Name
8. Exit
Enter command: 6
Enter the recipe name you want to use: aa
Ingredient has been used!
Low stock for bb! Current stock: -4.5
Low stock for cc! Current stock: 0.3999999999999999
1. Add Ingredient
2. Update Ingredient
3. Remove Ingredient
4. Check Reorder Levels
5. Print Inventory
6. Use Ingredient By Recipe
7. Search Ingredient By Name
8. Exit
```

7. Search Ingredient By Name: enter command 7

```
1. Add Ingredient
2. Update Ingredient
3. Remove Ingredient
4. Check Reorder Levels
5. Print Inventory
6. Use Ingredient By Recipe
7. Search Ingredient By Name
8. Exit
Enter command: 7
Enter the ingredient name you want to search: aa
{'name': 'aa', 'quantity': 3.0, 'unit': 'kg', 'reorder_level': 1}
```

8. Remove Ingredient: enter command 3

```
1. Add Ingredient
2. Update Ingredient
3. Remove Ingredient
4. Check Reorder Levels
5. Print Inventory
6. Use Ingredient By Recipe
7. Search Ingredient By Name
8. Exit
Enter command: 3
Enter the ingredient name you want to remove: aa
Ingredient has been removed!
```

## 4.3. Menu Mangement

Red frames are user inputs, green frames are execution result

1. Enter menu management menu: Enter command 3 in main menu

```
1. Recipe Management
2. Inventory Management
3. Menu Management
```

```
Enter command: 3
1. Add Menu
2. Update Menu
3. Remove Menu
4. Get Menu By Type
5. Get Menu By Size
6. Print Menu
7. Exit
Enter command: █
```

2. Add Menu: Enter command 1

```
1. Add Menu
2. Update Menu
3. Remove Menu
4. Get Menu By Type
5. Get Menu By Size
6. Print Menu
7. Exit
Enter command: 1
Enter menu name: aa
Enter menu description: desc
Enter menu price: 1.00
Enter menu size: 1. Medium 2. Large 3. Extra Large: 1
Enter menu type: 1. Regular 2. Sicilian: 1
Enter ingredients (separated by comma): a,d,v
Menu has been added!
```

9. Update Menu: Enter command 2

```

Enter menu price: 3.00
1. Update menu description
2. Update menu price
3. Update menu size
4. Update menu type
5. Update ingredients
6. Exit
Enter command: 3
Enter the menu size you want to search: 1. Medium 2. Large 3. Extra Large: 2
1. Update menu description
2. Update menu price
3. Update menu size
4. Update menu type
5. Update ingredients
6. Exit
Enter command: 4
Enter the menu type you want to search: 1. Regular 2. Sicilian: 2
1. Update menu description
2. Update menu price
3. Update menu size
4. Update menu type
5. Update ingredients
6. Exit
Enter command: 5
Enter ingredients (separated by comma): i,g
1. Update menu description
2. Update menu price
3. Update menu size
4. Update menu type
5. Update ingredients
6. Exit
Enter command: 6
Menu has been updated!
1. Add Menu
2. Update Menu
3. Remove Menu
4. Get Menu By Type
5. Get Menu By Size
6. Print Menu
7. Exit
Enter command: 6
{'name': 'aa', 'description': 'desc2', 'price': 3.0, 'size': 'LARGE', 'ingredients': 'i,g', 'type': 'SICILIAN'}

```

## 10. Get Menu By Type: Enter command 4

Case1: find results

```

1. Add Menu
2. Update Menu
3. Remove Menu
4. Get Menu By Type
5. Get Menu By Size
6. Print Menu
7. Exit
Enter command: 4
Enter the menu type you want to search: 1. Regular 2. Sicilian: 2
{'name': 'aa', 'description': 'desc2', 'price': 3.0, 'size': 'LARGE', 'ingredients': 'i,g', 'type': 'SICILIAN'}

```

Case2: don't find results

1. Add Menu
2. Update Menu
3. Remove Menu
4. Get Menu By Type
5. Get Menu By Size
6. Print Menu
7. Exit

Enter command: 4

Enter the menu type you want to search: 1. Regular 2. Sicilian: 1

Menu not found!

## 11. Get Menu By Size: Enter command 5

Case1: find results

1. Add Menu
2. Update Menu
3. Remove Menu
4. Get Menu By Type
5. Get Menu By Size
6. Print Menu
7. Exit

Enter command: 5

Enter the menu size you want to search: 1. Medium 2. Large 3. Extra Large: 2

{'name': 'aa', 'description': 'desc2', 'price': 3.0, 'size': 'LARGE', 'ingredients': 'i,g', 'type': 'SICILIAN'}

Case2: don't find results

1. Add Menu
2. Update Menu
3. Remove Menu
4. Get Menu By Type
5. Get Menu By Size
6. Print Menu
7. Exit

Enter command: 5

Enter the menu size you want to search: 1. Medium 2. Large 3. Extra Large: 3

Menu not found!

## 12. Print all menus: Enter command 6

1. Add Menu
2. Update Menu
3. Remove Menu
4. Get Menu By Type
5. Get Menu By Size
6. Print Menu
7. Exit

Enter command: 6

{'name': 'aa', 'description': 'desc2', 'price': 3.0, 'size': 'LARGE', 'ingredients': 'i,g', 'type': 'SICILIAN'}

13. Remove Menu: Enter command 3

```
1. Add Menu
2. Update Menu
3. Remove Menu
4. Get Menu By Type
5. Get Menu By Size
6. Print Menu
7. Exit
Enter command: 3
Enter the menu name you want to remove: aa
Menu has been removed!
```

14. Exit to main menu: enter command 7

```
1. Add Menu
2. Update Menu
3. Remove Menu
4. Get Menu By Type
5. Get Menu By Size
6. Print Menu
7. Exit
Enter command: 7
1. Recipe Management
2. Inventory Management
3. Menu Management
```

## 4.4 Customized Pizza Menu Management

Red frames are user inputs, green frames are execution result

1. Enter menu management menu: Enter command 4 in main menu

```
1. Recipe Management
2. Inventory Management
3. Menu Management
4. Customized Pizza Menu Management
Enter command: 4
1. Add customized pizza ingredient option
2. Update customized pizza ingredient option
3. Remove customized pizza ingredient option
4. Print all pizza base options
5. Print all pizza sauce options
6. Print all pizza topping options
7. Print all pizza additional ingredients options
8. Print all pizza options
0. Exit
```

2. Print all customized options: Enter command 8

```
1. Add customized pizza ingredient option
2. Update customized pizza ingredient option
3. Remove customized pizza ingredient option
4. Print all pizza base options
5. Print all pizza sauce options
6. Print all pizza topping options
7. Print all pizza additional ingredients options
8. Print all pizza options
0. Exit
Enter command: 8
Pizza bases:
Thin - $1.0
Thick - $2.0

Pizza sauces:
Tomato - $1.0
BBQ - $1.0
Garlic - $1.0

Pizza toppings:
Pepperoni - $1.0
Ham - $1.0
Bacon - $1.0
Mushrooms - $1.0
Onion - $1.0
Black_olives - $1.0
Tomato_slices - $1.0
Pineapple - $1.0

Pizza add_ingredients:
Extra_cheese - $1.0
Extra_meat - $1.0
Extra_veggies - $1.0
```

3. Add option: enter command 1

```
1. Add customized pizza ingredient option
2. Update customized pizza ingredient option
3. Remove customized pizza ingredient option
4. Print all pizza base options
5. Print all pizza sauce options
6. Print all pizza topping options
7. Print all pizza additional ingredients options
8. Print all pizza options
0. Exit
Enter command: 1
Enter the option type you want to add: 1. Bases 2. Sauce 3. Toppings 4. Additional Ingredients: 1
Enter option name: aa
Enter option price: 2.00
Add option has been done!
```

Enter command 4 to print base options. The results have included the added option:



```
1. Add customized pizza ingredient option
2. Update customized pizza ingredient option
3. Remove customized pizza ingredient option
4. Print all pizza base options
5. Print all pizza sauce options
6. Print all pizza topping options
7. Print all pizza additional ingredients options
8. Print all pizza options
0. Exit
Enter command: 4
Pizza bases:
Thin - $1.0
Thick - $2.0
aa - $2.0
```

4. Update an option: enter command 2

```
1. Add customized pizza ingredient option
2. Update customized pizza ingredient option
3. Remove customized pizza ingredient option
4. Print all pizza base options
5. Print all pizza sauce options
6. Print all pizza topping options
7. Print all pizza additional ingredients options
8. Print all pizza options
0. Exit
Enter command: 2
Enter the option type you want to update: 1. Bases 2. Sauces 3. Toppings 4. Additional Ingredients: 1
Enter the option name you want to update: aa
Enter option price: 4.00
Update option has been done!
```

Enter command 4 to print base options. The results have included the updated option:

```
1. Add customized pizza ingredient option
2. Update customized pizza ingredient option
3. Remove customized pizza ingredient option
4. Print all pizza base options
5. Print all pizza sauce options
6. Print all pizza topping options
7. Print all pizza additional ingredients options
8. Print all pizza options
0. Exit
Enter command: 4
Pizza bases:
Thin - $1.0
Thick - $2.0
aa - $4.0
```

5. Remove an option: enter command 3

```
1. Add customized pizza ingredient option
2. Update customized pizza ingredient option
3. Remove customized pizza ingredient option
4. Print all pizza base options
5. Print all pizza sauce options
6. Print all pizza topping options
7. Print all pizza additional ingredients options
8. Print all pizza options
0. Exit
Enter command: 3
Enter the option type you want to remove: 1. Bases 2. Sauces 3. Toppings 4. Additional Ingredients: 1
Enter the option name you want to remove: aa
Remove option has been done!
```

Enter command 4 to print base options. The results have removed the option:

```
1. Add customized pizza ingredient option
2. Update customized pizza ingredient option
3. Remove customized pizza ingredient option
4. Print all pizza base options
5. Print all pizza sauce options
6. Print all pizza topping options
7. Print all pizza additional ingredients options
8. Print all pizza options
0. Exit
Enter command: 4
Pizza bases:
Thin - $1.0
Thick - $2.0
```

6. Print all pizza base options: enter command 4

```
1. Add customized pizza ingredient option
2. Update customized pizza ingredient option
3. Remove customized pizza ingredient option
4. Print all pizza base options
5. Print all pizza sauce options
6. Print all pizza topping options
7. Print all pizza additional ingredients options
8. Print all pizza options
0. Exit
Enter command: 4
Pizza bases:
Thin - $1.0
Thick - $2.0
```

7. Print all pizza sauce options: enter command 5

```
1. Add customized pizza ingredient option
2. Update customized pizza ingredient option
3. Remove customized pizza ingredient option
4. Print all pizza base options
5. Print all pizza sauce options
6. Print all pizza topping options
7. Print all pizza additional ingredients options
8. Print all pizza options
0. Exit
Enter command: 5
Pizza sauces:
Tomato - $1.0
BBQ - $1.0
Garlic - $1.0
```

8. Print all pizza topping options: enter command 6

```
1. Add customized pizza ingredient option
2. Update customized pizza ingredient option
3. Remove customized pizza ingredient option
4. Print all pizza base options
5. Print all pizza sauce options
6. Print all pizza topping options
7. Print all pizza additional ingredients options
8. Print all pizza options
0. Exit
Enter command: 6
Pizza toppings:
Pepperoni - $1.0
Ham - $1.0
Bacon - $1.0
Mushrooms - $1.0
Onion - $1.0
Black_olives - $1.0
Tomato_slices - $1.0
Pineapple - $1.0
```

9. Print all pizza additional options: enter command 7

```
1. Add customized pizza ingredient option
2. Update customized pizza ingredient option
3. Remove customized pizza ingredient option
4. Print all pizza base options
5. Print all pizza sauce options
6. Print all pizza topping options
7. Print all pizza additional ingredients options
8. Print all pizza options
0. Exit
Enter command: 7
Pizza add_ingredients:
Extra_cheese - $1.0
Extra_meat - $1.0
Extra_veggies - $1.0
```

10. Exit to main menu: enter command 0

```
1. Add customized pizza ingredient option
2. Update customized pizza ingredient option
3. Remove customized pizza ingredient option
4. Print all pizza base options
5. Print all pizza sauce options
6. Print all pizza topping options
7. Print all pizza additional ingredients options
8. Print all pizza options
0. Exit
Enter command: 0
1. Recipe Management
2. Inventory Management
3. Menu Management
4. Customized Pizza Menu Management
0. Exit
Enter command: █
```

## 4.5 Customized Pizza Menu Management

Red frames are user inputs, green frames are execution result

1. Enter menu management menu: Enter command 5 in main menu

```
1. Recipe Management
2. Inventory Management
3. Menu Management
4. Customized Pizza Menu Management
5. Side Dish Management
```

```
Enter command: 5
1. Add Side Dish
2. Update Side Dish
3. Remove Side Dish
4. Get Side Dish By Type
5. Print All Side Dishes
0. Exit
```

## 2. Add Side Dish: Enter command 1

```
1. Add Side Dish
2. Update Side Dish
3. Remove Side Dish
4. Get Side Dish By Type
5. Print All Side Dishes
0. Exit
Enter command: 1
Enter side dish name: aa
Enter side dish description: desc
Enter side dish price: 1.00
Enter the side dish type: 1. Appetizers 2. Desserts 3. Beverages: 1
Add side dish has been done!
1. Add Side Dish
2. Update Side Dish
3. Remove Side Dish
4. Get Side Dish By Type
5. Print All Side Dishes
0. Exit
Enter command: 5
{'name': 'aa', 'description': 'desc', 'price': 1.0, 'type': 'APPETIZERS'}
```

## 3. Update Side Dish: Enter command 2

```
1. Add Side Dish
2. Update Side Dish
3. Remove Side Dish
4. Get Side Dish By Type
5. Print All Side Dishes
0. Exit
Enter command: 2
Enter side dish name you want to update: aa
Enter side dish description: bb
Enter side dish price: 3.00
Enter the side dish type: 1. Appetizers 2. Desserts 3. Beverages: 3
Update side dish has been done!
1. Add Side Dish
2. Update Side Dish
3. Remove Side Dish
4. Get Side Dish By Type
5. Print All Side Dishes
0. Exit
Enter command: 5
{'name': 'aa', 'description': 'bb', 'price': 3.0, 'type': 'BEVERAGES'}
```

4. Remove Side Dish: Enter command 3

```
1. Add Side Dish
2. Update Side Dish
3. Remove Side Dish
4. Get Side Dish By Type
5. Print All Side Dishes
0. Exit
Enter command: 3
Enter the side dish name you want to remove: aa
Remove side dish has been done!
1. Add Side Dish
2. Update Side Dish
3. Remove Side Dish
4. Get Side Dish By Type
5. Print All Side Dishes
0. Exit
Enter command: 5
No side dishes!
```

5. Get Side Dish By Type: Enter command 4

Use case 1: find side dish:

```
1. Add Side Dish
2. Update Side Dish
3. Remove Side Dish
4. Get Side Dish By Type
5. Print All Side Dishes
0. Exit
Enter command: 4
Enter the side dish type: 1. Appetizers 2. Desserts 3. Beverages: 3
{'name': 'aa', 'description': 'bb', 'price': 3.0, 'type': 'BEVERAGES'}
```

Use case 2: can't find side dish

```
1. Add Side Dish
2. Update Side Dish
3. Remove Side Dish
4. Get Side Dish By Type
5. Print All Side Dishes
0. Exit
Enter command: 4
Enter the side dish type: 1. Appetizers 2. Desserts 3. Beverages: 2
Side dish not found!
```

6. Print All Side Dishes: Enter command 5

```
1. Add Side Dish
2. Update Side Dish
3. Remove Side Dish
4. Get Side Dish By Type
5. Print All Side Dishes
0. Exit
Enter command: 5
{'name': 'aa', 'description': 'bb', 'price': 3.0, 'type': 'BEVERAGES'}
```

7. Exit to main menu: Enter command 0

```
1. Add Side Dish
2. Update Side Dish
3. Remove Side Dish
4. Get Side Dish By Type
5. Print All Side Dishes
0. Exit
Enter command: 0
1. Recipe Management
2. Inventory Management
3. Menu Management
4. Customized Pizza Menu Management
5. Side Dish Management
```

## 4.6 Order Management

Red frames are user inputs, green frames are execution result

1. Enter order management menu: Enter command 6 in main menu

```
1. Recipe Management
2. Inventory Management
3. Menu Management
4. Customized Pizza Menu Management
5. Side Dish Management
6. Order Management
0. Exit
Enter command: 6
1. Add Order
2. Display Order Details
3. Generate order slips for kitchen staff
0. Exit
Enter command: █
```

## 2. Add Side Dish: Enter command 1

```
1. Add Order
2. Display Order Details
3. Generate order slips for kitchen staff
0. Exit
Enter command: 1
Do you want order standard pizzas? (y/n) 1. order standard pizza
Enter command: y
Please select the menu name for your pizza:
Name: aa, Description: b, Price: 1.0, Size: MEDIUM, Ingredients: a,d,f, Type: SICILIAN

Enter the menu name: aa
Enter quantity: 1
Do you want to add more standard pizzas? (y/n)
Enter command: n
Do you want order customized pizzas? (y/n) 2. order customized pizza
Enter command: y

Please select the base name for your pizza: a. select pizza base
Name: Thin, Price: $1.0
Name: Thick, Price: $2.0

Enter the base name: Thin

Please select the sause name for your pizza: b. select pizza sause
Name: Tomato, Price: $1.0
Name: BBQ, Price: $1.0
Name: Garlic, Price: $1.0

Enter the sause name: BBQ

Please select the topping name for your pizza: c. select pizza toppings
Name: Pepperoni, Price: $1.0
Name: Ham, Price: $1.0
Name: Bacon, Price: $1.0
Name: Mushrooms, Price: $1.0
Name: Onion, Price: $1.0
Name: Black_olives, Price: $1.0
Name: Tomato_slices, Price: $1.0
Name: Pineapple, Price: $1.0

Enter the topping name: Ham
Enter quantity: 1
```



Enter the topping name: Ham  
Enter quantity: 1  
Do you want to add more topping? (y/n)  
Enter command: y

c1. select first topping

Please select the topping name for your pizza:

Name: Pepperoni, Price: \$1.0  
Name: Ham, Price: \$1.0  
Name: Bacon, Price: \$1.0  
Name: Mushrooms, Price: \$1.0  
Name: Onion, Price: \$1.0  
Name: Black\_olives, Price: \$1.0  
Name: Tomato\_slices, Price: \$1.0  
Name: Pineapple, Price: \$1.0

Enter the topping name: Bacon  
Enter quantity: 3  
Do you want to add more topping? (y/n)  
Enter command: n

c1. select second topping

Please select the additional ingredient name for your pizza:

Name: Extra\_cheese, Price: \$1.0  
Name: Extra\_meat, Price: \$1.0  
Name: Extra\_veggies, Price: \$1.0

Enter the additional ingredient name: Extra\_cheese  
Enter quantity: 2  
Do you want to add more additional ingredient? (y/n)  
Enter command: n

d. select addition ingredients

Do you want to add more customized pizzas? (y/n)  
Enter command: n  
Do you want order side dishes? (y/n)  
Enter command: y

Name: aa, Description: dd, Price: \$3.0, Type: APPETIZERS

Enter the side dish name you want to order: aa  
Enter quantity: 3  
Do you want to add more side dishes? (y/n)  
Enter command: n

3. order side dishes

Do you want to display the order details? (y/n)

Enter the side dish name you want to order: aa

Enter quantity: 3

Do you want to add more side dishes? (y/n)

Enter command: n

Do you want to display the order details? (y/n)y

Display the order details

Order details:

Standard pizzas:

Name: aa, Description: b, Price: \$1.0, Size: MEDIUM, Type: SICILIAN

Sub Total: \$1.0

Customized pizzas:

Base: Thin

Sause: BBQ

Toppings:

Name: Ham, Price: \$1.0, Quantity: 1, Total: \$1.0

Name: Bacon, Price: \$1.0, Quantity: 3, Total: \$3.0

Additional ingredients:

Name: Extra\_cheese, Price: \$1.0, Quantity: 2, Total: \$2.0

Sub Total: \$8.0

Side dishes:

Name: aa, Description: dd, Price: \$3.0, Type: APPETIZERS

Sub Total: \$3.0

Total: \$12.0

Add order has been done!

1. Add Order

2. Display Order Details

3. Generate order slips for kitchen staff

0. Exit

Enter command: █

### 3. Generate order slips for kitchen staff: Enter command 3

```
1. Add Order
2. Display Order Details
3. Generate order slips for kitchen staff
0. Exit
Enter command: 3
Please select the order id:
0
1
2
3
4
5
Enter the order id: 5
Order ID: 5
    Standard Pizzas:
        Name: aa, Size: MEDIUM, Type: SICILIAN
        Recipe: Name: aa, Ingredients: {'name': 'bb', 'quantity': 5.0, 'unit': 'kg', 'reorder_level': 1},
    Customized Pizzas:
        Base: Thin
        Sauce: BBQ
        Toppings:
            Name: Ham, Quantity: 1
            Name: Bacon, Quantity: 3
        Added Ingredients:
            Name: Extra_cheese, Quantity: 2
    Side Dishes:
        Name: aa, Quantity: 3

1. Add Order
2. Display Order Details
3. Generate order slips for kitchen staff
0. Exit
Enter command: 
```

### 4. Exit to main menu: Enter command 0

```
1. Add Order
2. Display Order Details
3. Generate order slips for kitchen staff
0. Exit
Enter command: 0
1. Recipe Management
2. Inventory Management
3. Menu Management
4. Customized Pizza Menu Management
5. Side Dish Management
6. Order Management
0. Exit
Enter command: 
```