flow chart.

start → Input menu's name and quantity and category → Continue? —Yes (up loop) / —No (down)

welcome & select the menu → Is it on the menu?
- No → Not on the menu
- Yes → input 갯수 → Did you input the only number?
  - No → try again
  - Yes → 갯수 ≤ quantity ?
    - No → insufficient
    - Yes → complete an order → quantity = quantity − 갯수 → All quantity = 0 ?
      - No → (loop back to welcome & select the menu)
      - Yes → Sold out → End

```python
#1
class Cafe():
    def __init__(self, named_name,named_quantity):
        self.named_name = named_name
        self.named_quantity = named_quantity


class Food(Cafe):
    def __init__(self, named_name,named_quantity, named_warming):
        Cafe.__init__(self,named_name,named_quantity)
        self.named_warming=named_warming
```

#1

-In the café program, I defined a Café class that has instance variables in the menu name and quantity.

-Food class is defined as a subclass of Café class and has warming option.

```
#2
def main():
    cafe = {}
    while(1):
        n = int(input("Do you want to continue? (yes=1/no=2) : "))
        if n == 1:
            name = input("Enter the menu's name: ")
            try:
                qty = int(input("Enter the initial quantity of menu: "))
            except ValueError:
                print("That was no valid number.  Try again...")
                qty = int(input("Enter the initial quantity of menu: "))
            DrinkorFood = input("Enter category (drink or food): ")
            if DrinkorFood == 'food':
                y_n = input("Enter warimg option (warm/cold ) : ")
                if y_n =="warm":
                    f = Food(name,qty,True)
                else:
                    f = Food(name,qty,False)
            else:
                f = Cafe(name,qty)
            cafe[name] = f
        elif n == 2:
            break
```

#2 (*python code typo : y_n = intput(Enter warimg option) -> Enter warming option)

- Defined the main () function to control the entire cafe program.

- Defined while clauses to create an unlimited menu.

   ->If user want to create a menu, enter the number 1.

   ->When user enter the numeber2, break is called to end the menu creation.

-Handle an error so that you can enter only the numerical value when you receive the quantity input.

-When creating a menu category, you will receive a warming option for food, a true value if you select warm, and a false value for cold.

```
Do you want to continue? (yes=1/no=2) : 1
Enter the menu's name: coffee
Enter the initial quantity of menu: 3
Enter category (drink or food): drink
Do you want to continue? (yes=1/no=2) : 1
Enter the menu's name: tea
Enter the initial quantity of menu: 2
Enter category (drink or food): drink
Do you want to continue? (yes=1/no=2) : 1
Enter the menu's name: cake
Enter the initial quantity of menu: 4
Enter category (drink or food): food
Enter warimg option (warm/cold ) : cold
Do you want to continue? (yes=1/no=2) : 1
Enter the menu's name: sandwich
Enter the initial quantity of menu: 3
Enter category (drink or food): food
Enter warimg option (warm/cold ) : warm
Do you want to continue? (yes=1/no=2) : 2
*******************
 Welcome to
 LIA's cafe
*******************
-----menu-----
coffee ( quantity = 3 )
tea ( quantity = 2 )
cake ( quantity = 4 )
sandwich ( quantity = 3 )
```

```
#3
  while True:
    count = 0
    print("*"*20)
    print(" Welcome to \n LIA's cafe")
    print("*"*20)
    print("-----menu------")
    for key, value in cafe.items():
        print(key ,"( quantity =",value.named_quantity,")")
    print()
    print("*"*20)
    menu = input("Make a selection from the menu: ")
    if menu in cafe:
        try:
            quantity=int(input("Please tell me the quantity : "))
        except ValueError:
            print("That was no valid number.  Try again...")
            quantity=int(input("Please tell me the quantity : "))

        if cafe[menu].named_quantity>=quantity:
            print("Here is what you orderd Thank you!")
            cafe[menu].named_quantity-=quantity
        else:
            print("Sorry. This quantity is insufficient ")

    else:
        print("Not on the menu")

    for key, value in cafe.items():
        if value.named_quantity ==0:
            count+=1

    if count == len(cafe):
        print("="*20)
        print(" All sold out \n LIA's cafe closed")
        break

main()
```

#3

-Used the (if-else) code from project1&3 to process the order.

-Handle an error so that you can enter only the numerical value when receiving the quantity input.

-Created a for-in clause and an if statement so that break states is called to end the while states, when the stock is all 0.

```
Make a selection from the menu: coffee
Please tell me the quantity : 3
Here is what you orderd Thank you!
********************
 Welcome to
 LIA's cafe
********************
-----menu------
coffee ( quantity = 0 )
tea ( quantity = 2 )
cake ( quantity = 4 )
sandwich ( quantity = 3 )
```

```
Make a selection from the menu: tea
Please tell me the quantity : two
That was no valid number.  Try again...
Please tell me the quantity : 2
Here is what you orderd Thank you!
********************
 Welcome to
 LIA's cafe
********************
-----menu------
coffee ( quantity = 0 )
tea ( quantity = 0 )
cake ( quantity = 4 )
sandwich ( quantity = 3 )
```

```
Make a selection from the menu: cake
Please tell me the quantity : 5
Sorry. This quantity is insufficient
********************
 Welcome to
 LIA's cafe
********************
-----menu------
coffee ( quantity = 0 )
tea ( quantity = 0 )
cake ( quantity = 4 )
sandwich ( quantity = 3 )

********************
Make a selection from the menu: cake
Please tell me the quantity : 4
Here is what you orderd Thank you!
********************
 Welcome to
 LIA's cafe
********************
-----menu------
coffee ( quantity = 0 )
tea ( quantity = 0 )
cake ( quantity = 0 )
sandwich ( quantity = 3 )
```

```
********************
Make a selection from the menu: macaron
Not on the menu
********************
 Welcome to
 LIA's cafe
********************
-----menu------
coffee ( quantity = 0 )
tea ( quantity = 0 )
cake ( quantity = 0 )
sandwich ( quantity = 3 )

********************
Make a selection from the menu: sandwich
Please tell me the quantity : 3
Here is what you orderd Thank you!
===================
 All sold out
 LIA's cafe closed
```