پاسخ سوال برنامه‌نویسی

دوره استادی پایتون درسمن

پایتون پیشرفته

پاسخ تمرین شماره ۱:

```python
import json
import jmespath
import operator
# ==========================================================================================
###deserialize JSON to object, then create a dictionary
with open("employee.json","r") as file1:    #  برای مدیریت فایل، کلاس فایل را هم میتوان تعریف کرد
    employee_List = json.load(file1)         #  هم می توان استفاده کرد try-except از بلاک
    employee_Dictionary = {}
    employee_Dictionary["EmployeeDetails"]= employee_List
# ==========================================================================================
### search for special data in a dictionary with JSON format
def search_Full_Name_Female(employee_Dictionary):
    temp_List = jmespath.search("EmployeeDetails[?gender=='female'].[fullName]",employee_Dictionary)
    return temp_List

def search_Full_Name_Male_Company(employee_Dictionary):
    temp_List = jmespath.search("EmployeeDetails[?gender=='male' && company=='MAPNA'].[fullName]",
    employee_Dictionary)
    return temp_List

def search_Full_Name_Email_Company(employee_Dictionary):
    temp_List = jmespath.search("EmployeeDetails[?company=='Iran Khodro Co.'].[fullName,email]",
    employee_Dictionary)
    return temp_List

## the first three employee in terms of salary (solution 1)
def search_Male_Information(employee_Dictionary):
    tempList = jmespath.search("EmployeeDetails[?gender=='male'].*",employee_Dictionary)
    sorted_Employees = sorted(tempList,key=operator.itemgetter(3),reverse=True)
    return list(operator.itemgetter(0,1,2)(sorted_Employees))

## the first three employee in terms of salary (solution 2)
def search_Male_Information(employee_Dictionary):
    tempList = jmespath.search('EmployeeDetails[*] | reverse(sort_by(@, &salary)) | [*].[fullName,
    gender, company, salary, email]', employee_Dictionary)
    return tempList[:3]
# ========================================= main program =========================================
print()
print("Female Employees:")
print(search_Full_Name_Female(employee_Dictionary))
print(150*"*")
print("Male Employees at MAPNA:")
print(search_Full_Name_Male_Company(employee_Dictionary))
print(150*"*")
print("Employees at Iran Khodro Co.:")
print(search_Full_Name_Email_Company(employee_Dictionary))
print(150*"*")
print("The first three male employee in terms of salary:")
print(search_Male_Information(employee_Dictionary))
print()
```

پاسخ تمرین شماره ۲:

```python
1   import json
2   # ================================================================================================
3   class Food_Menu:
4       def __init__(self, food_Code, food_Name, food_Price):
5           self.food_Code = food_Code
6           self.food_Name = food_Name
7           self.food_Price = food_Price
8           self.ingredient_List = []
9
10      def add_To_Ingredient_List(self,ingredient):
11          self.ingredient_List.append(ingredient)
12          return self.ingredient_List
13
14      def __str__(self):
15          return f"Code:{self.food_Code}\tName:{self.food_Name}\tPrice:{self.food_Price}\tIngredients:
            {self.ingredient_List}"
16  # ================================================================================================
17  class File:
18      def __init__(self, file_Path, file_Mode):
19          self.file_Path = file_Path
20          self.file_Mode = file_Mode
21          self.File_object = None
22
23      def __enter__(self):
24          self.file_Object = open(self.file_Path,self.file_Mode)
25          return self.file_Object
26
27      def __exit__(self,*exc):
28          if self.file_Object:
29              self.file_Object.close()
30  # ================================= main program =========================================
31  ## یک فایل جیسونی ایجاد می کنیم
32  ### داده ها را از این فایل می خوانیم
33  def read_From_Json_File():
34      try:
35          with File("foodMenu.json","r") as file1:
36              menu = json.load(file1)
37      except:
38          menu = []
39      return menu
40  # ----------------------------------------------------------------------------------------
41  ### داده ها را در این فایل می نویسیم
42  def write_To_Json_File(menu):
43      with File("foodMenu.json","w") as file1:
44          json.dump(menu,file1,indent=4)
45  # ----------------------------------------------------------------------------------------
46  ### تعریف نمونه از کلاس منوی غذا، اضافه کردن آن به داده هایی که از فایل جیسون خواندیم و نوشتن داده های
    نهایی در فایل جیسون
47  def create_Food_Menu():
48      while True:
49          code = input("Enter Food Code: ")
50          if code != "0":
51              name = input("Enter Food Name: ")
52              price = input("Enter Food Price: ")
53              ingredients = input("Enter ingredients (For Example:meat,tomato,mushroom): ")
54              fm = Food_Menu(code,name,price)
55              for ingredient in ingredients.split(","):
56                  fm.add_To_Ingredient_List(ingredient)
57              menu = read_From_Json_File()
58              menu.append(fm.__dict__)
59              write_To_Json_File(menu)
60          else:
61              break
62
63  create_Food_Menu()
```