Firearm Inventory & Explorer Project Documentation

Introduction:
The Firearm Inventory and Explorer project is a **Python-based application** designed to manage and explore a list of guns. The project consists of three main files, each serving a specific purpose in the overall functionality.

File 1:

main1.py

Purpose:

- Manages the inventory of guns.
- Collects details of each gun from the user.
- Stores gun details in a **JSON** file.

Code Overview:

- Defines a Gun class with attributes for gun details.
- Checks if the **JSON** file (guns_detail.json) exists before attempting to read it.
- Uses a loop to continuously collect gun details from the user until the user decides not to add more guns.
- Appends gun data to a list and writes the updated list to the **JSON** file.

Illustration:

```
GUN = Gun()
GUN.name = input("Gun name: ")
GUN.type = input("Handgun, Shotgun, Sniper Rifle, AR Rifle or SMG: ")
GUN.modelyear = int(input("Manufacture year: "))
GUN.weight = float(input("Weight of gun in grams(in kg for Snipers): "))
GUN.price = int(input("Price of the gun: "))

gun_data = {
    "NAME": GUN.name,
    "TYPE": GUN.type,
    "MANUFACTURE YEAR": GUN.modelyear,
    "WEIGHT": GUN.weight,
    "GUN PRICE": GUN.price
}
```

File 2:

guns_detail.json

Purpose:

- **JSON** file to store gun details.


```
[
  {
    "NAME": "B6",
    "TYPE": "Handgun",
    "MANUFACTURE YEAR": 2013,
    "WEIGHT": 800,
    "GUN PRICE": 95000
  },
  {
    "NAME": "P8 L",
    "TYPE": "Handgun",
    "MANUFACTURE YEAR": 1990,
    "WEIGHT": 1075,
    "GUN PRICE": 150000
  }
]
```

File 3:

firearm_explorer.py

Purpose:

• Allows users to explore available guns based on specific criteria.

Code Overview:

• Loads gun data from the guns_detail.json file.

• Prompts the user for input on gun preferences, such as type, manufacture year, weight, and price.

• Filters the guns based on user input and displays matching results.

Illustration:

```
gun_type = input("Enter the type of Gun you want ( Handgun || Shotgun || AR Rifle ||Sniper Rifle || SMG ) : ")
min_manufacture_year = int(input("Enter the Minimum Manufacture Year : "))
max_manufacture_year = int(input("Enter the Maximum Manufacture Year : "))
max_weight = float(input("Enter the Maximum Weight of the Gun you want : "))
max_price = int(input("Enter the Price of your Gun : "))


matching_guns = []

for gun in guns_data:

    if gun["TYPE"] == gun_type \
    and min_manufacture_year <= gun["MANUFACTURE YEAR"] <= max_manufacture_year \
    and gun["WEIGHT"] <= max_weight and gun["GUN PRICE"] <= max_price:
            matching_guns.append(gun)
```

Conclusion:

- The Firearm Inventory and Explorer project provides a comprehensive solution for managing and exploring a diverse range of guns. Users can seamlessly add new guns to the inventory and efficiently explore the available options based on their preferences.

Future Enhancements

- Additional features and improvements can be implemented, such as sorting options, graphical user interface (GUI), and advanced search functionalities.

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