CA1 Project Report

On

(Olympic Records Management System)

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Introduction

This report describes an Olympic Records Management System developed in Python. The system allows users to add athlete records, view details, calculate medal counts, search for athletes, view event details, and view overall statistics. The system utilizes JSON files for data persistence.

Logic of the program

The **add_athlete()** function prompts the user for athlete details, creates an athlete dictionary, adds it to the records list, and saves the updated records to a JSON file.

The **view_athletes()** function iterates over the records list and prints each athlete's details.

The **view_medal_count()** function calculates the medal count for each country by iterating over the records list and updating a dictionary.

The **search_athlete()** function prompts the user for an athlete's name and iterates over the records list to find matching athletes.

The **view_event()** function prompts the user for an event name and iterates over the records list to find matching athletes.

The **view_statistics()** function calculates and prints overall statistics, such as the total number of records and medal distribution.

The **main()** function provides the user interface, allowing users to choose different options and execute the corresponding functions.

Code

```
import json

records = []

def save_records():
    with open("athlete_records.json", "w") as f:
        json.dump(records, f, indent=2)


def load_records():
    try:
        with open("athlete_records.json", "r") as f:
            global records
            records = json.load(f)
    except FileNotFoundError:
        pass


def add_athlete():
    name = input("Enter athlete's name: ")
    country = input("Enter country: ")
    sport = input("Enter sport: ")
    event = input("Enter event: ")
    year = int(input("Enter year: "))
    medal = input("Enter medal type (Gold, Silver, Bronze): ")

    athlete = {
        "Name": name,
        "Country": country,
        "Sport": sport,
        "Event": event,
        "Year": year,
        "Medal": medal,
```

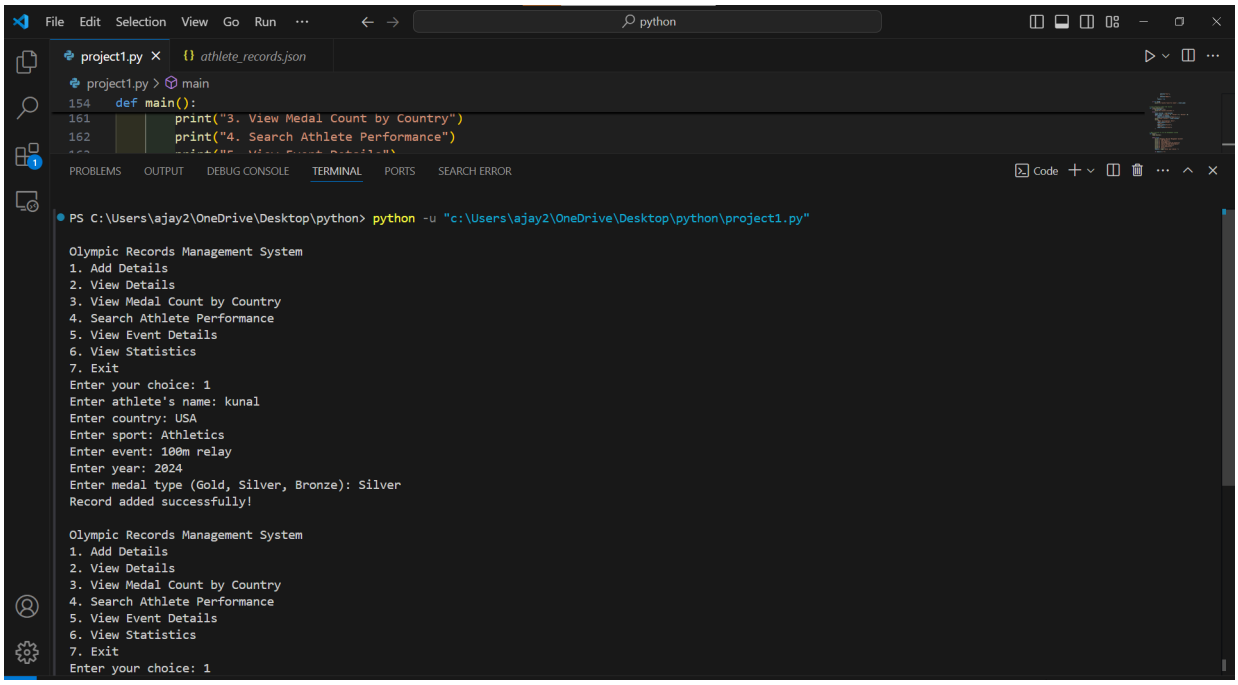
```
        }

        records.append(athlete)
        save_records()
        print("Record added successfully!")


def view_athletes():

        if len(records) == 0:
                print("No records available.")
        else:
                for athlete in records:
                        print(
                                athlete["Name"],
                                "-",
                                athlete["Country"],
                                "-",
                                athlete["Sport"],
                                "-",
                                athlete["Event"],
                                "-",
                                athlete["Year"],
                                "-",
                                athlete["Medal"],
                        )


def view_medal_count():
        medal_counts = {}
        for athlete in records:
                country = athlete["Country"]
                if country in medal_counts:
                        medal_counts[country] += 1
                else:
                        medal_counts[country] = 1
```

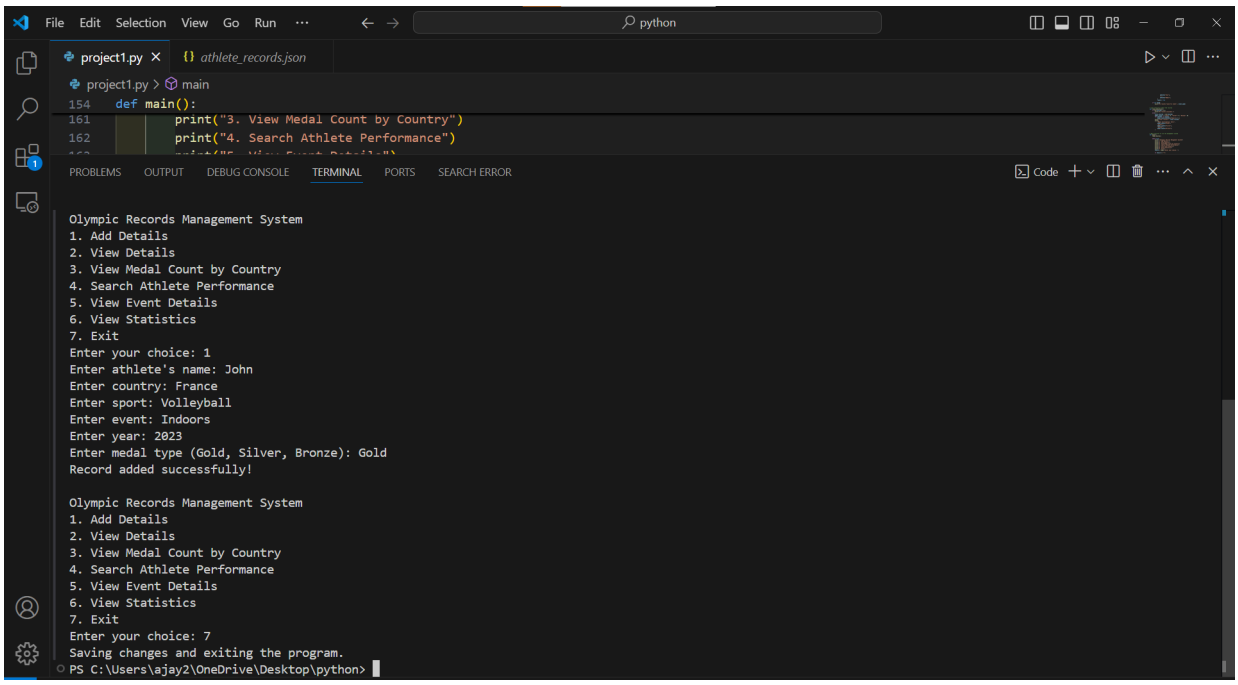
```
    for country in medal_counts:
        print(f"{country}:", medal_counts[country], "medals")


def search_athlete():
    name = input("Enter athlete's name to search: ")
    found = False
    for athlete in records:
        if athlete["Name"].lower() == name.lower():
            print(
                athlete["Name"],
                "-",
                athlete["Country"],
                "-",
                athlete["Sport"],
                "-",
                athlete["Event"],
                "-",
                athlete["Year"],
                "-",
                athlete["Medal"],
            )
            found = True

    if not found:
        print("No records found for athlete:", name)


def view_event():
    event_name = input("Enter event name to view details: ")
    found = False
    for athlete in records:
        if athlete["Event"].lower() == event_name.lower():
            print(
                athlete["Name"],
```

```
                    "-",
                    athlete["Country"],
                    "-",
                    athlete["Sport"],
                    "-",
                    athlete["Year"],
                    "-",
                    athlete["Medal"],
                )
                found = True

    if not found:
        print("No records found for event:", event_name)


def view_statistics():
    if len(records) == 0:
        print("No records available.")
    else:
        total_records = len(records)
        medal_counts = {"Gold": 0, "Silver": 0, "Bronze": 0}
        for athlete in records:
            medal_counts[athlete["Medal"]] += 1
        print("Total records:", total_records)
        print(
            "Medal distribution: Gold:",
            medal_counts["Gold"],
            "Silver:",
            medal_counts["Silver"],
            "Bronze:",
            medal_counts["Bronze"],
        )


def main():
    load_records()
```

```
    while True:
        print("\nOlympic Records Management System")
        print("1. Add Details")
        print("2. View Details")
        print("3. View Medal Count by Country")
        print("4. Search Athlete Performance")
        print("5. View Event Details")
        print("6. View Statistics")
        print("7. Exit")
        choice = input("Enter your choice: ")

        if choice == "1":
            add_athlete()
        elif choice == "2":
            view_athletes()
        elif choice == "3":
            view_medal_count()
        elif choice == "4":
            search_athlete()
        elif choice == "5":
            view_event()
        elif choice == "6":
            view_statistics()
        elif choice == "7":
            print("Saving changes and exiting the program.")
            save_records()
            break
        else:
            print("Invalid choice. Please try again.")


if __name__ == "__main__":
    main()
```

OUTPUT





Updated JSON file

project1.py athlete_records.json

athlete_records.json > ...

```json
[
    {
        "Name": "Ajay",
        "Country": "India",
        "Sport": "Athletics",
        "Event": "100m sprint",
        "Year": 2021,
        "Medal": "Gold"
    },
    {
        "Name": "kunal",
        "Country": "USA",
        "Sport": "Athletics",
        "Event": "100m relay",
        "Year": 2024,
        "Medal": "Silver"
    },
    {
        "Name": "John",
        "Country": "France",
        "Sport": "Volleyball",
        "Event": "Indoors",
        "Year": 2023,
        "Medal": "Gold"
    }
]
```