MINI PROJECT : 1

Problem Statement: Video Game CD Library Management System

Design a Python program using classes and objects to manage a video game CD library. The program should allow users to input and maintain data regarding CD entries, subscriptions, and returns. The system should cover the following common points:

Subscription Ownership:

Track the current owner of a video game CD subscribed to.

Adding New CD Entries:

Allow users to add details for a new video game CD entry into the library.

Returning CD Entries:

Provide functionality to return a subscribed video game CD, marking it available for future subscriptions.

Booking Subscriptions:

Enable users to book a subscription for a video game CD, specifying the duration of the subscription in days and the subscription start date.

Listing Available CDs:

Display a list of available video game CDs in the library.

Listing Booked CDs:

Show a list of video game CDs that are currently booked, along with the owner, duration of subscription, and subscription start date.

The program should operate in an interactive manner, allowing users to choose from various options to manage the library efficiently. The goal is to create a user-friendly system for maintaining and accessing data related to video game CD subscriptions.

CODE:

```
from datetime import datetime, timedelta

class VideoGameCD:
    def __init__(self, title):
        self.title = title
        self.owner = None
        self.subscription_date = None
        self.subscription_duration = None
        self.is_available = True

    def add_owner(self, owner, duration):
        if self.is_available:
            self.owner = owner
            self.subscription_date = datetime.now().date()
            self.subscription_duration = duration
            self.is_available = False
            print(f"{self.title} CD has been subscribed by {owner} for
{duration} days.")
        else:
            print(f"{self.title} CD is already subscribed by {self.owner}.")

    def return_cd(self):
        if not self.is_available:
            self.owner = None
            self.subscription_date = None
            self.subscription_duration = None
            self.is_available = True
            print(f"{self.title} CD has been returned.")
        else:
            print(f"{self.title} CD is already available.")

class CDLibrary:
    def __init__(self):
        self.library = {}

    def add_cd(self, title):
        if title not in self.library:
            self.library[title] = VideoGameCD(title)
            print(f"{title} CD has been added to the library.")
        else:
            print(f"{title} CD is already in the library.")
```


```
    def list_available_cds(self):
        available_cds = [title for title, cd in self.library.items() if
cd.is_available]
        if available_cds:
            print("Available CDs in the library:")
            for title in available_cds:
                print(f"- {title}")
        else:
            print("No CDs are available in the library.")

    def list_booked_cds(self):
        booked_cds = [title for title, cd in self.library.items() if not
cd.is_available]
        if booked_cds:
            print("Booked CDs in the library:")
            for title in booked_cds:
                print(f"- {title} (Subscribed by {self.library[title].owner}
for {self.library[title].subscription_duration} days, Subscribed on
{self.library[title].subscription_date})")
        else:
            print("No CDs are booked in the library.")

    def get_cd(self, title):
        if title in self.library:
            return self.library[title]
        else:
            print(f"{title} CD is not available in the library.")


# Creating CD library instance
library = CDLibrary()

while True:
    print("\nOptions:")
    print("1. Add new Video game CD entry")
    print("2. Book a subscription for a Video game CD")
    print("3. Return a Video game CD")
    print("4. List available Video game CDs in the library")
    print("5. List booked Video game CDs in the library")
    print("6. Exit")

    choice = input("Enter your choice: ")

    if choice == "1":
        title = input("Enter CD title: ")
        library.add_cd(title)
    elif choice == "2":
        title = input("Enter CD title to subscribe: ")
        cd = library.get_cd(title)
        if cd:
            owner = input("Enter subscriber's name: ")
            duration = int(input("Enter subscription duration in days: "))
```

```
            cd.add_owner(owner, duration)
    elif choice == "3":
        title = input("Enter CD title to return: ")
        cd = library.get_cd(title)
        if cd:
            cd.return_cd()
    elif choice == "4":
        library.list_available_cds()
    elif choice == "5":
        library.list_booked_cds()
    elif choice == "6":
        print("Exiting...")
        break
    else:
        print("Invalid choice. Please enter a number from 1 to 6.")
```

Output:

```
C:\Users\saksh\PycharmProjects\pythonProject\.venv\Scripts\python.exe C:\Users\saksh\PycharmProjects\pythonProject\38.py

Options:
1. Add new Video game CD entry
2. Book a subscription for a Video game CD
3. Return a Video game CD
4. List available Video game CDs in the library
5. List booked Video game CDs in the library
6. Exit
Enter your choice: 5
No CDs are booked in the library.

Options:
1. Add new Video game CD entry
2. Book a subscription for a Video game CD
3. Return a Video game CD
4. List available Video game CDs in the library
5. List booked Video game CDs in the library
6. Exit
Enter your choice:
```