Solution: Movie Database System

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# Solution: Movie Database System


# Global list to store the movie collection
movie_collection = []


# Function to add a new movie
def add_movie(title, director, genre, year):
    global movie_collection
    movie = {"title": title, "director": director, "genre": genre, "year": year}
    movie_collection.append(movie)
    print("Movie added successfully!")


# Function to view all movies
def view_movies():
    if not movie_collection:
        print("No movies in the collection.")
    else:
        for idx, movie in enumerate(movie_collection, 1):
            print(f"{idx}. Title: {movie['title']}, Director: {movie['director']}, Genre: {movie['genre']}, Year:
{movie['year']}")


# Function to search for a movie
def search_movie(**kwargs):
    results = [movie for movie in movie_collection if all(movie.get(k) == v for k, v in kwargs.items())]
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    if not results:
        print("No matching movies found.")
    else:
        for movie in results:
                print(f"Title: {movie['title']}, Director: {movie['director']}, Genre: {movie['genre']}, Year:
{movie['year']}")

# Function to delete a movie
def delete_movie(title):
    global movie_collection
    initial_count = len(movie_collection)
    movie_collection = [movie for movie in movie_collection if movie["title"] != title]
    if len(movie_collection) < initial_count:
        print("Movie deleted successfully!")
    else:
        print("Movie not found.")

# Function to view unique genres
def view_unique_genres():
    genres = {movie["genre"] for movie in movie_collection}
    print("Unique genres:", genres)

# Function to export movies to a file
def export_to_file(filename="movie_collection.txt"):
    try:
        with open(filename, "w") as file:
            for movie in movie_collection:
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                file.write(f"Title: {movie['title']}, Director: {movie['director']}, Genre: {movie['genre']}, Year:
{movie['year']}
")
        print(f"Movie collection exported to {filename}.")
    except Exception as e:
        print("An error occurred while exporting:", e)

# Main menu function
def menu():
    while True:
        print("\nMenu:")
        print("1. Add a Movie")
        print("2. View All Movies")
        print("3. Search for a Movie")
        print("4. Delete a Movie")
        print("5. View Unique Genres")
        print("6. Export Collection to File")
        print("7. Exit")
        choice = input("Enter your choice: ")
        if choice == "1":
            title = input("Enter title: ")
            director = input("Enter director: ")
            genre = input("Enter genre: ")
            year = input("Enter year: ")
            add_movie(title, director, genre, year)
        elif choice == "2":
            view_movies()
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        elif choice == "3":
            field = input("Search by (title/director): ")
            value = input(f"Enter {field}: ")
            search_movie(**{field: value})
        elif choice == "4":
            title = input("Enter the title of the movie to delete: ")
            delete_movie(title)
        elif choice == "5":
            view_unique_genres()
        elif choice == "6":
            export_to_file()
        elif choice == "7":
            print("Exiting the program.")
            break
        else:
            print("Invalid choice. Please try again.")

# Run the program
if __name__ == "__main__":
    menu()
```