

## Movie Recommendation System Sorting using Quicksort

### OUTPUT:

Enter number of movies: 4

Enter title, rating, releaseYear, watchPopularity for movie 1:

Inception

8.8 2010 5000

Enter title, rating, releaseYear, watchPopularity for movie 2:

Avatar

7.8 2009 4500

Enter title, rating, releaseYear, watchPopularity for movie 3:

Tenet

7.5 2020 3000

Enter title, rating, releaseYear, watchPopularity for movie 4:

Joker

8.5 2019 4700

Choose sorting criteria:

1. IMDB Rating

2. Release Year

3. Watch Popularity

2

Sorted Movies:

Title	Rating	Year	Popularity
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Tenet	7.5	2020	3000
Joker	8.5	2019	4700
Inception	8.8	2010	5000
Avatar	7.8	2009	4500

**Algorithm Used:**

**Quicksort** is implemented to sort movies efficiently. It works as follows:

1. **Choose a pivot** (here, the last element in the segment).
2. **Partition** the array such that all movies satisfying the sorting condition (e.g., higher release year) are placed on one side.
3. **Recursively sort** the left and right subarrays.
4. **Time Complexity:**
  - Average case:  **$O(n \log n)$**
  - Worst case:  **$O(n^2)$**  (rare with proper pivot selection)

**Sorting Criteria:**

The system allows dynamic sorting based on user preference:

- **IMDB Rating** → Shows top-rated movies first.
- **Release Year** → Shows the newest movies first.
- **Watch Popularity** → Shows most-watched movies first.