

Class **Movie** is defined to encapsulate information about each movie, including its name, release year, and a vector of actors. This choice is rational because it allows for better organization and abstraction of movie data. Using a class makes it easier to maintain and manipulate related data and functions. The main data structure used to store a collection of Movie objects is a vector: “**vector<Movie> movies**”. Vectors were chosen because they offer dynamic resizing, efficient random access, and easy traversal. In this case, as the program reads movies from the input file, it dynamically grows to accommodate new Movie objects, ensuring flexibility and efficiency. In summary, the choice of data structures in the code aligns with the requirements of the task. Using a class **Movie** to represent movie data and vectors for dynamic storage of movies and actors allows for efficient data management and manipulation.

Input File	# of records	Time taken to create the collection	Time taken to sort based on the movie name	Time taken to sort based on the year	Total time taken
dbfile1.txt	442	0.004867 sec	0.000328 sec	0.00029 sec	0.005485 sec
dbfile2.txt	7065	0.075358 sec	0.006816 sec	0.006508 sec	0.088682 sec
dbfile3.txt	14129	0.149276 sec	0.01823 sec	0.020863 sec	0.188369 sec