Project description

Our project is database storing information about cinema movies and reservations using Cassandra. It is working on 3 nodes which are used to build a Cassandra cluster using docker. All actions except setting up nodes and cluster are performed using Python. User can book a seat for a movie on a given date and hour if there are any empty seats. There is limited number of seats in form of sets for each movie. Other than that, user can view available movies and their reservations, update reservation or cancel reservation.

In order to run it, you should just run init.py to initialize the database and main.py to run application.

Database schema

Table names	Column names
Movies	PK title text time timestamp emptySeats set<int>
Reservations	PK reservationID uuid bookingTime timestamp movieTitle text seatNumber int username text

Problem encountered

Main problem was to have enough RAM to run all three nodes on a virtual machine with limited resources. Many times we needed to reset virtual machine or even computer.

Form of tracking taken seats: at first we decided to assign to each movie the maximum amount of seats, but later we discovered that we need to keep track of each seat individually so after some thoughts we decided to use set of integers to list all seats that are empty and removing ones which were reserved.