Database Management Lab Assignment 9

Hand Out: **13.04.2022, 2:00 PM** | Due: **13.04.2022, 11:59 PM**

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Instructions

- Write and execute the commands and paste the screenshots of the query as well as the output, **before and after using indexing.**
- Submission should be a dedicated PDF file containing all the answers. Nomenclate the PDF as `<your_roll_no>_assignment9.pdf`
- The code should be executable and the output should be clearly visible.
- Leverage the DVDRental Database for solving the questions below.

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1. Consider the following queries to the **'payment'** table:
    a. Fetch all the transactions where the transaction amount is always greater than $3.
    b. Fetch all the details of the transactions performed by the customer with id = '380'.

    Create a partial index on the search keys to make the queries efficient. Justify why a partial index is used here by comparing the execution time of the above queries with and without using the index. (2 marks)

2. Fetch the transaction ID and the payment date of the customer with ID = ‘341’ and staff ID = ‘1’ using the **‘payment’** table. Create a multi-column index on the search keys to make the queries efficient. (2 marks)
    a. Justify the decision over the order chosen to create the index by comparing the execution time of the above queries with and without using the index.
    b. Change the order of creation of the multi-column index and showcase the change in the execution times which are encountered.
3. Fetch the movie name and the year in which it was released of all the movies which have a rent greater than $3 and have a running time of at least 100 minutes.
    a. Create a covering index to cover any particular attribute of your choice inside the index. Compare the execution time of the fetch query with and without using this index.
    b. Create a multi-column index over the same data set and compare the execution times of this newly created index with the covering index created in the previous question. Explain the query plan.

E.O.D.