# IST769 Performance, Security, NoSQL

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Date Due:   
Homework #: 4

1. Create a non-clustered index on the **timesheets** table in the **demo** database. The index you create should be designed to improve the following query:

select employee\_id, employee\_firstname, employee\_lastname, sum(timesheet\_hourlyrate\*timesheet\_hours)

from timesheets

group by employee\_id, employee\_firstname, employee\_lastname;

1. Write an SQL Select query which uses the index you created in the first question but does an index seek instead of an index scan.

1. Create a single columnstore index on the **timesheets** table in the **demo** database which will improve the following queries:

select employee\_department, sum(timesheet\_hours)

from timesheets group by employee\_department

select employee\_jobtitle, avg(timesheet\_hourlyrate)

from timesheets group by employee\_jobtitle

1. Create an indexed view named **v\_employees** on the **timesheets** table in the **demo** database which lists the employee id, first name, last name, job title, and department columns values and one row per employee (essentially re-building the employee table). Then set a unique clustered index on the view and finish by writing an SQL Select query which uses the indexed view.

1. Output the following query in JSON format: Display the employee id, first name, last name, count of timesheets, total hours worked, and average timesheet hourly rate.