

# Project Assignment - Part 3

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## Introduction

In Part 3 of the project, you have to answer some business questions on a datacube you will create on the database you prepared. Document how you build your datacube in your report and solve the business questions using MultiDimensional eXpressions (MDX) in SQL management studio. Each group has to solve only the assignments on the corresponding group number page. Look at the section with your groupid to find which assignments you have to do. For the delivery, prepare a folder with the name LDS\_Part3\_groupid. Since this is the **final delivery**, each student must create a single folder named LDS\_groupid containing the following folders:

- LDS\_Part1\_groupid containing the solutions to the assignments of the first part
- LDS\_Part2\_groupid containing the solutions to the assignments of the second part
- LDS\_Part3\_groupid containing the solutions to the assignments of the third part

Then, you must compress the folder and create a single .zip file named LDS\_groupid.zip. Note that you can update the previous assignments and deliver the updated version. In this case, you must add a .txt file discussing the changes within the corresponding folder.

Finally, email all teachers with the subject: LDS FINAL DELIVERY Group.Id. Remember to send a brief report (max 10 pages) describing the intuition behind your proposed solution for each assignment and all your implementation choices.

## Groups from 0 to 10

### *Assignment 0*

Build a datacube from the data of the tables in your database, defining the appropriate hierarchies. Create the needed measures based on the queries you need to answer.

### *Assignment 1*

Show the total crime gravity for each city and the grand total with respect to the state.

### *Assignment 2*

Show the percentage increase or decrease in total crime gravity answers with respect to the previous year for each age group.

### *Assignment 3*

Show the ratio between the total crime gravity of each year w.r.t the previous year.

### *Assignment 4*

Create a dashboard that shows the geographical distribution of the total crime gravity in each age group.

### *Assignment 5*

Create a plot/dashboard of your choice that you deem interesting w.r.t. the data available in your cube.

## Groups from 11 to 40

### *Assignment 0*

Build a datacube from the data of the tables in your database, defining the appropriate hierarchies. Create the needed measures based on the queries you need to answer.

### *Assignment 1*

Show the city with the highest crime gravity for each state.

### *Assignment 2*

For each state, show the incident with the highest ratio between his total crime gravity and the average crime gravity of that state.

### *Assignment 3*

For each city, show the difference between each quarter's total crime gravity and the previous quarter's total crime gravity.

### *Assignment 4*

Create a dashboard that shows the geographical distribution of the total crime gravity in each age group.

### *Assignment 5*

Create a plot/dashboard of your choice that you deem interesting w.r.t. the data available in your cube.

## Groups from 42 to 888

### *Assignment 0*

Build a datacube from the data of the tables in your database, defining the appropriate hierarchies. Create the needed measures based on the queries you need to answer.

### *Assignment 1*

Show the percentage increase or decrease in total crime gravity with respect to the previous year for each state.

### *Assignment 2*

For each gun, show the total crime gravity in percentage with respect to the total crime gravity of all the guns.

### *Assignment 3*

Show the incidents having a total gravity score greater or equal to the average gravity score in each state.

### *Assignment 4*

Create a dashboard that shows the geographical distribution of the total crime gravity in each age group.

### *Assignment 5*

Create a plot/dashboard of your choice that you deem interesting w.r.t. the data available in your cube.