In this example we will be using a database server as a *service* running within a container to run same basic aggregate queries. Alternatively, you can skip the docker installation and directly install the SQL Server in your machine. You can then access the server using SQL Server Management studio or via command line (sqlcmd)

Steps required to make it work

1. Install docker (<https://docs.docker.com/get-docker/>)
2. Run the container (this also downloads the sql server image)

sudo docker run -e "ACCEPT\_EULA=Y" -e "SA\_PASSWORD=SqlServer1" \

 -p 1433:1433 --name sql1 -h sql1 \

 -d mcr.microsoft.com/mssql/server:2019-latest

Note: SqlServer1 [you can modify it] is the password we will be using to connect to the server, user name is SA

1. Verify that the server is running



1. Now you can connect to the server using for instance SQL Server Management studio. In this example I do not want to install any MS tools in my machine, so I will be working within the container.

First, I am copying the database creation file stored in the local folder to the container by running the following command

docker cp CreateDB\_SQLSERVER sql1:/

1. Now enter the container using bash and check that the file is there



1. Run the database creation script (note location of the sqlcmd binary in the container)



1. If everything worked, start a new session using the testdb database and look at the first 5 purchases in table Sales



1. Compute the total amount of sales per product and region. Order output based on cumulative amounts



FYI, the same querying executed using Management Studio



1. Compute the first 10 rows of the data cube using “product”, “quarter” and “region” as dimensions.



Note entry **“NULL, 1Qtr, America, 501”**. What does it mean? Can you compute this particular result using a single SQL query?

1. Now try a few aggregate queries on your own using the available data!