Queries

1. Upon **Schools\_Countries\_Combined \_World\_Ranking** (**country**, Year, university)

When the country is the partition key it is efficient to Filter and group by it, and since the year is now the clustering column we could perform efficient range filtering by the years. We could perform queries that could reveal countries’ ranks trends during the years.

* 1. For a given country(is) and given years range calculate the number of ranked universities as follow:
     1. Number of schools from country that ranked in each rank.
     2. Number of schools from country that ranked in at least one of the ranks.

get\_number\_of\_ranked\_school\_by\_country\_and\_year(countries, start\_year, end\_year)

* 1. For a given country(is) and given years range calculate the best rank of schools from the country in each rank:

get\_best\_rank\_of\_ranked\_school\_by\_country\_and\_year(countries, start\_year, end\_year)

* 1. For a given country(is) get Country-All-times stats:
     1. The best rank ever of school from the country in each rank
     2. The worst rank ever of school from the country in each rank
     3. The worst average score of schools from the country in each rank.

def get\_all\_times\_stats(countries)

* 1. For a given country get score and rank stats of each school in the country in range of years.
  2. For a given country(is) and range of years get all the scores and ranks of schools from the country(is) per each year in the rank.

get\_all\_schools\_rank\_and\_scores(countries, start\_year, end\_year)

1. Upon University\_criteria(University, Year)
   1. For a given set of schools check the trend of given score/rank during the years. That’s way we could compare criteria school trend within a specific set of schools.

get\_criteria\_trend(school\_names, criteria\_name, year\_range = None):

* 1. For a given school check the trends of multiple criteria.

That way we could analyze trade off-s between criteria in given school and maybe detect policies/approach changing during the year(For example Institute that put more efforts in the equality of teaching on the expense of research efforts).

get\_school\_trends(school\_name, criteria\_names,  year\_range = None):

* 1. For any two criteria – get all their combinations by year and university – in order to calculate correlation between each two criteria. We can Define criteria one as X and second as Y and show the correlation between them visually.

Cassandra dosen’t support arithmetic operation but we could calculate in the client side the arithmetic value of the correlation and present it trends during the years.

get\_criterias\_correlation(criteria\_one, criteria\_two)