# ***Task Submission(Mayank Maurya).***

**I have read lot's of blogs and community discussion forums for that but the best from them is ,**

**https://docs.amazonaws.cn/en_us/AmazonElastiCache/latest/red-ug/elasticache-use-cases.html#elasticache-use-cases-data-store**

**This one.**

First of all we will consider only worstcases because if our algorithm or flowchat is able to handle the worstcase senarios thenour algorithm will meant to be correct way of solving the problem.

We can use RDBMS(relational database management system) but for it will be good only if the **pools** and **entries** and low like 100 or 1000.

But When we talk about scaling we should choose greedy approach.

Actually I have taken this **Realtime leaderboard problem** as a optimization problem. So for optimization problems we user greedy algorithms.

For that,

We can user Set of Pairs in which is a container which contains N pairs each pair is consisting of its name(string) and it's corresponding score and set will be as sorted set so it will make these in sorted order in less time.

It will also handle the updating of values then automatically adjust the positions according to change.

So Conclusion is that we will use **Amazon Redis(Sorted set Data Structure).**

It is a data structure which is pretty similar to that sorted set we have discussed earlier.

It uses Ram for making fast operations because it is in memory datastructure.

Its Some commands complexity is,

ZADD(Adding a value to set) -> O( log(N) )

ZSCORE(Value of perticular player) -> O( 1 )

ZRANGE -> O(Log(N) + M)

ZRANK(Rank of particular player) -> O(Log(N))

So the approximate flowchart will be like this,