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# Question 1 – Report

## 1-)

Baseball Elimination: Sports fans like baseball fans want their teams to win. But sometimes when their position in their division is bad they want to know if their team can still win or not with the remaining matches they have. However, it is not always easy to calculate it. In this part we can use maximum capacity path algorithm to calculate if they still have a chance to win or not.

Project selection: Suppose we have N number of projects to choose some of them. Each project has its own profit and some projects are dependent to each other. In order to find the project set with maximum profit and also validates the dependencies, we can use the maximum capacity path algorithm.

## 2-)

We are implementing the algorithm for every V nodes because we have to make every status value as 2 for each node and we are checking for all nodes if they are neighbor of the current node or not in oder to assign or update their wt and dad array values. Hence the time complexity of modified Dijkstra algorithm is same as Dijkstra algorithm and it is **$O(V^2)$.**

## References

https://courses.engr.illinois.edu/cs498dl1/sp2015/notes/24-maxflowapps.pdf