DSA SERIES

- Learn Coding

Topic to be Covered today

Difference Array technique

&

Line Sweep

LETS START TODAY'S LECTURE

Maximum Population year

```cpp
class Solution {
public:
    int maximumPopulation(vector<vector<int>>& logs) {
        int years[101]={0};

        for(auto &log : logs){
            years[log[0]-1950] += 1;
            years[log[1]-1950] -= 1;
        }

        int maxPop = 0, curr = 0,maxYear = 1950;

        for(int i = 0 ; i<101 ;i++){
            curr += years[i];

            if(curr > maxPop ){
                maxPop = curr;
                maxYear = i + 1950;
            }
        }

        return maxYear;

    }
};
```

Points that Intersect with Cars

```cpp
class Solution {
public:
    int numberOfPoints(vector<vector<int>>& nums) {
        vector<int> diff(102,0);

        for(auto &car:nums){
            int start = car[0];
            int end    = car[1];

            diff[start]+=1;
            diff[end+1]-=1;
        }

        int count =0,curr=0;

        for(int i =0;i<=100;i++){
            curr+=diff[i];

            if(curr>0){
                count++;
            }
        }

        return count;
    }
};
```

Problem : 1094

Car Pooling

```cpp
class Solution {
public:
    bool carPooling(vector<vector<int>>& trips, int capacity) {
        vector<int> diff(1001,0);

        for(auto &trip : trips){
            int start = trip[1];
            int end = trip[2];

            diff[start]+=trip[0];
            diff[end]-=trip[0];
        }

        int sum =0;

        for(int i =0;i<1001;i++){
            sum+=diff[i];

            if(sum>capacity){
                return false;
            }
        }

        return true;
    }
};
```

Learn coding

THANK YOU