**Square Root Segmentation:**

**1.** Given an array with **N** elements, indexed from **1** to **N**. Now you will be given some queries in the form **I J**, your task is to **find the summation** value from index **I** to **J**.

[ Obvious precalculation idea will come ]

**2.** Given an array with **N** elements, indexed from **1** to **N**. Now you will be given some queries in the form **I J**, your task is to find the **minimum value** from index **I** to **J**.   
**LOJ : 1082 Array Queryies (http://lightoj.com/volume\_showproblem.php?problem=1082)**

**Sparse Table :**Improve problem [**2]** idea with sparse table.  
**LCA idea** with the help of Sparse Table using sparse table.

**Segment Tree:**

1. **Histogram Using Segment Tree :** [**http://lightoj.com/volume\_showproblem.php?problem=1083**](http://lightoj.com/volume_showproblem.php?problem=1083)
2. **Histogram Using Stack**
3. **Maximum Rectangle Area in 2D grid: http://lightoj.com/volume\_showproblem.php?problem=1424**

**Lazy:**

1. **Horrible Quries:** [**http://lightoj.com/volume\_showproblem.php?problem=1164**](http://lightoj.com/volume_showproblem.php?problem=1164)
2. **Merciless Chef:** [**https://www.codechef.com/SEPT13/problems/MLCHEF**](https://www.codechef.com/SEPT13/problems/MLCHEF) **(Hard)**

**BIT idea how can we use it for solving problem (NO DETAILS)**

Loj 1188 : Fast Quries http://lightoj.com/volume\_showproblem.php?problem=1188

Counting Number of Inversion using BIT **(Offline Query Processing)**

**Variant Problem Discussion:  
1) MKTHNUM (Requires Vector on each node) (SPOJ)**

**2) Rectangle Union (http://lightoj.com/volume\_showproblem.php?problem=1120)**

**3) Number of points within a rectangle .**

**4) Watching Kangaroos (Dhaka Regional ) (Line Swapping/Segment Tree, Offline , Variation)**

**5) Little Elephant & Array (CF:** [**http://codeforces.com/contest/220/problem/B**](http://codeforces.com/contest/220/problem/B)**) (Square Root Segmentation )**

**How to convert a tree into array, DFS tree,**

**Aladin & Return Journey : Segment Tree, Lazy, LCA, Sparse Table (Without HLD)**

**Refferences:**

[**http://codeforces.com/blog/entry/23005**](http://codeforces.com/blog/entry/23005) **(Square Root Segmentation / MO’s )**