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| --- |
| package vandana.projects.com; |
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|  | public class RangeQueries { |
|  | static int k = 16; |
|  | static int N = 10000; |
|  | static long table[][] = new long[N][k + 1]; |
|  | static void buildSparseTable(int arr[], int n) |
|  | { |
|  | for (int i = 0; i < n; i++) |
|  | table[i][0] = arr[i]; |
|  | for (int j = 1; j <= k; j++) |
|  | for (int i = 0; i <= n - (1 << j); i++) |
|  | table[i][j] = table[i][j - 1] + table[i + (1 << (j - 1))][j - 1]; |
|  | } |
|  | static long query(int L, int R) |
|  | { |
|  | long answer = 0; |
|  | for (int j = k; j >= 0; j--) |
|  | { |
|  | if (L + (1 << j) - 1 <= R) |
|  | { |
|  | answer = answer + table[L][j]; |
|  | L += 1 << j; |
|  | } |
|  | } |
|  | return answer; |
|  | } |
|  |  |
|  |  |
|  | public static void main(String[] args) { |
|  | int arr[] = { 3, 7, 6, 5, 8, 9 }; |
|  | int n = arr.length; |
|  | buildSparseTable(arr, n); |
|  | System.out.println(query(0, 5)); |
|  | System.out.println(query(3, 5)); |
|  | System.out.println(query(2, 4)); |
|  |  |
|  |  |
|  | } |
|  |  |
|  | } |