

Phase-1 Practice Project: Assisted Practice

3. Write a program in Java to find the sum of n number of elements in the range of L and R where $0 \leq L \leq R \leq n-1$

source code:

```
public class Rangequerie
{
    static int k = 16;

    static int N = 100000;

    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, 2, 5, 8, 9 };

int n = arr.length;

buildSparseTable(arr, n);

System.out.println(query(4, 6));

System.out.println(query(3, 4));

System.out.println(query(7, 1));

}

}

```

output:

