```
Dynamic segment tree with lazy:
302
303
     #define left l , (l+r)>>1
304
     #define right ((l+r)>>1)+1 , r
305
306
     struct DynamicSegTree{
307
          struct Vertex {
308
               int value , lazy , l , r;
309
              Vertex *lChild, *rChild;
310
               Vertex(int value , int l , int r) :
311
312
                    lChild(nullptr), rChild(nullptr),
313
                   value(value), lazy(0), l(l), r(r){}
314
              void extend() {
315
                   if(lChild=nullptr){
316
317
                        lChild = new Vertex(0 , left);
                        rChild = new Vertex(0 , right);
318
319
                   }
320
               }
321
          };
322
          Vertex *root;
323
          int n;
324
325
          DynamicSegTree(int n) : n(n){
326
               root = new Vertex(0 , 0 , n);
327
328
329
          void push(Vertex *p){
330
               if(!(p \rightarrow lazy)) return;
331
               //product in size of segment if you want all element to inc
332
               p \rightarrow lChild \rightarrow value += p \rightarrow lazy; p \rightarrow rChild \rightarrow value += p \rightarrow lazy;
333
               p \rightarrow lChild \rightarrow lazy += p \rightarrow lazy; p \rightarrow rChild \rightarrow lazy += p \rightarrow lazy;
334
               p \rightarrow lazy = 0;
335
          }
336
337
          void update(int i , int j , int val){
338
               update(i , j , val , root);
          }
339
340
341
          int update(int i , int j , int val , Vertex *p){
               if(j ) return <math>p \rightarrow value;
342
343
               if(i ≤ p → l & b p → r ≤ j){
344
                   p→lazy+=val; //to change
345
                   p→value+=val; //to change
346
                   return p→value;
               }
347
348
               p \rightarrow extend(); push(p);
349
               return p \rightarrow value = (update(i, j, val, p \rightarrow lChild) +
350
                                        update(i , j , val , p→rChild)); //to change
          }
351
352
          int query(int i , int j){
353
354
               return query(i , j , root);
355
356
357
          int query(int i , int j , Vertex *p){
358
               if(j ) return 0; //to change
359
               if(i \le p \rightarrow l \& p \rightarrow r \le j) return p \rightarrow value;
360
               p \rightarrow extend(); push(p);
361
               return (query(i , j , p→lChild) + query(i , j , p→rChild)); //to change
          }
362
363 | };
```