Akshay S Bharadus

ADS Lab & Write-up

//skip list declaration Struct node ? int data; node ** forw; node Eint level, int 2data) & forw = new node * [level+1]; memset (forw, 0, size of (node*) * (leve(+1)) this -> data = data; Nuode () { deletell forw; 3; class shiplist { struct node * head; int data; int MAX_LEVEL; int level; float P skiplist() { head = new node (MAX_LEVEL, datas); level = 0; 3 ~ skiplist () } delete head; void display list ();

bool searchtist (int 2); void insert list (int 2); void deletelist (int 2);

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// Insertion of element
void shiplist: insertlish ( int &data ) ?
     node xx = head;
     node *update [HAX_LEVEL + 17;
     memset (update, O, size of (node *)* (MAX-LEVELY))
     for (int i=depel; i>=0; i--) f
           while (x -> torw [i] ! = NULL 88
                          x -> forw[i] -> data (data) {
                x = x \rightarrow forw[i];
           update [i] = x;
      x=x -> forw [O];
      if (x == NULL 11 x > data != data)
     f
          int lul = randomlevel ();
          if (IVI > level > {
              for (int i = level + () i <= lul; i++) &
                  update [i] = head = i
              level = lul;
        3
          x = new node (IVI, data);
         for (int i=0; i <=101; i++) {
             x -> forw[i] = update[i] -> forw[i];
             update[i] -> focus[i] = x;
```

Alishay 5 Bharadwoj 1BH18C2011 // Deletion of element void skiplist: : deletelist (int 8data) { node &x = head node *update [MAX-LEVEL+1]; memset (update, 0, size of (node *), * 1 MAX_1 EVELIN for (int i = level; i > = 0; i --) { while (x -> forw[i] ! = NULL 88 2-> forw[i] > dutage) x= x > forw[i]; update [i] = x; 3 x = x -> forw[o]; if (x -> data === data > { É for (int i=0; i<=level; i++) { if (update [i] -> toxw[i]!= >c) break; update [i] > forw[i] = x > forw[i]; delete x ; while (level > 0 88 head -> forw [level] == NULL)

Jevel --;

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11 Searching an element value
bool skiplist: searchlist(int 8 data) t

node *x = head;

1BM18C8011 for (int i = level; i > = 0; i--) { while (xc -> forw[i] != NULL 82 x-> forw [i] -> value < value) { x = x → forw[i]; 3 3 ; To] wood <-x < x return x = NULL 88 x-> value == value;

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