```
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                                        1 BM18CS139
int random level ()
  yeat v = (float) rand ()/grand-max;
  int ly = 0;
while (rxp & lyl x Markel)
    9 = (float) Trand() 19 rand_max);
void insert (int key)
  Node *arrant = header;
 Node * appleto [MAXLVL+];
 menset Cupdate, 0, size of (Node*) * (MAXLVL+1));
 for Cirt i = levela; i>=0; i--)
  of while ( cirr -) form [i] ! = NULL &R
           curr -> forw [i] -> key < key)
      Durrent - Current of forward
         our = curr > forw[i];
    updateCi] = urr;
                 Hard Cl January di
  curr = curr -7 forward [0]:
 if (current == NULLD | curr -> key != key)
of int revel = random level();
       if ( rlevel > level)
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of for lint i = level + 1; ic x level + 1; i++)
            update [i] = header;
        level = rlevel;
       Node * n = createnade (key, r level);
       for (inti=0; i <=rlevel; i++)
       of n-) forw[i] - update[i] -> forw[i].
          update [i] -) forw [i] = p;
       Cout 20" Insuted "LC key (2° \n;
void delete (int key)
 of Node * curr = head
     Node *update Tryaxivity;
     menset (update, o, Sizeof (Nodex) * (MAXLV(+))
  for lint i = lexel i ias = 0; i--)
     while ( curr -) forw [i] ! = NULL BL curr -) forwlife
              -) key ckey)
           Curr = curr -> forw [i]
          Wodate [i] = wired;
  curr = mor -) forw [o];
  if ( wrr! = NULL and curr > key == key)

C for ( int i = 0; i <= level; i++)

L' if lupdate [:] - brw [:]! = curr)
     update [i] 0:> prw[i] = curr > forw[i];
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while (level >0 de madero -) forw (level] == d
         level - - ;
       cont <<" deleted "<< key «< " ",
void search (int key)
  Node * cur = header;
  for (int i = level; i >= 0; i --)
     while (curr -) porw & i John
                curr = curr -) forw [i];
 if ( mrx and mrx -) key = = key)

cont << " found" << key;
```