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#include <iostream>
 #include <string>
 using namespace std;

 class HashTable
 {
  class Entry
  {
  public:
   int key;
   string name;
   Entry *next;

   Entry(int k,const string &s)
   {
    key = k;
    name = s;
    next = nullptr;
   }
  };


 public:
  Entry **table;
  int size;

 public:
  HashTable(int s=10)
  {
   size =s;
   table = new Entry*[size];

   for (int i=0; i<size;i++)
    table[i] = nullptr;
  }

  int hash (int key)
  {
   int offset = key % size;
   return offset;
  }

  void put(int key,const string &name)
  {

   int offset = hash(key);

   for (Entry *curr = table[offset];curr;curr= curr->next)
   {
    if(curr->key == key)
    {
     curr->name = name;
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   return;
  }
 }

 Entry *newEntry = new Entry(key,name);
 newEntry->next=table[offset];
 table[offset]=newEntry;

}


bool get (int key,string &result)
{
 int offset = hash(key);

 if (nullptr ==table[offset])
  return false;

 for (Entry *Curr= table[offset]; Curr;Curr = Curr->next)
 {
  if(Curr->key == key)
  {
   result =Curr->name;
   return true;
  }

 }
 return false;
}

void print()
{
 for (int offset=0;offset<size;offset++)
 {
  cout << offset <<": ";
  for (Entry *curr=table[offset];curr;curr=curr->next)
   cout << "["<<curr->key << curr->name<< "]";

  cout <<endl;
 }
}


bool remove(int key)
{
 int offset = hash(key);
 Entry *back = nullptr;

 for (Entry *curr=table[offset];curr;curr=curr->next)
 {
  if (curr->key == key)
  {
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    if (curr = table[offset])
    {
     table[offset]=curr->next;
     delete curr;
     return true;
    }

    else
    {
     back->next = curr->next;
     delete curr;
     return true;
    }
   }
   back = curr;
  }
  return false;
 }
};

int main()
{
 HashTable h1;
 int key;
 string result;

 string name;
 while (cout<<"Enter key(0 to stop) ", cin>>key,key)
 {
  cout<<" enter value ";
  cin >>name;
  h1.put(key,name);
  h1.print();
 }


 h1.print ();

 while (cout<<"Enter key to search(0 to stop)", cin>>key,key)
 {
  bool done = h1.get(key,result);
  if(done)
   cout << result<<endl;
  else
   cout<< "no key match" <<endl;

 }

 while (cout<<"Enter key to delete(0 to stop)", cin>>key,key)
 {   h1.remove(key);
  h1.print();
```

```
  }

}
```