

## Hashing

### Dictionary

```
class Dictionary {
```

```
    int size; pair<int,
```

```
    vector<list<int>> table;
```

```
public;
```

```
Dictionary (int n) {
```

```
    size = n;
```

```
    pair<int,
```

```
    table = vector<list<int>> (N);
```

```
}
```

```
void insert (int key) {
```

```
    int value
```

```
    table[hash(key)].push_back(key);
```

```
}
```

```
void delete (int key) {
```

```
    int idn = hash(key);
```

```
    for (auto i = table[idn].begin(); i !=  
        table[idn].end(); i++) {
```

```
        if (*i == key) {
```

```
            table[idn].erase(i);
```

```
            break;
```

```
        }
```

```
    }
```

```
int hash (int key) {
```

```
    return key % size;
```

```
}
```

```
}; int search (int key) {
```

```
    int idn = hash(key);
```

```
    for (auto i = table[idn].begin();
```

```
        i != table[idn].end();
```

```
        i++) {
```

```
        if (*i == key) {
```

```
            return i - second;
```

```
        }
```

```
    } return -1;
```

```
};
```