

## Hashing

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IBM18C5038

```
class HashN
```

```
{
```

```
    public:
```

```
        int k, v;
```

```
        HashN(int k, int v)
```

```
        {
```

```
            this->k = k;
```

```
            this->v = v;
```

```
        }
```

```
};
```

```
class HashM
```

```
{
```

```
    private:
```

```
        HashN **t;
```

```
    public:
```

```
        HashM()
```

```
        {
```

```
            t = new HashN * [Tsize];
```

```
            for (int i = 0; i < Tsize; i++)
```

```
            {
```

```
                t[i] = NULL;
```

```
            }
```

```
        }
```

```
        int HashF(int k)
```

```
        {
```

```
            return k % Tsize;
```

```
        }
```

```
        void Ins(int k, int v)
```

```
        {
```

```
            int h = HashF(k);
```

```
            while (t[h] != NULL && t[h]->k != k)
```

```
            {
```

```
                h = HashF(h+1);
```

```
            }
```

```
            if (t[h] != NULL)
```

```
                delete t[h];
```

```
            t[h] = new HashN(k, v);
```

```
        }
```

```
        int SearchK(int k)
```

```
        {
```

```
            int h = HashF(k);
```

```
            while (t[h] != NULL && t[h]->k != k)
```

```
            {
```

```
                h = HashF(h+1);
```

```
            }
```

```

if (t[h] == NULL)
    return -1;
else
    return t[h] -> v;

```

```

}
void Rem(int k)
{
    int h = HashF(k);
    while (t[h] != NULL)
    {
        if (t[h] -> k == k)
            break;
        h = HashF(h+1);
    }
    if (t[h] == NULL)
    {
        cout << "No element found at key" << k << endl;
        return;
    }
    else
    {
        delete t[h];
    }
    cout << "Element deleted" << endl;
}

```

```

}

```