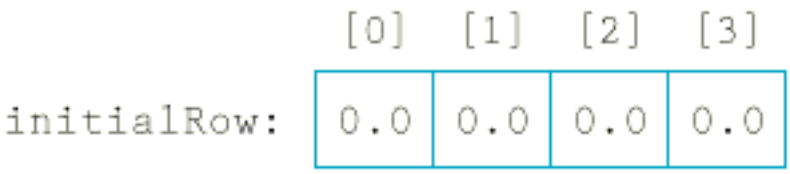
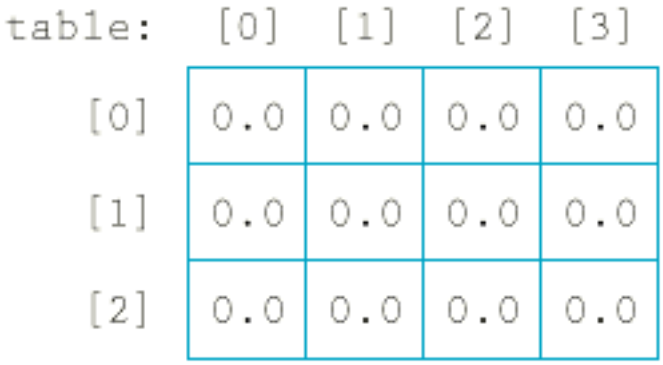
P. 715-7: Two-Dimensional `vector`s

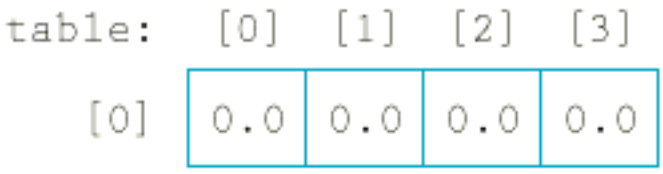
```
const int COLUMNS = 4;
vector<double> initialRow(COLUMNS, 0.0);
```



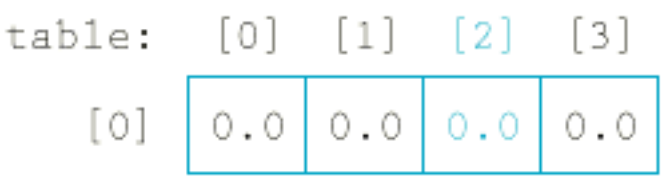

```
const int ROWS = 3;
vector< vector<double> > table(ROWS, initialRow);
```




`table[0]`:




`table[0][2]`:



```
typedef vector<double> TableRow;
typedef vector<TableRow> Table;

Table theTable:
```

| theTable: | [0] | [1] | [2] | [3] |
|---|---|---|---|---|
| [0] | 0.0 | 0.0 | 0.0 | 0.0 |
| [1] | 0.0 | 0.0 | 0.0 | 0.0 |
| [2] | 0.0 | 0.0 | 0.0 | 0.0 |

Add a row:

```
theTable.push_back(TableRow(COLUMNS, 0.0));
```

| theTable: | [0] | [1] | [2] | [3] |
|---|---|---|---|---|
| [0] | 0.0 | 0.0 | 0.0 | 0.0 |
| [1] | 0.0 | 0.0 | 0.0 | 0.0 |
| [2] | 0.0 | 0.0 | 0.0 | 0.0 |
| [3] | 0.0 | 0.0 | 0.0 | 0.0 |

Add a column:

```
for (int row = 0; row < theTable.size(); row++)
   theTable[row].push_back(0.0);
```

| theTable: | [0] | [1] | [2] | [3] | [4] |
|---|---|---|---|---|---|
| [0] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| [1] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| [2] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| [3] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

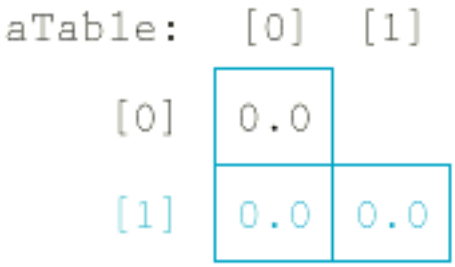
# Jagged Tables:

```
Table aTable;

for (int cols = 1; cols <= 3; cols++)
   aTable.push_back(TableRows(cols, 0.0) );
```

cols = 1:

cols = 2:




cols = 3: