CS2604: Project 2 Example

Let us consider the following example –

```plaintext
insert 514 514 A
insert 514 1538 B
insert 6144 6144 C
insert 6679 9557 D
insert 9681 9557 F
debug
remove 514 1538
debug
search 8180 9557 1600
makenull
```

Let us go over the commands one by one and see how the database space and the bin tree are affected. The proper outputs are also shown –

**Initially** –

**The Space** –

```
<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>16383</td>
<td>0</td>
</tr>
</tbody>
</table>
```

**The Tree** –

```
Head
|
FLY_WT
```
Command: insert 514 514 A
Output: Inserted A at 514,514

The space:

A

The Tree:

Head

A

Command: insert 514 1538 B
Output: Inserted B at 514,1538

Space:
The Tree:

Command: insert 6144 6144 C Output: Inserted C at 6144,6144
Command: insert 6679 9557 D Output: Inserted D at 6679,9557
Command: insert 9681 9557 F Output: Inserted F at 9681,9557
The Tree:

Command: debug
Output: Following is a list of the nodes –
GGGGGGGG514,514,514,1538,BEEEE6144,6144,6679,9557,D9681,9557,F

Command: remove 514 1538
Output: City B at 514,1538 removed
Space:
The Tree:

![Tree Diagram]

Command: debug
Output: Following is a list of the nodes –
GGG514,514,A6144,6144,C6679,9557,D9681,9557,F

Command: search 8180 9557 1600
Output: Cities found in the searched region –
D 6679,9557
F 9681,9557
No. of nodes traversed – 6

Command: makenull
Output: Database reinitialized
Space:

![Space Diagram]