



THE FENCE POST PROBLEM

The Off By One Problem

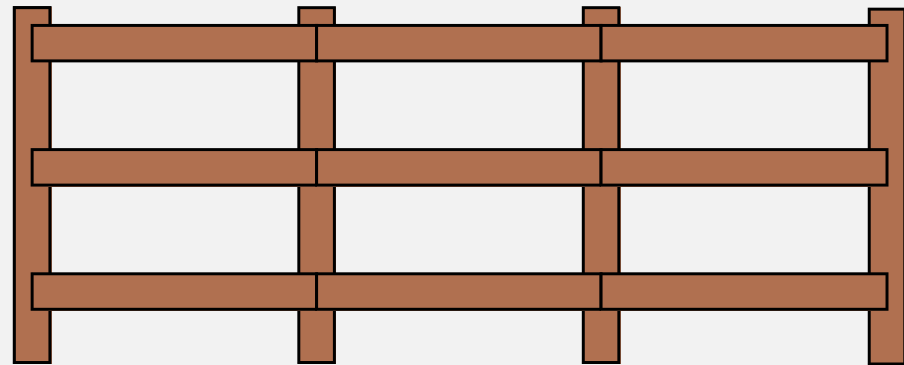


THE OFF BY ONE PROBLEM

- `for (int i = 1; i < 10; i++)`
 - `i: 1 - 9`
- `for (int i = 0; i <= 10; i++)`
 - `i: 0 - 11`
- `for (int i = 1; i <= 10; i++)`
 - `i: 1 - 10`
- `for (int i = 0; i < 10; i++)`
 - `i: 0 - 9`

THE FENCE POST PROBLEM

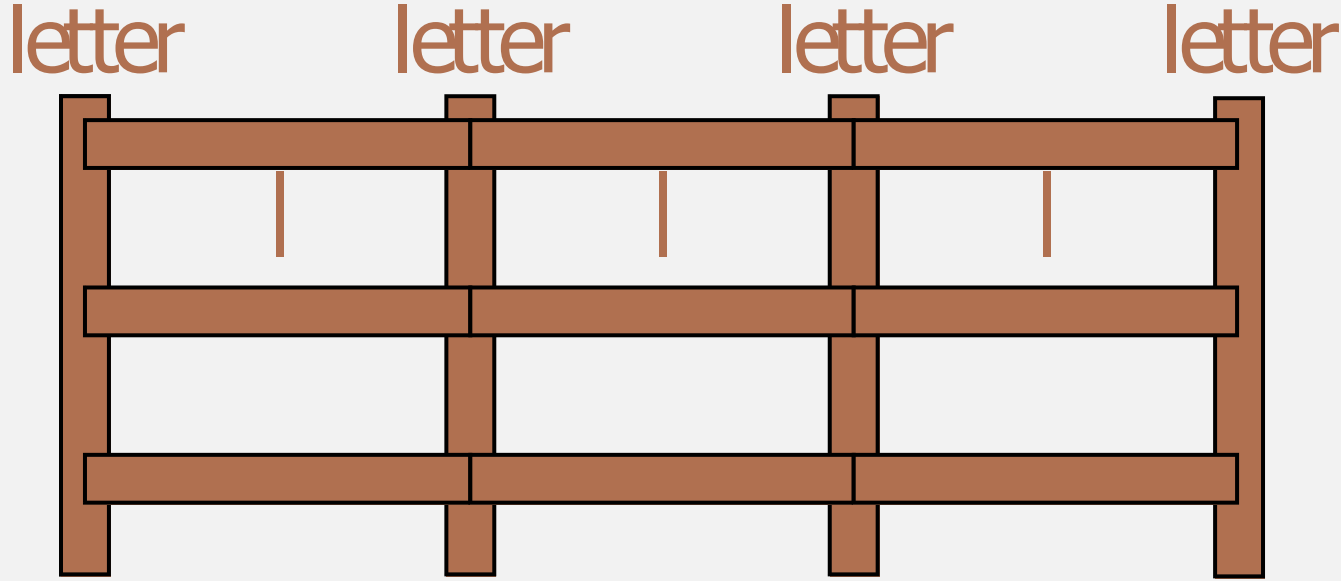
- Loops execute a group of operations
- The fence post problem arises when one operation doesn't fit in the loop
- Three choices for the loop body
 - post, if not the last post, span
 - post and span – last post as a special case
 - first post as a special case - span and post





THE FENCE POST IN A PROGRAM

- A|B|C|D|E|F|G|H|I|J|K|L|M|N|O|P|Q|R|S|T|U|V|W|X|Y|Z



PROGRAMMING THE FENCE POST

```
for (char c = 'A'; c < 'Z'; c++)  
    cout << c << '|';  
cout << 'Z' << endl;
```

