TRAP 1: How NOT to preallocate space for std::vector in C++

C++17

The snippet on the left creates a vector 0,0,0 and additionally pushes back 0,1,2. That wasn't the intention. To correctly preallocate space for 3 elements use **std::vector::reserve()**.

```
auto v = std::vector<int>(3);

v.push_back(0);
v.push_back(1);
v.push_back(2);
```

✗ **0 0 0 0 1 2**

```
auto v = std::vector<int> {};
v.reserve(3);
v.push_back(0);
v.push_back(1);
v.push_back(2);
```

✓ **0 1 2**

Better alternative: Use STL

```
auto v = std::vector<int>(3);
std::iota(std::begin(v), std::end(v), 0);
```

0 1 2

```
auto v = std::vector<int>(3);
std::generate(std::begin(v), std::end(v),
              [n = 0] () mutable { return n++; });
```

0 1 2

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