

## Circle the Variables' Scopes

```
#include <iostream>
using namespace std;
```

```
int main() {
    int a = 3;

    for (int i = 7; i > a; i--) {
        for (int j = 11; j > i; j--) {
            cout << "*";
        }

        cout << endl;
    }

    return 0;
}
```

The diagram illustrates the scope of variables in the provided C++ code. A large blue circle encompasses the entire `main` function, from `int main()` to the final closing brace. Inside this, a green circle outlines the scope of the first `for` loop, starting from `for (int i = 7;` and ending at the closing brace of the loop. Within the green circle, an orange circle outlines the scope of the nested `for` loop, starting from `for (int j = 11;` and ending at its closing brace. Small circles are drawn around each variable declaration: `a` in the `int a = 3;` line, `i` in the first `for` loop's header, and `j` in the second `for` loop's header. Lines connect these circles to their respective scope boundaries: a blue line from `a` to the blue boundary, a green line from `i` to the green boundary, and an orange line from `j` to the orange boundary.