



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

// Main function
int main() {
    cout << "Hello world!" << endl;
    return 0;
}
```

Annotations for the first code block:

- `#include <iostream>`: include standard input-output stream
- `using namespace std;`: use `std` container for names
- `int main() {`: execution starts from `main` function
- `cout << "Hello world!" << endl;`: output in C++ (points to `cout`), operator to output (points to `<<`), and endl/newline in C++ (points to `endl`)
- `return 0;`: operator to output (points to `<<`)

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

int main() {
    int value = 0;
    cout << "Enter a number: ";
    cin >> value; //
    cout << "The value is: " << value << endl;
    return 0;
}
```

Annotations for the second code block:

- `cout << "Enter a number: ";`: output operator is out of the page (points to `<<`)
- `cin >> value; //`: input operator is into the page (points to `>>`)

return type      function name      input argument

```
int factorial(int n) {
    int result = 1;
    for (int i = 1; i <= n; i++) {
        result *= i;
    }
    return result;
}
```

function body

- ① return or output parameter type
- ② function name
- ③ type of input paramter
- ④ input paramter
- ⑤ body of the function

```
①      ②      ③      ④
int factorial(int n) {
    ⑤
    int result = 1;
    for (int i = 1; i <= n; i++) {
        result *= i;
    }
    return result;
}
```