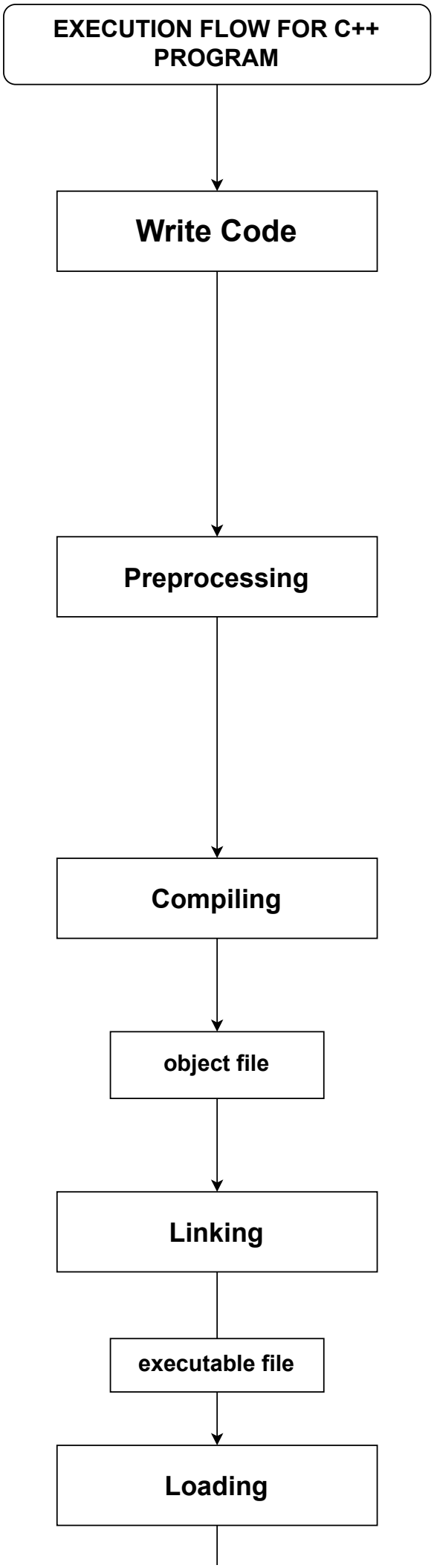



```cpp
#include <iostream>

int add(int a, int b) {
    return a + b;
}

int main() {
    int x = 5, y = 10;
    int result = add(x, y);
    std::cout << "Sum: " << result <<
    return 0;
}
```

The preprocessor reads the `#incl` contents of the `iostream` header functionality).

Any macro definitions (if there we

The compiler verifies the syntax o and ensuring that `add()` is correc

It then generates an object file (e.g object code represents the compil executable.

The linker resolves external refere example, it finds the address of th

It also links in the standard library defined in the C++ standard libra

The loader assigns memory for the `result`).

It also loads the program's code in

```
< std::endl;
```

`.ude <iostream>` directive and replaces it with the
file (which contains declarations for input/output

re any) would be expanded here.

f the code, such as checking if `std::cout` is used properly
ctly defined and called.

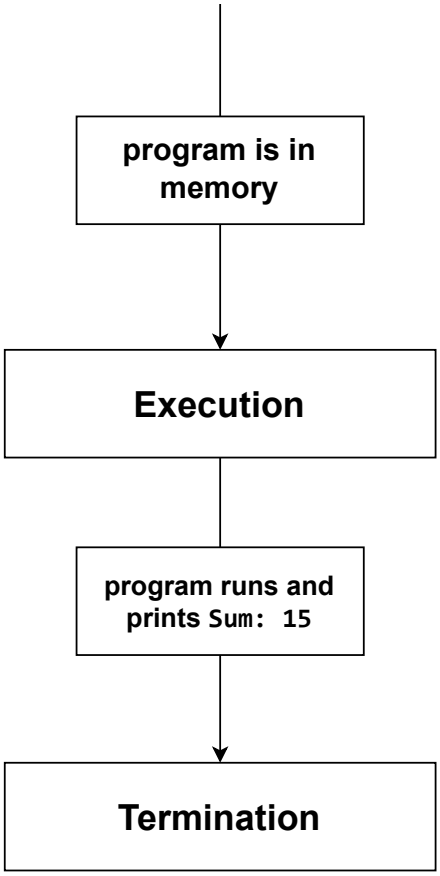
g., `example.o` or `example.obj`) with machine code. This
led version of your program but is not yet fully

nces, like the `std::cout` object and `add()` function. For
ıe `add()` function and links it with the compiled code.

functions like `std::cout` and `std::endl`, which are
ry.

e program's data (e.g., for the integer variables `x`, `y`, and

ıto memory for execution.



Initializes the standard library runti

The program starts from `main()`.

The function `add(x, y)` is called,
(`15`).

The result (`15`) is stored in the va

The program then outputs `"Sum:`

The `main()` function reaches its e

The operating system frees any re
for the stack and heap.

ime if necessary.

The values `x = 5` and `y = 10` are stored in memory.

which adds `5` and `10` together and returns the result

riable `result`.

`15"` using `std::cout`.

nd and returns `0`, signaling successful completion.

sources allocated to the program, such as memory used