Separate Compilation

To <mark>define a library</mark> in C++, you'll supply four parts:

- the <mark>client</mark> or <mark>test</mark> program, which **uses** the functions in the library.
- the <mark>interface</mark>, which provides information needed to use the library. The interface consists of **declarations** or **prototypes**, and will go into a **header** file.
- the <mark>implementation</mark>, which provides the details. The implementation consists of **function definitions**.
- the <mark>makefile</mark> which puts the parts together to produce the executable.

To try this out, we'll write a library containing three functions:

- `int firstDigit(int n)`, returning the **first** digit of its argument
- `int lastDigit(int n)`, returning the **last** digit of its argument
- `int numDigits(int n)` returning the **number of digits** in its argument

Calling `firstDigit(1729)` will return **1**; calling `lastDigit(1729)` will return **9**; calling `numDigits(1729)` returns **4**.