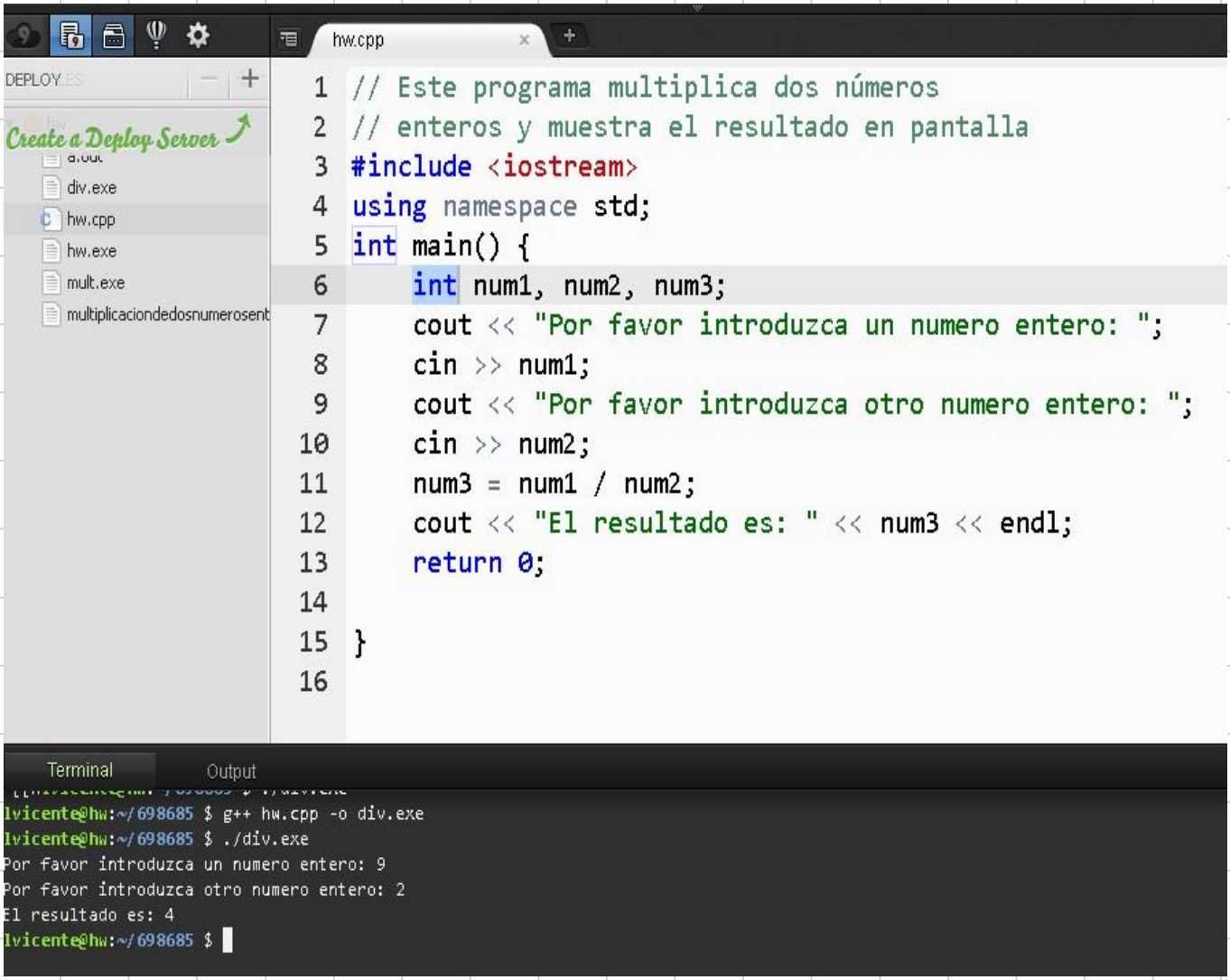
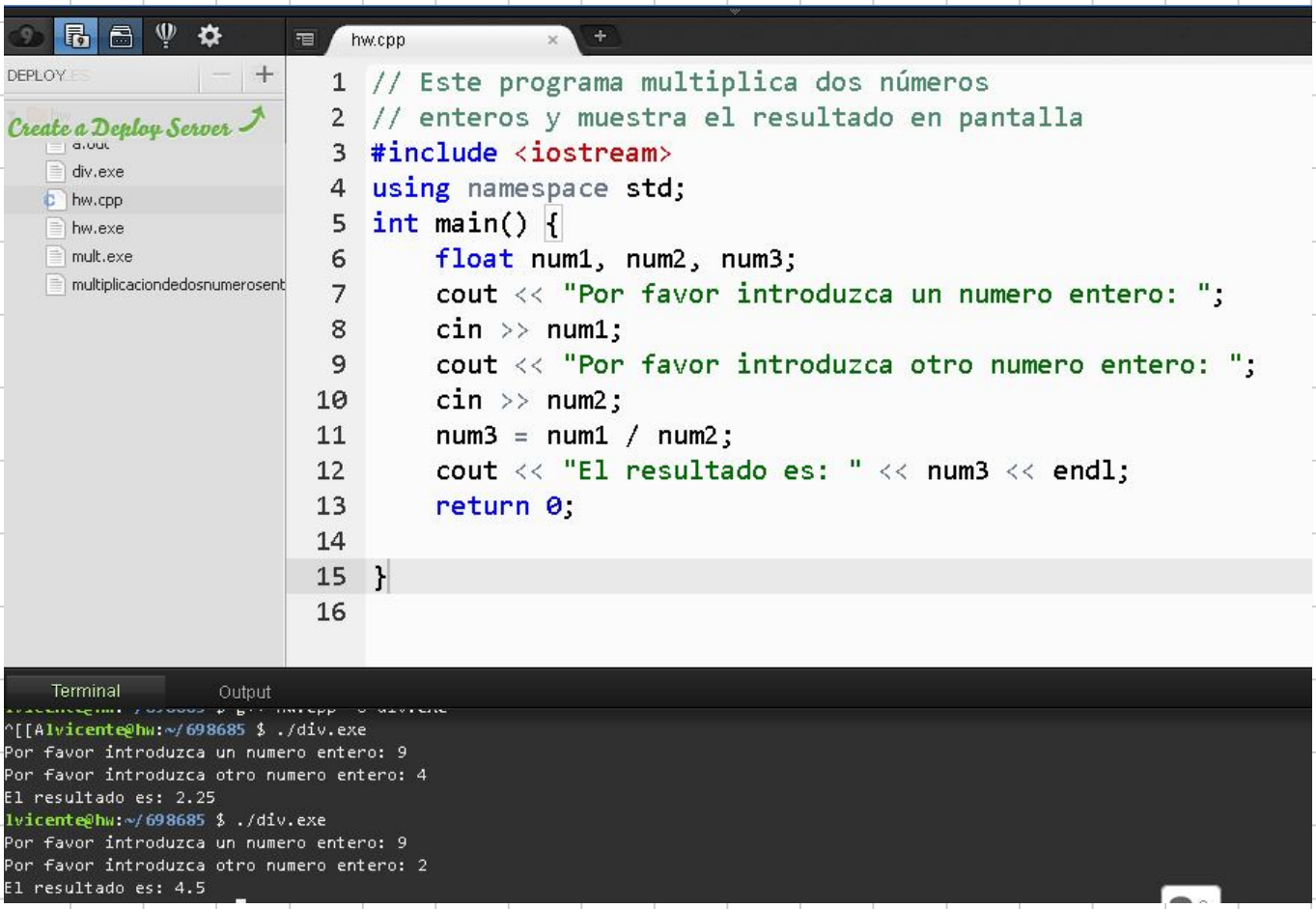
CECS2200-20-p1c3

Abrir el cloud nine y vamos a hacer un programa sencillo que multiplique dos números enteros.



Ahora vamos a usar numeros decimales: float



In C++ there are three data types that can represent floating-point numbers. They are

```
float
double
long double
```

The `float` data type is considered *single precision*. The `double` data type is usually twice as big as `float`, so it is considered *double precision*. As you've probably guessed, the `long double` is intended to be larger than the `double`. The exact sizes of these data types is dependent on the computer you are using. The only guarantees are

- A `double` is at least as big as a `float`.
- A `long double` is at least as big as a `double`.

2.7 Integer Data Types

CONCEPT: There are many different types of data. Variables are classified according to their data type, which determines the kind of information that may be stored in them. Integer variables can only hold whole numbers.

Table 2-6 Integer Data Types, Sizes, and Ranges

Data Type	Size	Range
`short`	2 bytes	–32,768 to +32,767
`unsigned short`	2 bytes	0 to +65,535
`int`	4 bytes	–2,147,483,648 to +2,147,483,647
`unsigned int`	4 bytes	0 to 4,294,967,295
`long`	4 bytes	–2,147,483,648 to +2,147,483,647
`unsigned long`	4 bytes	0 to 4,294,967,295

byte 0000 0000 $\{^{0}_{1}$ $2^8 = 2^4 2^4 = 16 \cdot 16 = 256$

2 byts $2^{16} = 2^8 \cdot 2^8 = 256 \cdot 256 = \underline{65536}$

$2^{15} = 32768$

Table 2-8 Floating-Point Data Types on PCs

Data Type	Key Word	Size	Range	Significant Digits
Single precision	`float`	4 bytes	Numbers between ±3.4E-38 and ±3.4E38	7
Double precision	`double`	8 bytes	Numbers between ±1.7E-308 and ±1.7E308	16
Long double precision	`long double`	8 bytes*	Numbers between ±1.7E-308 and ±1.7E308	16