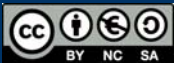


## The Ternary Operator ?

Grado en Ingeniería Informática

Luis Hernández Yáñez  
Facultad de Informática  
Universidad Complutense



## The Ternary Operator ?



### Conditional Expression

Two alternatives

- *Condition*: Logical expression
- *Exp1* and *Exp2*: Expressions

If *Condition* evaluates to **true**, the result is *Exp1*

If *Condition* evaluates to **false**, the result is *Exp2*

```
int a = 5, b = 3, c;  
c = (a + b == 10) ? 2 : 3;  
c = ( 8 == 10) ? 2 : 3;  
c = false ? 2 : 3;  
c = 3;
```

Operators (Priority)
++ -- (postfix) Function Call Casts
++ -- (prefix) ! - (sign change)
* / %
+ -
< <= > >=
== !=
&&
?:
= += -= *= /= %=



# The Ternary Operator ?

## Equivalent if-else

```
c = (a + b == 10) ? 2 : 3;
```

Is equivalent to:

```
if (a + b == 10)
    c = 2;
else
    c = 3;
```

Can be nested:

```
cout << (grade == 10 ? "MH" : (grade >= 9 ? "SB" :
(grade >= 7 ? "NT" : (grade >= 5 ? "AP" : "SS"))))
```

The equivalent if-else-if ladder is in the next page...



# The Ternary Operator ?

## Equivalent if ... else if ... ladder

```
cout << (grade == 10 ? "MH" : (grade >= 9 ? "SB" :
(grade >= 7 ? "NT" : (grade >= 5 ? "AP" : "SS"))))
```

```
if (grade == 10)
    cout << "MH";
else if (grade >= 9)
    cout << "SB";
else if (grade >= 7)
    cout << "NT";
else if (grade >= 5)
    cout << "AP";
else
    cout << "SS";
```

