

conditional operator ➤ 5.2

More complex expressions are possible. For example, it's not unusual to see the conditional operator used in a return expression:

```
return n >= 0 ? n : 0;
```

When this statement is executed, the expression `n >= 0 ? n : 0` is evaluated first. The statement returns the value of `n` if it's not negative; otherwise, it returns 0.

If the type of the expression in a return statement doesn't match the function's return type, the expression will be implicitly converted to the return type. For example, if a function is declared to return an `int`, but the return statement contains a `double` expression, the value of the expression is converted to `int`.

return statements may appear in functions whose return type is `void`, provided that no expression is given:

```
return;    /* return in a void function */
```

Q&A

Putting an expression in such a return statement will get you a compile-time error. In the following example, the return statement causes the function to return immediately when given a negative argument:

```
void print_int(int i)
{
    if (i < 0)
        return;
    printf("%d", i);
}
```

If `i` is less than 0, `print_int` will return without calling `printf`.

A return statement may appear at the end of a void function:

```
void print_pun(void)
{
    printf("To C, or not to C: that is the question.\n");
    return;    /* OK, but not needed */
}
```

Using `return` is unnecessary, though, since the function will return automatically after its last statement has been executed.

If a non-void function reaches the end of its body—that is, it fails to execute a return statement—the behavior of the program is undefined if it attempts to use the value returned by the function. Some compilers will issue a warning such as “*control reaches end of non-void function*” if they detect the possibility of a non-void function “falling off” the end of its body.

9.5 Program Termination

Since `main` is a function, it must have a return type. Normally, the return type of `main` is `int`, which is why the programs we've seen so far have defined `main` in the following way: