Topics

1. Operators
   - 1.1 Relational and Logical Operators
   - 1.2 Increment and Decrement Operators
   - 1.3 Assignment Operators

2. Promotion

1 Operators

1.1 Relational and Logical Operators (cont.)

Instead of

```c
if(n>100){
    if(x = getdat()){
```

one should consider using

```c
if(n > 100 && x = getdat())
```

The reason: one doesn’t want to have to read many if statements to understand the structure of the program.

Other Remarks:
The unary operator ! changes 0 to 1 and any nonzero to 0.
The assignment expression n=5 sets n equal to 5 but also evaluates to 5. So the line

```c
j=(n=5)
```

assigns n equal to 5 and j equal to 5.

```c
if(copy=n){ /* single equals ok */}
```

copies value of n to variable copy, then evaluates the if statements if n is nonzero. Comment is useful here since you might be tempted to correct with double equals.

1.2 Increment and Decrement Operators

Some Examples
The listing
n=5;
x=n++;  

will result in x = 5 and n = 6. On the other hand, the listing

n=5;
x=++5;

results in x = 6 and n = 6.

1.3 Assignment Operators
Some Examples
The listing

b = b * scale;

is the same as

b *= scale;

and i++ is the same as i+=1 is the same as i = i+1.

1.4 Tertiary Operator
Some Examples
The listing

if(x > 0) ess = x;
else ess = 0;

is the same as

ess = x > 0 ? x : 0

Another commonly used example:

min = x > y ? y : x;

2 Promotion
The compiler will convert one value to a more meaningful value (more bits) when it encounters them in an assignment; e.g.
short -¿ long
float -¿ double
The compiler will also truncate; e.g.

double x;
int ix;
x = 7.9; ix = x;
yields \( \text{ix} = 7; \)

To convert a character representation of an integer to integer or float use: \texttt{atoi()} or \texttt{atof()}