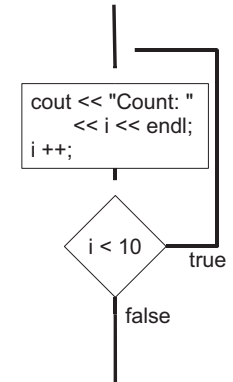


Do While Loops

do Loops

- do loops are similar to while loops, but... with the condition at the end.

```
int i = 0;  
do {  
    cout << "Loop: " << i << endl;  
    i ++;  
} while (i < 10);
```



do vs while

- A do loop must be executed... at least once, whereas a while loop can execute... zero times:
- do Loop:

```
do {  
    cout << "In DO loop." << endl;  
} while (false)
```
- while loop:

```
while (false) {  
    cout << "In WHILE loop." << endl;  
}
```
- Total Output... "In DO loop".

For Loops

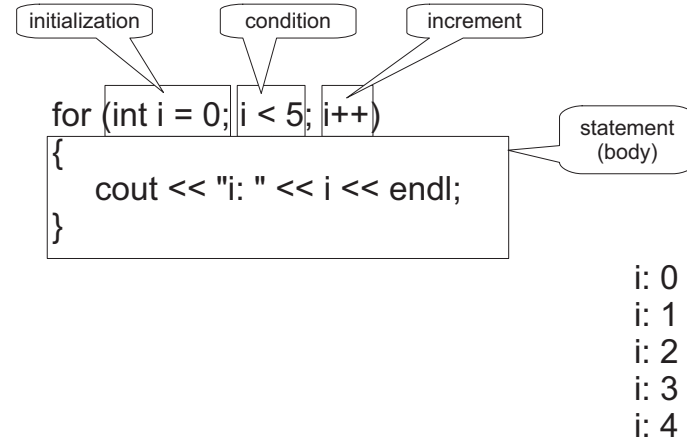
for

- Definite Loop:
 - A loop where we know ...
how many times we want to do something:
“Count from 1 to 10..”
- Indefinite Loop:
 - A loop where we... cannot easily
tell how many times we will execute the loop:
“Count up from 1 to find first multiple of 3, 4 and 18”
- for loops are often useful to neatly organizing
definite loops.

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Simple Example



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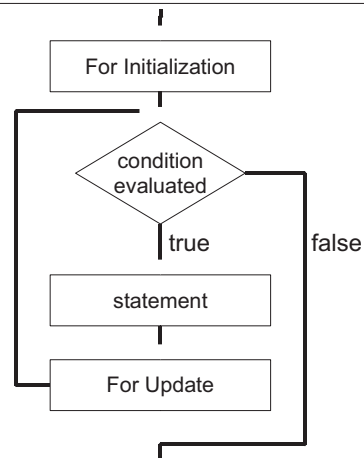
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Work Through Examples

```
for (int i = 0; i < 5; i++) {  
    cout << i << endl;  
}
```

```
for (int i = 100; i > 0; i -= 10) {  
    cout << i << endl;  
}
```

```
int i = 0;  
for ( ; i < 100; ) {  
    i *= 2;    // Not a good idea to  
    i ++;     // change loop counter  
              // inside for loop.  
}
```



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Notes on for

- Variables declared in the for loop's initialization...
only exist in the for loop:

```
for (int i = 0; i < 10; i++) {  
    cout << i << endl;  
}  
cout << i << endl;    // COMPILE ERROR
```

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Summary

- Increment & Decrement:
 - Prefix: ++x, --x.
 - Postfix: x++, x--
- Loops done with:
 - while: Condition up front (pretest)
 - do: Condition at the end (post-test)
 - for: Best for a definite number of iterations (pretest)