For Construct in C++

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Repeating Tasks

- C++ provides another way for us to repeat our tasks

- This is called a for loop

- For loop has the same three parts as the while loop:

  - Initialize Counter

  - Comparison on Counter

  - Update Counter

Two type of loops, why?

- Why did C++ provide two types of looping constructs?
- The for loop is designed with conveniences of the programmer in mind.
- When designing programs you think ahead of time how many times the loop needs to be repeated.
- C++ for loops are setup that exact way.

For Loop Model

- Model:

for(*initialize ; comparison ; update*)

{

    //do something here many times

}

- Notice that the three parts of the while loop is pack together in one place in the for loop.

For Loop Model Example

- Example:

```
for( int c = 1 ; c <= 10 ; ++c )
{
    //do something here 10 times
}
```

While Loop vs. For Loop

- There are no definitive rules stating when to use which loop, here are my recommendations:
- Use while loop if…
  - Do not know number of times to loop in advance
  - Loop condition is based on user input
- Use for loop if…
  - Number of times to loop is known in advance
  - If nesting loops is needed for logical flow