For Construct in C++

Instructor: Krishna Mahavadi
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:

```java
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